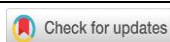




## The Effectiveness of the Quantum and Discovery Learning Models on Learning Achievement of Islamic Education in Junior High Schools

\*Ifa Lidia Wati, Rihab Wit Daryono  
Ponorogo State Islamic Institute, Ponorogo, Indonesia



DOI: <https://doi.org/10.46245/ijorer.v5i4.605>

### Sections Info

#### Article history:

Submitted: May 13, 2024

Final Revised: June 11, 2024

Accepted: June 12, 2024

Published: July 30, 2024

#### Keywords:

Cognitive Learning Outcomes;

Discovery Learning;

Quantum Learning.



### ABSTRACT

**Objective:** Low student learning outcomes in Islamic religious education lessons so that the required learning competencies are not achieved. This research aims to improve students' cognitive learning outcomes through QL and DL learning models. **Method:** The research used in this research is experimental research with the type of research used as Quasi Experiment using a non-random pretest-posttest control group design. Pretest-Posttest Non-Equivalent Control Group Design. The data collection technique used in this research was pretest and posttest in experimental classes 7A and 7B. **Results:** The results of this study show that the QL and DL methods can improve students' cognitive abilities with learning outcomes for experimental class 7A (QL) while for experimental class 7B (Discovery Learning). Meanwhile, the Independent Sample T-test results show significant differences in learning outcomes between experimental class 7A (QL) and experimental class 7B (Discovery Learning) with Sig. (2-tailed) smaller than 0.05. So, the QL learning model is more effectively used to improve students' cognitive learning outcomes than the DL learning model. **Novelty:** The application of QL in this research and the Discovery of Learning to improve student outcomes can be explored in particular educational contexts, such as STEM, arts, or foreign language learning. Both models can be adapted or modified to achieve optimal learning outcomes.

### INTRODUCTION

The current condition of education in Indonesia has become the focus of discussion not only among the government but also throughout all levels of society. This condition occurs because some teachers have been unable to keep up with the changes in education. So, this impacts the weak process and implementation of learning. In the learning process, some teachers still prioritize lecture and memorization methods. So, because of this, the learning process becomes ineffective and hinders students' creativity in developing their potential. Education has a vital role in life. One education that plays an essential role in human life is Islamic Religious Education (Aisy et al., 2022; Amrianto & Lufri, 2019). Islamic religious education is a lesson that teaches students how to behave according to the teachings of the Islamic religion. However, students' interest in studying Islamic religious education needs improvement. This happens because some teachers need help to contextualize the material presented. So, learning becomes passive. Namely, the teacher explains, and the students listen; the teacher asks questions and answers. Apart from that, the material presented by the teacher could be more exciting and challenging, reducing students' motivation to learn (Asradi & Sarman, 2022).

Managing education and bringing about various educational innovations is necessary to improve the quality of effective and efficient Islamic religious education. One of the efforts teachers must make to improve education is to innovate curriculum

development (Atiyah et al., 2020). In cognitive theory, it is stated that learning is an active process, meaning that the best way for students to start learning certain concepts or principles is by constructing the concepts and principles being studied themselves. Namely, students interact directly with their environment to explore, elaborate, confirm, and experiment with the studied objects (Ellizar et al., 2019; Korres, 2019).

Teaching problems in Islamic Religious Education subjects result in very little student interest in taking lessons. Teachers have used several learning models, such as peer tutoring, inquiry, lectures, and demonstrations. This learning process continues continuously and will result in students needing more concentration and focus in receiving the learning material presented by the teacher (Lubis, 2020; Mulbar et al., 2021). Any material the teacher presents will be significantly complex for students to accept, as students' levels of understanding vary. The learning process in schools still finds several problems that will ultimately affect learning achievement; these problems include Teachers not maximizing the learning process or, in other words, teachers still using learning models that are not yet varied, causing boredom for students (Mulyanto et al., 2020; Prasetyo & Abduh, 2021).

Several research results indicate that the teacher's problem in teaching Islamic Education is that the level of student activity still needs to be higher, and students tend to be passive, which affects student learning outcomes. The low learning achievement of students is also possible because teachers have yet to use learning methods or media and have designed learning scenarios adapted to the material's characteristics and students' conditions. Based on this fact, to stimulate and increase the active role of students both individually and in groups in the Islamic Education learning process, this problem must be handled by finding a suitable learning model that is appropriate to the material being taught (Rahayu & Mustika, 2021; Rahmawati & Munika, 2021). This is in line with the results of research, which concluded that one of the difficulties Islamic Education teachers have in implementing Islamic Education learning materials is student activity. Because the only active ones are the same and the others are just silently listening, we do not know whether they silently understand, even though they understand when asked the students' answers. For this reason, teachers need to motivate students to pay more attention to Islamic Education learning (Rizaldi & Mawardi, 2021; Safitri et al., 2020).

Referring to the difficulties and problems of Islamic Education teachers, which have been explained above, it can be concluded that there is a phenomenon that Islamic Education teachers still experience difficulties in managing Islamic Education learning, especially in choosing appropriate models and tests in evaluating Islamic Education learning so that learning outcomes are not measurable. With no intention of denigrating the role of Islamic Education teachers in schools, this must be a common concern so that Islamic Education learning improves over time. The impact is that students' cognitive learning outcomes need to meet the Minimum Completeness Criteria (Dude, 2020; Hakim et al., 2022). One indicator of quality education is the achievement of student learning outcomes. The value of student learning outcomes can be further improved if learning takes place effectively and efficiently. The benchmark for learning success in general is learning achievement. The learning process at school can influence learning achievement; this process is influenced by student activity. Choosing the correct method is the key to the success of a learning process. Varied learning methods will increase students' enthusiasm for involving themselves in the learning process. Learning methods that involve students will make students active in learning. The

involvement of students in the learning process will increase students' understanding of the material presented by the teacher. With students actively learning and understanding the material optimally, student learning outcomes will improve (Hasanah et al., 2022; Karimah, 2023).

Based on this, researchers need to provide the research described in this paper regarding improving students' cognitive learning outcomes in Islamic Education subjects using the Discovery Learning (DL) and Quantum Learning (QL) models. These two learning models can potentially increase student activity and learning outcomes, mainly student cognitive learning outcomes (Khozaei et al., 2022; Lastasa & Habaridota, 2020). In connection with the application of learning models to increase student activity and student learning outcomes, studies on using the QL model, including research conducted, obtained excellent results. The research results show that applying the QL model in learning Islamic Religious Education material can improve student learning outcomes. This is proven by the increase in the use of the QL model in Islamic Education lessons after being given treatment (Muflihah et al., 2020; Munawarah et al., 2020)

DL model. This model is to develop an active way of learning for students by discovering and investigating on their own so that the results obtained will be loyal and long-lasting in memory and will not be easily forgotten by students. Based on research on Increasing Learning Achievement Using the DL Model to improve student learning outcomes, excellent results were obtained (Sari & Abdulrahman, 2019; Saryadi & Sulisworo, 2023). The research results show that applying the DL model in learning Islamic Religious Education material can improve student learning outcomes. Today, it is proven from the tests carried out that the lowest score obtained by students during the news was 45, and the highest score on the news was 75. The lowest score obtained by students during the poster was 75, and the highest score during the posttest was 100. From the results In this test, most of the students' learning outcomes improved (Satriani et al., 2022; Serevina & Luthfi, 2021).

The novelty of this research can be seen from the fundamental differences from previous analyses. Namely, the variables used in this research are more focused on the learning outcomes of seventh-grade students in the Islamic Education Al-Quran and Sunnah material. As a guide, later, it will be tested whether applying learning models from these two models can improve student learning outcomes (Ainissyifa et al., 2023). This research aims to improve student learning outcomes in Islamic Education subjects by using the QL and DL models to determine students' initial and final abilities with treatment and compare them between the two models. This research is essential to provide insights and updates for Islamic Education teachers in implementing active and fun learning models through active learning models for students. The results of this research strengthen the use of the QL and DL models by Islamic Education teachers as a solution to the Islamic Education teacher difficulties described in the problem paragraph above (Aisy et al., 2022; Yudho et al., 2023).

This research is interesting because topics related to the effectiveness of learning models in Islamic Education are very relevant to the educational context in many countries. Providing valuable insight into which learning approach is more effective in increasing student learning achievement in religious subjects and comparing two different learning models, namely the QL model and DL, this comparison provides an opportunity to understand more deeply the advantages and disadvantages of each approach and its implications for student learning achievement by evaluating the

effectiveness of two learning models. This research aims to assess the effectiveness of the Lee Running QL and DL models on student learning achievement in Islamic religious education at school. This research has the potential to provide recommendations that can improve the quality of learning in schools, especially in the context of Islamic religious education learning. The research results can be a valuable contribution to the literature on the effectiveness of learning models in this context.

## RESEARCH METHOD

The research used in this research is experimental research, with the type of research used being quasi-experiment using a non-random pretest-posttest control group design (Arga et al., 2022). Pretest-Posttest Non-Equivalent Control Group Design. Experiment is a research method that, in its implementation, does not use random assignment but instead uses existing groups. The sampling was conducted at JHS 4 Ponorogo using classes 7A and 7B as experimental objects. There are two classes, namely class 7A, which is given treatment using the QL model, and class 7B, which is given treatment using the DL model. Next, two tests were conducted to obtain data from the two classes: the initial pretest and the posttest. The pretest and posttest results were compared (Arga et al., 2022; Heru et al., 2021). Table 1 is the Pretest-Posttest Non-Equivalent Control Group Design research design.

**Table 1.** Research design.

| Experiment | Class | Pretest | Treatment | Posttest |
|------------|-------|---------|-----------|----------|
| E1         | VII-A | O11     | X1        | O12      |
| E2         | VII-B | O21     | X2        | O22      |

Information:

- E<sup>1</sup> : group with the QL learning model
- E<sup>2</sup> : group with the DL learning model
- X<sup>1</sup> : treatment in the form of learning with the QL learning model
- X<sup>2</sup> : treatment in the form of learning with the DL learning model
- O<sup>11</sup> : preliminary test results (Pretest) class VII-A
- O<sup>21</sup> : preliminary test results (Pretest) class VII-B
- O<sup>12</sup> : final test results (Posttest) class VII-A
- O<sup>22</sup> : final test results (Posttest) class VII-B

The population of the generalization area in this research is all students in class VII-A JHS 4 Ponorogo, totaling 30 students, and students in class VII-B JHS 4 Ponorogo, totaling 30 students. So, the total number of students in classes VII-A and VII-B at JHS 4 Ponorogo is 60. The sampling method used in this research is Non-Probability Sampling with a saturated sampling technique. Non-probability sampling does not provide an equal opportunity or chance for each element or member of the population to be selected as a sample (Novita et al., 2022; Nuraini et al., 2022). The saturated sampling technique is a technique for determining the sample if all population members are used as samples. From randomly determining the sample group, it was found that class VII A with 30 students was the experimental class 1, namely the class treated with the QL model, and class VII B with the number 30 students became experimental class 2 was treated with the DL model.

In this research, the type of measurement instrument uses pretest and posttest. Next, a normality test was carried out. The normality test was carried out on the pretest and posttest value data. In this research, the normality test was carried out using the Shapiro-Wilk test. After carrying out a normality test, the data obtained is usually distributed, then carry out a homogeneity test and an average test (t-test) (Rosantono et al., 2021; Saifurrahman et al., 2021; Setyadi et al., 2021). Homogeneity tests were carried out on all data results in the QL and DL classes. The statistical test used to test homogeneity of variance is the Levene test, with a significance level of 5%. Levene's test can be used on data that is usually or not distributed and types of data that are continuing. Hypothesis testing in this research uses the independent sample t-test (H1 & H2), namely that there is a significant difference in learning outcomes between the QL and DL methods.

Meanwhile, the formulation of the paired sample t-test hypothesis (H3 & H4) (Daryono et al., 2023, 2024; Supriyanto et al., 2022). Testing the paired sample t-test to prove whether or not the research samples before and after treatment have significantly different averages. The effectiveness of the QL and DL models can be analyzed using the gain value. The N-gain test is a statistical method used in experimental research to measure the increase in students' understanding or performance before and after specific interventions or treatments. Gain is the difference between the pretest score and the posttest score.

**Table 2.** Pretest-posttest instrument grid.

| Flow Learning Objectives               | Aspect        | Indicator   | Pretest               | Posttest               | Number Items |
|--|---------------|---|-----------------------|------------------------|--------------|
| Al-Quran and Sunnah as Life Guidelines | Knowledge     | Know the definition of the Koran and the hadith of the Prophet  | 1, 3, 13, 16          | 1, 2, 4, 9, 3, 5, 6, 7 | 4            |
|  |               | Know the position of the Koran and Hadith as sources of Islamic teachings                                       | 5, 6, 9, 10, 4, 7, 8. | 8, 10, 11, 12          | 4            |
|  | Understanding | Understand the importance of preserving nature and the environment as an inseparable part of Islamic teachings. | 11, 12, 14, 15, 17    | 11, 13, 14, 15, 16     | 4            |
|  |               | I understand the high scientific enthusiasm of several great Islamic intellectuals.                             | 18, 2, 19, 20         | 17, 18, 19, 20         | 4            |
|  | Application   | Able to explain his understanding of moderate attitudes in religion.  |                       |                        |              |
|  | <b>Total</b>  |   |                       |                        | <b>20</b>    |

## RESULTS AND DISCUSSION

### Results

The cognitive learning results of students in classes 7A and 7B were obtained after a pretest before learning, after which the researcher provided treatment or action by carrying out learning in class 7A with the QL model and class 7B with the DL model. Learning activities usually begin with opening, core, and final activities. Students listen and ask questions about the learning material, evaluate and summarize at the end of the lesson, and provide a posttest student worksheet at the end of the lesson to see the learning results after receiving treatment. Experimental pretest and posttest data were collected through pretest and posttest initial tests, this can be seen in Table 3.

**Table 3.** Experimental results for class 7A and 7B pretest and posttest.

| Subject | 7A      |          | Subject | 7B      |          |
|---------|---------|----------|---------|---------|----------|
|         | Pretest | Posttest |         | Pretest | Posttest |
| 1       | 49      | 91       | 1       | 45      | 65       |
| 2       | 30      | 73       | 2       | 25      | 72       |
| 3       | 42      | 81       | 3       | 30      | 65       |
| 4       | 43      | 93       | 4       | 50      | 72       |
| 5       | 31      | 88       | 5       | 48      | 78       |
| 6       | 39      | 85       | 6       | 45      | 71       |
| 7       | 48      | 91       | 7       | 43      | 72       |
| 8       | 40      | 75       | 8       | 44      | 77       |
| 9       | 56      | 91       | 9       | 50      | 85       |
| 10      | 40      | 87       | 10      | 55      | 74       |
| 11      | 45      | 89       | 11      | 57      | 78       |
| 12      | 39      | 90       | 12      | 39      | 71       |
| 13      | 41      | 89       | 13      | 41      | 81       |
| 14      | 21      | 85       | 14      | 37      | 78       |
| 15      | 25      | 75       | 15      | 57      | 84       |
| 16      | 51      | 92       | 16      | 49      | 72       |
| 17      | 33      | 75       | 17      | 43      | 74       |
| 18      | 25      | 74       | 18      | 54      | 68       |
| 19      | 38      | 89       | 19      | 35      | 88       |
| 20      | 43      | 94       | 20      | 51      | 77       |
| 21      | 43      | 91       | 21      | 54      | 82       |
| 22      | 38      | 74       | 22      | 57      | 81       |
| 23      | 52      | 89       | 23      | 46      | 74       |
| 24      | 42      | 96       | 24      | 48      | 79       |
| 25      | 45      | 89       | 25      | 40      | 75       |
| 26      | 34      | 90       | 26      | 35      | 73       |
| 27      | 52      | 87       | 27      | 47      | 69       |
| 28      | 52      | 91       | 28      | 37      | 85       |
| 29      | 41      | 98       | 29      | 58      | 82       |
| 30      | 47      | 81       | 30      | 65      | 70       |

Table 3 explains information from the class 7A pretest and posttest, which shows that students have yet to study the Al-Quran and Sunnah material as a guide to life. Hence, they get results below the minimum criteria average. After learning the initial abilities of students in class VII-A, the next step is to provide treatment by learning using the QL

method. After being given learning using the QL Model, it turned out to provide an increase in students' posttest results. Meanwhile, the pretest and posttest for class 7B show that students still need to study the Al-Quran and Sunnah material as a guide to life so they get results below the minimum criteria average. After learning the initial abilities of students in class VII-B, the next step is to provide treatment, namely by learning using the DL method. After being given that, learning through the DL Model increased students' posttest results. Based on the number of respondents, namely 30 respondents, the number of respondents in this study was less than 50 respondents, so the normality test used was the Shapiro-Wilk test.

**Table 4.** Tests of normality: Shapiro Wilk test.

|          | Class   | KolmogorovSmirnov <sup>a</sup> |    |       | Shapiro-Wilk |    |      |
|----------|---------|--------------------------------|----|-------|--------------|----|------|
|          |         | Statistic                      | df | Sig.  | Statistic    | df | Sig. |
| Pretest  | class A | .138                           | 30 | .151  | .963         | 30 | .372 |
|          | class B | .073                           | 30 | .200* | .988         | 30 | .977 |
| Posttest | class A | .208                           | 30 | .002  | .883         | 30 | .513 |
|          | class B | .114                           | 30 | .200* | .975         | 30 | .682 |

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

a. Lilliefors Significance Correction

Based on the results of calculations using the Shapiro-Wilk test in the Table 4, it can be concluded that the pretest score data are significant for classes 7A and 7B. In class A, it is 0.372 and 0.977 in class B. Both show a significance value of more than 0.050, which means H0 is accepted. Based on the test results, the two-class data in the pretest are typically distributed. The same thing is revealed in the table above. The posttest significance level for both classes is 0.513 for class A and 0.682 for class B. With the presentation of the results of the significance data, both show a significance value of more than 0.050, which means that H0 is accepted. The two-group data in the pretest were usually distributed based on the test results.

The results of the normality test analysis using the Shapiro-Wilk test conclude that the data is usually distributed. The next step is to carry out an Independent Sample t-test to determine whether there are differences in learning outcomes between students who use the QL model and students who use the DL model. The results of the data difference test in the research will be displayed in Table 5.

**Table 5.** Independent sample T-Test.

| Variable                  | t      | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Decision    |
|---------------------------|--------|----|-----------------|-----------------|-----------------------|-------------|
| pretest learning results  | -2.334 | 58 | 0.023           | -5.333          | 2.285                 | Significant |
| posttest learning results | 6.303  | 58 | 0.000           | 10.700          | 1.698                 | Significant |

Based on the output in Table 5, the Sig value is obtained. (2-tailed) on the pretest learning outcomes of  $0.023 < 0.050$ , there is a significant difference in the average student learning outcomes between the QL and DL models. The same thing applies to the posttest learning results of  $0.000 < 0.050$ , so there is a significant difference in the average student learning outcomes between the QL and DL models.

**Table 6.** Paired sample T-Test.

| Class  |                            | t       | df | Sig. (2 tailed) | Decision |
|--------|----------------------------|---------|----|-----------------|----------|
| Pair 1 | Pre-test 7A – Post-test 7A | -32.439 | 29 | 0.000           | Accepted |
| Pair 2 | Pretest 7B – Post-test 7B  | -15.94  | 29 | 0.000           | Accepted |

Based on the output of pair 1 in Table 6, the Sig value is obtained. (2 tailed) is  $0.000 < 0.005$ , so there is a difference in the average student learning outcomes for the Pretest class A class and the Posttest class A with the QL model. Based on the output of pair 2, the Sig value is obtained. (2-tailed) is  $0.000 < 0.005$ , so there is a difference in the average learning outcomes for the Pretest class B class and the Posttest class B with the DL model.

**Table 7.** N-Gain test.

|        | Class | Experiment | Mean | Gain (%) | Category |                |
|--------|-------|------------|------|----------|----------|----------------|
| N-gain | 7A    | 30         | QL   | 0.774    | 77       | Effective      |
|        | 7B    | 30         | DL   | 0.538    | 53       | Less effective |

Based on the average N-Gain value from Table 7. for class 7A, it is 0.774, so it is based on the interpretation category of the effectiveness of the N-Gain value. If the result is more significant than 0.7, then it can be concluded that using the QL model in class 7A is high. Judging from the gain percent for class 7A, it is 77 %, so it is based on the N-Gain effectiveness interpretation category. If the result is greater than 76, then using the QL model in class 7A effectively improves students' cognitive learning outcomes. Furthermore, the average N-gain value for class 7B is 0.538; so based on the interpretation category of the effectiveness of the N-gain value, if the result is more significant than 0.300 and smaller than 0.700, it can be concluded that the use of the DL method in class 7B is moderate. Judging from the gain percent for class 7B, it is 53%, so it is based on the N-Gain effectiveness interpretation category. If the results are between 40-55, using the DL model in class 7B is less effective in improving students' cognitive learning outcomes.

### Discussion

QL emphasizes student activity, direct experience, and creating a positive, student-centered learning environment. In learning, QL can help students improve learning outcomes. Because this learning model aims to create a learning environment that stimulates the brain and increases student motivation and engagement (Nahar et al., 2022; Said & Ridwan, 2023). The QL model is designed to effectively stimulate various parts of the student's brain. By providing a dynamic and varied learning environment, QL helps overcome the boredom and feelings of helplessness that can often arise in the classroom. By adapting learning approaches to meet students' individual needs, this model can help improve their participation and academic performance (Saryadi & Sulisworo, 2023; Sulfah et al., 2022).

As with Al-Quran Hadith material as a guide to life, during the learning process, many students still cannot read the Koran, which can hinder the learning process. Therefore, with this model, the teacher helps solve this problem by creating groups, each consisting of students who can and are fluent in reading the Koran and some students who cannot yet read the Koran. So that students who cannot read can take part in learning comfortably without feeling stressed because they cannot participate in



learning (Dude, 2020; Munawarah et al., 2020). Once groups are created, the teacher learns using visualization, physical movement, and music. This model helps create a more exciting and varied environment, which allows students' brains to be more involved and receive information better. In each lesson, the teacher provides an assessment to measure student understanding. By utilizing techniques such as recognition, challenges, and meaningful goals, this model helps students find relevance in their learning and feel more motivated to learn (Ainissyifa et al., 2023).

Several supporting factors in the QL process toward student learning outcomes in class 7A include the teacher fully understanding this learning model and knowing the right way to apply it to students. Where the teacher is ready with designs and plans that will be conveyed to students so that learning can run smoothly and in a structured manner. There are no students who are sleepy or bored because learning is fun. The teacher provides supervision and appropriate instructions so that the child's experience is as expected (Hakim et al., 2022; Hasanah et al., 2022). The facilities and infrastructure used are adequate, and the environmental situation supports the use of this learning model. So, this model can encourage students to learn actively (Kaat et al., 2024). With intense interaction between students and subject matter, students tend to be more involved and participate actively in the learning process, as well as the use of various creative techniques and mental stimulation; this learning model can create a learning environment that stimulates and supports student activity (Pristiana et al., 2024). This allows students to take an active role in learning, improves their understanding of the subject matter, and facilitates the achievement of better overall learning outcomes (Khozaei et al., 2022; Munawarah et al., 2020).

DL is an approach that emphasizes the active role of students in understanding certain concepts and principles by discovering them for themselves. This method places students at the center of learning, where they can raise questions, formulate hypotheses, explore material, and make their own decisions. The DL model has significant urgency in improving student learning outcomes by placing students as active agents in the learning process (Aisy et al., 2022; Mulyanto et al., 2020). They are invited to explore, discover, and understand concepts independently. In addition, students are not only provided with information, but they also experience the process of problem-solving and discovery themselves. So, in the learning process, students are free to explore the learning material they do not yet understand (Noverianto et al., 2024). So, after providing lesson material, the teacher's role is to monitor the students' development. This allows them to understand concepts more deeply, as they must engage critical and analytical thinking skills to find solutions (Lubis, 2020).

Several supporting factors in the DL process on student learning outcomes in class 7B, namely, a classroom environment that is comfortable, interactive, and stimulates students' learning needs. Classrooms equipped with various learning resources, such as books, teaching aids, technology, and group work areas, can stimulate student interest and involvement in the process of exploration and discovery. Teachers can use interactive software technology, learning applications, videos, and other digital resources to enrich students' learning experiences and facilitate a more profound exploration of concepts (Serevina & Luthfi, 2021; Yudho et al., 2023). Teachers play an important role as facilitators in Discovery Learning. They must be able to guide students in the discovery process, provide appropriate direction, stimulate questions, and provide support when needed (Manao et al., 2024). Teachers also need to provide constructive feedback to help students improve their understanding. Clear and

constructive feedback is an integral part of the learning process. In-depth feedback on student understanding, providing positive reinforcement, as well as providing suggestions for improvement or further development (Sari & Abdulrahman, 2019; Saryadi & Sulisworo, 2023).

Obstacles faced by teachers in the learning process in classes 7A and 7B when implementing the QL and DL models in classroom learning. The students are the inhibiting factor in implementing the learning process in class 7A using the DL model. Many students still need to be more obedient to the established school rules; many students need to arrive on time, hindering learning that should have started (Rahayu & Mustika, 2021; Rahmawati & Munika, 2021). Moreover, in one class of 30 students, two students need help to follow the lesson. So that learning cannot be accepted by all students. In the learning process in the classroom, teachers are still unable to control the class because many students talk to themselves during learning, causing the class to become noisy and uncontrolled (Haryono et al., 2024). Teachers still need help regarding the time required when learning takes place. When the learning hour ends, the teacher must complete all the points that should be conveyed. This is where teachers must think about minimizing time and achieving learning objectives (Mulbar et al., 2021; Mulyanto et al., 2020).

Meanwhile, for class 7B with the QL method, the inhibiting factors are almost the same as class 7A, but there are several differences. Namely, there are still many students who cannot read the Koran. Of the 30 students, five students cannot read the Koran. So, it hampers the learning process on Al-Quran Hadith material as a guide to life. Apart from that, some students still need to be on time to enter class, thus hampering learning that should have started (Asradi & Sarman, 2022). In one class of 30 students in class 7B, one student had permission because of dispensation to take part in the Olympics. Teachers have not been able to condition the class so that not all children want to participate in learning using this learning model. Several points still cannot be implemented in implementing these two models because the school needs to provide tools and materials. Inappropriate teacher planning can also make the use of this learning model fail. An evaluation system that does not follow the characteristics of QL and DL can become an obstacle in assessing student learning outcomes (Korres, 2019; Lubis, 2020).

## CONCLUSION

**Fundamental Findings:** The research results show a significant increase in student learning outcomes in the Islamic Education Al-Quran and Sunnah as a Guide to Life material. The significant increase in student cognitive learning outcomes is proven by the increase in class 7A learning outcomes using the QL model, which achieved an increase of 77%. Meanwhile, learning using the DL learning model in class 7B experienced a relatively low increase in student cognitive learning outcomes of 54%. Each model has advantages and disadvantages, so teachers need to look at the advantages and disadvantages of the model before using it in learning. These results were obtained using sample data collection techniques in the form of pretest and posttest. **Implication:** Applying the QL learning model is practical, while applying the DL learning model could be more practical. The results of this research confirm previous research regarding efforts to improve student learning outcomes by using the QL learning model and strengthening the QL model as a relevant model for improving cognitive learning outcomes, especially in Islamic Religious Education material on the

Al-Quran and Sunnah as a Guide to Life. **Limitation:** Implementing a learning model with a short research duration may need to be revised to observe the long-term impact of using a particular learning model. The effectiveness of the learning model is influenced by various factors, including student characteristics, learning context, and the quality of implementation by the teacher. Not all students respond well to learning models and individual learning preferences, which can influence the results. **Future Research:** Further research or further research still needs to be carried out by optimizing innovative learning models to influence positive student learning outcomes. Moreover, using school resources involves other variables, especially in Islamic Education learning.

## REFERENCES

- Ainissyifa, H., Nasrullah, Y. M., Fatonah, N., & Ningsih, M. A. (2023). Application of quantum teaching method to increase student motivation in islamic religious education subjects. *IJER (Indonesian Journal of Educational Research)*, 8(1), 1-10. <https://doi.org/10.30631/ijer.v8i1.237>
- Aisy, R. R., Wulandari, R., & Kusnaningsih, K. (2022). Implementation of dl methods to increase activity and learning results in banyuajuh 2 elementary school. *Maktab: Jurnal Pendidikan Dan Teknologi*, 1(3), 3-15.
- Amrianto, A., & Lufri, L. (2019). Effect of Example non example method implementation in scientific approach and discovery learning model on VII grade students' cognitive competence in learning natural science. *Journal of Physics: Conference Series*, 1387(1), 1-7. <https://doi.org/10.1088/1742-6596/1387/1/012049>
- Arga, H. N., Nugraha, A. C., Sudira, P., & Daryono, R. W. (2022). The effectiveness of blended learning combined the team game tournament on the learning outcomes of electrical engineering students. *JPI (Jurnal Pendidikan Indonesia)*, 11(2), 1-13. <https://doi.org/10.23887/jpiundiksha.v11i2.41572>
- Asradi, A., & Sarman, F. (2022). Effectiveness of discovery learning Approaches integrated with task group guidance to increase student confidence in guidance and counseling. *Bulletin of Social Studies and Community Development*, 1(1), 1-9.
- Atiyah, U., Miarsyah, M., & Sigit, D. V. (2020). The effect of using e-learning based guided discovery learning model based on self-efficacy towards student learning outcomes in biology class in reproductive system subject in high school. *International Journal for Educational and Vocational Studies*, 2(9), 9-16. <https://doi.org/10.29103/ijevs.v2i9.2732>
- Daryono, R. W., Hidayat, N., Nurtanto, M., & Fu'adi, A. (2024). The development of a competency framework for architectural engineering graduates: Perspectives by the construction industry in Indonesia. *Journal of Technology and Science Education*, 14(2), 1-10. <https://doi.org/10.3926/jotse.1986>
- Daryono, R. W., Ramadhan, M. A., Kholifah, N., Isnantyo, F. D., & Nurtanto, M. (2023). An empirical study to evaluate the student competency of vocational education. *International Journal of Evaluation and Research in Education (IJERE)*, 12(2), 21-32. <https://doi.org/10.11591/ijere.v12i2.22805>
- Dude, S. (2020). Contextual teaching and learning model with inquiry method in student learning outcomes. *JournalNX*, 6(11), 107-112.
- Ellizar, E., Putri, S. D., Azhar, M., & Hardeli, H. (2019). Developing a discovery learning module on chemical equilibrium to improve critical thinking skills of senior high school students. *Journal of Physics: Conference Series*, 1185(1), 1-7. <https://doi.org/10.1088/1742-6596/1185/1/012145>
- Hakim, S. N., Kumaidi, K., & Rahman, A. (2022). QL Model to increase the internalization of islamic values in busthanul athfal. *Atlantis Press SARL*, 676(5), 337-346. <https://doi.org/10.2991/assehr.k.220708.042>

- Haryono, H., Nofirman, N., Rienovita, E., Nurtamam, M. E., Suprpto, Y., Rahman, A., Kurniawan, A., & Santosa, T. A. (2024). The effect discovery learning model students science literacy in indonesia. *International Journal of Teaching and Learning*, 2(1), 1-19.
- Hasanah, M., Arafat, Y., Barni, M., & Raya, A. T. (2022). Learning akidah in the quran perspective: a model in implementing learning. *Journal of Positive School Psychology*, 7540-7547.
- Heru, N., Wagiran, W., & Daryono, R. W. (2021). Chassis maintenance and vehicle power transfer learning: The effectiveness of STEM on students' critical thinking ability. *Journal of Education Technology*, 5(4), 19-32. <https://doi.org/10.23887/jet.v5i4.40534>
- Kaat, P. P., Uloli, R., & Odja, A. H. (2024). The influence of discovery learning model assisted with comics media on students' scientific literacy in heat matter and its transfer. *ORBITA: Jurnal Pendidikan Dan Ilmu Fisika*, 10(1), 86-95. <https://doi.org/10.31764/orbita.v10i1.20674>
- Karimah, R. (2023). Implementation of the kauny quantum memory method in fostering the ability to memorize the qur'an at the al kautsar cianjur islamic boarding school. *As-Sabiqun*, 5(2), 574-591. <https://doi.org/10.36088/assabiqun.v5i2.3058>
- Khozaei, S. A., Zare, N. V., Moneghi, H. K., Sadeghi, T., & Taraghdar, M. M. (2022). Effects of quantum-learning and conventional teaching methods on learning achievement, motivation to learn, and retention among nursing students during critical care nursing education. *Smart Learning Environments*, 9(1), 18-29. <https://doi.org/10.1186/s40561-022-00198-7>
- Korres, K. (2019). Multivariable analysis methods on identifying factors and groups of students in the environment of the discovery learning/constructivistic approach using cognitive tools. *European Journal of Engineering and Technology Research*, 6(1), 7-12. <https://doi.org/10.24018/ejeng.2019.0.CIE.1289>
- Lastasa, M., & Habaridota, B. B. (2020). The implementation tandur quantum teaching learning model to improve social learning achievement. *International Journal of Elementary Education*, 4(2), 23-31. <https://doi.org/10.23887/ijee.v4i2.26593>
- Lubis, S. (2020). Penerapan discovery learning dalam mewujudkan pembelajaran efektif. *Andragogi: Jurnal Diklat Teknis Pendidikan Dan Keagamaan*, 8(1), 1-19. <https://doi.org/10.36052/andragogi.v8i1.136>
- Manao, S., Manik, S., Manurung, L. W., & Sinambela, E. (2024). The implementation of project-based learning and discovery learning models on students' writing narrative of SMA swabina karya medan. *Didaktika: Jurnal Kependidikan*, 13(1), 31-42. <https://doi.org/10.58230/27454312.570>
- Muflihah, Normawati, E., & Widiyoawati, I. I. (2020). The effect of integration of islamic values in quantum learning on student learning outcomes and attitudes. *Atlantis Press SARL*, 432(4), 121-123. <https://doi.org/10.2991/assehr.k.200417.026>
- Mulbar, U., Alimuddin, A., Rahmadani, R., Adnan, A., & Hasanah, R. (2021). The influence of discovery learning with scientific approach on students' creative thinking ability. *Journal of Physics: Conference Series*, 1899(1), 1-7. <https://doi.org/10.1088/1742-6596/1899/1/012134>
- Mulyanto, B. S., Sadono, T., & Koeswanti, H. D. (2020). Evaluation of critical thinking ability with discovery lerning using blended learning approach in primary school. *Journal of Research and Educational Research Evaluation*, 9(2), 42-49. <https://doi.org/10.15294/jere.v9i2.46135>
- Munawarah, M., Haniah, H., & Abunawas, K. (2020). The effectiveness of quantum learning to increase motivation and mastery of arabic vocabulary of learners. *An Nabighoh*, 22(2), 1-9. <https://doi.org/10.32332/an-nabighoh.v22i02.2006>
- Nahar, S., Suhendri, S., Zailani, Z., & Hardivizon, H. (2022). Improving students' collaboration thinking skill under the implementation of the quantum teaching model. *International Journal of Instruction*, 15(3), 451-464. <http://dx.doi.org/10.29333/iji.2022.15325a>

- Noverianto, B., Agoestanto, A., Dewi, N. R., & Mariani, S. (2024). Meta analysis: The effect of the geogebra applet-assisted discovery learning model on students' mathematical problem solving ability in geometry material. *Mathline: Jurnal Matematika Dan Pendidikan Matematika*, 9(2), 1-11. <https://doi.org/10.31943/mathline.v9i2.604>
- Novita, R. D., Aminatun, T., & Daryono, R. W. (2022). E-Modules Through Flipped Classroom and PBL Models on Environmental Pollution Material to Increase Problem-Solving Ability. *Journal of Education Technology*, 6(4), Article 4. <https://doi.org/10.23887/jet.v6i4.51656>
- Nuraini, L., Subali, B., Heru, N., & Daryono, R. W. (2022). Low Competency Achievement in the Covid-19 Pandemic Era: Analysis of Application of Biology Learning Model. *JPI (Jurnal Pendidikan Indonesia)*, 11(4), Article 4. <https://doi.org/10.23887/jpiundiksha.v11i4.49129>
- Prasetyo, A. D., & Abduh, M. (2021). Peningkatan keaktifan belajar siswa melalui model discovery learning di sekolah dasar. *Jurnal Basicedu*, 5(4), 11-20. <https://doi.org/10.31004/basicedu.v5i4.991>
- Pristiana, C. P., Safitri, H. H., & Rahmawan, S. (2024). Studi literatur: Implementasi model pembelajaran discovery learning terhadap peningkatan hasil belajar peserta didik materi kimia SMA. *Arfak Chem: Chemistry Education Journal*, 7(1), 12-21. <https://doi.org/10.30862/acej.v7i1.589>
- Rahayu, R., & Mustika, I. (2021). Application of dl method learning to writing procedure text in vocational school students 1 soreang. *JLER (Journal of Language Education Research)*, 4(2), 1-11. <https://doi.org/10.22460/jler.v4i2.6441>
- Rahmawati, R. D., & Munika, R. (2021). Application of discovery learning model in the ta'lim muta'alim book study. *SCHOOLAR: Social and Literature Study in Education*, 1(1), 31-40.
- Rizaldi, W., & Mawardi, M. (2021). Improving Critical thinking skills and learning outcomes of 4th grade students through discovery learning model. *Journal of Education, Teaching and Learning*, 6(1), 13-17. <https://dx.doi.org/10.26737/jetl.v6i1.2348>
- Rosantono, I. G., Wijanarka, B. S., Daryono, R. W., & Nurtanto, M. (2021). Analysis of the Influencing Factor of Vocational Education Students Career Decisions. *Jurnal Pendidikan Dan Pengajaran*, 54(3), 111-119. <https://doi.org/10.23887/jpp.v54i3.37343>
- Safitri, N., Oetomo, D., & Santosa, S. (2020). The effect of discovery learning with the scaffolding method on science literacy ability and student motivation in terms of academic ability. *Proceeding Biology Education Conference: Biology, Science, Enviromental, and Learning*, 17(1), 23-37.
- Said, D. M., & Ridwan, M. (2023). Efforts to increase student interest in learning in islamic religious education subjects through the quantum teaching learning model. *AIQU: Journal Multidiscipliner of Science*, 1(1), 217-222. <http://dx.doi.org/10.30868/ei.v11i01.2251>
- Saifurrahman, M., Sudira, P., & Daryono, R. W. (2021). The determinant factor of the principal leadership solutions in facing the 21st-century learning. *Jurnal Pendidikan Dan Pengajaran*, 54(2), 311-323. <https://doi.org/10.23887/jpp.v54i2.34102>
- Sari, M., & Abdulrahman, T. R. (2019). Discovery learning (DL) strategy on students reading comprehension in report text. *Lingua*, 15(1), 356-362. <https://doi.org/10.34005/lingua.v15i2.356>
- Saryadi, W., & Sulisworo, D. (2023). Development of e-module based on the discovery learning to improve the student creative thinking skills. *JTAM (Jurnal Teori Dan Aplikasi Matematika)*, 7(1), 11-22. <https://doi.org/10.31764/jtam.v7i1.10185>
- Satriani, Razaq, Y., Nurhidayanti, & Muzkiyah, N. (2022). The impact of using dsicoverly learning on EFL students' writing skill. *ETDC: Indonesian Journal of Research and Educational Review*, 1(3), 393-402. <https://doi.org/10.51574/ijrer.v1i3.393>
- Serevina, V., & Luthfi, K. (2021). Development of discovery learning-based on online learning tools on momentum and impulse. *Journal of Physics: Conference Series*, 1876(1), 1-6. <https://doi.org/10.1088/1742-6596/1876/1/012076>

- Setyadi, M. R. A., Triyono, M. B., & Daryono, R. W. (2021). The influence of industrial work practices and workshop infrastructure facilities on work readiness of students. *Journal of Physics: Conference Series*, 1833(1), 1-7. <https://doi.org/10.1088/1742-6596/1833/1/012029>
- Sulfah, S., Arismundar, A., & Samad, S. (2022). The validity and effectiveness of the islamic education learning model based on quantum teaching in improving students' social skills. *Asian Journal of Applied Sciences*, 10(2), 1-10. <https://doi.org/10.24203/ajas.v10i2.6895>
- Supriyanto, S., Munadi, S., Daryono, R. W., Tuah, Y. A. E., Nurtanto, M., & Arifah, S. (2022). The influence of internship experience and work motivation on work readiness in vocational students: PLS-SEM analysis. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 5(1), 200-212. <https://doi.org/10.23917/ijolae.v5i1.20033>
- Yudho, F. H. P., Dermawan, D. F., Julianti, R. R., Iqbal, R., Mahardhika, D. B., Dimiyati, A., Nugroho, S., & Resita, C. (2023). The effect of motivation on increasing students' cognitive ability through guided discovery learning. *European Journal of Education and Pedagogy*, 4(1), 559-565. <https://doi.org/10.24018/ejedu.2023.4.1.559>

---

**\*Ifa Lidia Wati (Corresponding Author)**

Department of Islamic Religious Education,  
Ponorogo State Islamic Institute,  
Jl. Pramuka 156, Ronowijayan, Siman, Ponorogo, East Java, 63471, Indonesia  
Email: [ifa.lidia@iainponorogo.ac.id](mailto:ifa.lidia@iainponorogo.ac.id)

**Rihab Wit Daryono**

Department of Islamic Religious Education,  
Ponorogo State Islamic Institute,  
Jl. Pramuka 156, Ronowijayan, Siman, Ponorogo, East Java, 63471, Indonesia  
Email: [rihabwit.daryono@iainponorogo.ac.id](mailto:rihabwit.daryono@iainponorogo.ac.id)

---