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Guided Inquiry vs. Conventional Methods: Shaping Learning Outcomes in Islamic Religious Education

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Abstract

This study investigates the effectiveness of the guided inquiry learning (GIL) model in enhancing learning outcomes and its impact on student performance in Islamic religious education. While previous research has explored the application of the GIL model across various subjects, most have focused on specific competency areas rather than assessing its effectiveness. Adopting a quasi-experimental design, this study targeted tenth-grade students during the 2023/2024 academic year, with a sample of 71 students selected through multi-stage sampling. Data collection involved student test scores, which were analyzed using one-way ANOVA. The results indicate that the GIL model is effective in improving learning outcomes and shows a significant influence on student performance in Islamic Religious Education.

Keywords: Conventional Learning, Guided Inquiry Learning, Islamic Religious Education, Learning Outcomes.

Introduction

Learning competency is a multifaceted capability that students possess, encompassing the mastery of understanding, capabilities, attitudes, and values, which are apparent in their thoughts and actions, as described by Hartig and Leutner in their work (1). One form of managing student diversity is by applying learning strategies that accommodate the learning needs of each student (2). In addition, learning using the current curriculum provides freedom for educators to design learning to suit students' learning needs (3). This is of course beneficial for students because differences in learning processes, intelligence and interests are not a problem for students but are unique things that can be used to complement each other (4). Therefore, educators are required to understand the learning approach that will be used, choose appropriate learning strategies, learning methods and techniques that are appropriate to the topic and discussion (5). This situation naturally influences its use in the pedagogical process, where the circumstances and conditions encountered will affect students' mastery and learning outcomes (6).The learning approach can be understood as our perspective or starting point in the learning process. It reflects a broad, general view of how the process occurs, serving to accommodate, inspire, reinforce, and underpin specific learning methods within a particular theoretical framework (7). In his article, Roy Killen states that there are two methods of learning: one that focuses on the teacher (teacher-centered) and another that centers on the student (student-centered) (8). The former minimizes the use of direct learning strategies, deductive methods, or expository techniques (9), while the latter maximizes the use of discovery, inquiry, and inductive learning strategies. Implementing the inquiry method is the right way for students. Guided inquiry is a teaching approach aimed at helping students understands concepts and the connections between them. In this method, the teacher presents examples, assists students in identifying patterns within these examples, and concludes the lesson once the students can articulate the concepts taught (10). The guided inquiry learning is a form of inquiry-based instructions where the teacher guides students, helping them explore and analyze critical and scientifically argumentative topics through specific steps (11). These steps include orientation, formulating a problem, developing a hypothesis, and drawing conclusions (12). Directed inquiry, as described by kindsvatter in his work, refers to a

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type of inquiry where the teacher plays a significant role. Various models of Inquiry-Based Science Education (IBSE) have been created that focus on enhancing student engagement; one of which is the guided inquiry learning (GIL) (13). The model encompasses critical thinking and reasoning, skill enhancement, scientific methods, and teamwork and collaboration. In the GIL, students work together and participate actively in discussions to identify the best solutions to the problems presented by their teacher (14). The design showcases a scientific checklist that cycles through various stages in the learning process and highlights the students' independence following inquiry sessions, as described by Sokołowska in his study (15). The GIL enables students to explore concepts by following a sequence of scientific steps, covering identifying problems, forming hypotheses, doing experiments, discussing findings, drawing conclusions, and engaging in peer communication. This appears to be a crucial method for teaching students from diverse academic backgrounds in the classroom (16). This method enables students to guide the exploration process, with the teacher's duty primarily being to pose questions. Although the teacher may have their own ideas about the discussion's outcomes, students retain the chance to draw conclusions from their own scientific knowledge (17). In inquiry learning, as Sanjaya explains, students learn better when they are active, but their activities require guidance (18). Additionally, in his work, Suparno claims that the guided inquiry learning benefits teachers by enabling them to direct students through activities with the help of initial questions and leading discussions (19). In this model, teachers play an active role in identifying problems and determining the steps needed to solve them (20). Using the inquiry model in teaching helps students focus on guidance and instructions from the teacher, which aids in their understanding of lesson concepts. This approach ensures that students are not confused and are less likely to fail, as the teacher is actively involved throughout the process. Meanwhile, Islamic Religious Education subjects in schools are taught conventionally namely lectures like a cleric in carrying out religious studies. Students only listen and tend to be passive and boring. Thus, implementing guided inquiry learning models in Islamic Religious Education is seen as a more effective approach, encouraging students to actively engage, think creatively, and develop innovative ideas, particularly in activities that involve reasoning and critical thinking. In addition, students will not get bored because they play a more active role in learning with teacher guidance. The main principles in Islamic Religious Education include monotheism, noble morals, knowledge and social life that teaches the values of brotherhood, mutual assistance, and concern for society. In the era of globalization, Islamic education is faced with a number of challenges. One of them is integrating Islamic values with universal values such as human rights, pluralism, and democracy. For this reason, simply delivering dogmatic lectures is not sufficient. It is essential to implement a guided inquiry learning model that encourages students to actively explore and discover, and think critically and logically, under the teacher's guidance. As a result, students can develop their skills and mentality. Several prior studies have highlighted improvements in student performance through the use of the guided inquiry learning. For example, implementing this model enhanced students' science process skills (SPS) and cognitive achievements, and positively impacted the relationship between the two (21). In addition, guided inquiry learning impacted the comprehension and discovery of notions among tenth-grade multimedia students of vocational school (22). Using the guided inquiry model with third-grade students of elementary school can also enhance both the learning process and students' achievements (23). The same result was expressed in a study involving second-grade elementary students, showing that implementing guided inquiry learning enhanced their learning outcomes, including both group performance and written test results (24). Several studies also highlight the effectiveness of the inquiry learning method in Islamic Religious Education. First, implementing the inquiry learning method positively impacts students' learning activities by encouraging them to actively engage in discovering knowledge on their own. It provides students with meaningful, hands-on learning experiences (25). Additionally, students are trained to solve problems and make decisions as they work through challenges. They are also held accountable for their own learning process. Teachers, in turn, must adapt to the activities of the students,

ensuring that their involvement enhances rather than disrupts the learning process. Overall, the inquiry method offers students valuable real-life learning experiences by requiring them to take an active role in knowledge discovery through problem-solving. Second, using the inquiry method helps students become more active, innovative, independent, critical, and confident in expressing themselves. Students, in general, gain more self-assurance when solving problems (26). Clearly, the inquiry method fosters confidence, activeness, creativity, critical thinking, and independence in addressing challenges. Although the inquiry method has been widely explored in the context of Islamic Religious Education, as mentioned earlier, few studies have focused specifically on guided inquiry learning. The guided inquiry approach offers students the opportunity to enhance their reasoning skills and become accustomed to tackling problems. This process requires guidance and direction from teachers to ensure that the inquiry method does not allow students to think or reason without appropriate support. In reality, there are still many teachers who have not found suitable learning methods or media due to limited facilities in schools, which leads to issues like low student learning outcomes. According to observations conducted at SMAN 10 Malang, it appears that students are still generally passive during the learning process. Students also struggle to comprehend the material presented in Islamic Religious Education lessons. This is evident from some students who engage in play during learning activities. Furthermore, student test scores remain under the cut score (KKM). The cut score set is 60, where students are declared to have completed their studies if they can achieve a score of 60 or more. Building on prior research and findings from the preliminary study, it is considered essential to conduct the study in the tenth-grade Islamic Religious Education at SMAN 10 Malang. This study aims to assess the impact of implementing the guided inquiry learning model on student academic performance in Islamic Religious Education.

Methodology

This study was carried out at SMAN 10 Malang, focusing on tenth-grade students studying Islamic Religious Education. The sampling method employed was saturated sampling, as the entire population was included in the sample. Specifically, 36 students from class X A were designated as the experimental group, while 35 students from class X B served as the control group. The experimental group received instruction using the guided inquiry learning. In total, 71 students participated in this research. This quasi-experimental study utilized a non-equivalent control group design. The sample comprised two classes: class XA, which implemented the guided inquiry learning, and class XB, which followed the conventional method. The research design is outlined in Table 1.

Table 1: Research Design

R1	O1	X	O2
R2	O3	-	O4

Information: R1: experimental group, R2: control group, O1: pretest (experimental), O3: pretest (control), O2: posttest (experimental), O4: posttest (control), X: the guided inquiry model-: the conventional method. This study centers on learning achievement in the cognitive domain, specifically targeting aspects of remembering—such as meaningful learning and problem-solving—and understanding, which includes skills like classifying and comparing. The data collection of this study used tools in the cognitive domain through objective tests consisting of 25 questions with 4 answer choices with the consideration that multiple-choice test questions can be used to measure more complex learning outcomes and are related to aspects of memory, understanding, application, analysis, synthesis, and evaluation. The data, consisting of students' pretest and posttest scores, were assessed by figuring out the mean, standard deviation, conducting normality and homogeneity tests, and performing hypothesis testing. The prerequisite tests included a normality check using the Kolmogorov-Smirnov and Shapiro-Wilk formulas, along with a homogeneity test conducted using the Levene test. To examine whether there were significant differences between the pretest and posttest scores of the participants, the data were analyzed using the paired sample t-test. All parametric tests carried out in this study have a significant value of 5%.

Results and Discussion

The research findings were derived from the test scores from the experimental and control groups at SMAN 10 Malang. A 25-question multiple-choice test was used to collect the data.

Calculating the Mean and Standard Deviation

The calculation results provide the mean, standard deviation, and variance for both classes, as presented in Table 2 below.

Table 2: Results of Mean and Standard Deviation

Information	Experimental Class		Control Class	
	Pretest	Posttest	Pretest	Posttest
Mean	38,67	75,67	34,50	58,33
Standard Deviation	9,371	12,369	8,025	13,476
Variance	87,816	152,989	64,397	181,609

As Table 2 shows, the mean score for the experimental class in the posttest exceeds that of the control class. Additionally, the standard deviation for both pretest and posttest scores in each class is smaller than the mean, indicating no data deviation. The pretest scores for both groups were nearly identical, with the experimental class averaging 38.67 and the control class 34.50. Despite the experimental class scoring slightly higher, it can be concluded that both classes were initially homogeneous. However, after implementing different treatments during the learning process, the results showed a major improvement. The experimental class achieved an average posttest score of 75.67, compared to 58.33 in the control class. These findings highlight that the learning outcomes in Islamic Religious Education for the experimental class improved significantly following the application of the guided inquiry learning.

Normality Test

In this study, the Kolmogorov-Smirnov test was used to check for data normality, with the assistance of the SPSS version 24 software. The outcomes of the normality test are as follows.

Table 3: Normality Test

Class	Test of Normality					
	Kolmogorov-Smirnov			Shapiro- Wilk		
	Statistic	df	Sig	Statistic	df	Sig
Pretest (Experimental)	,157	35	,059	,950	35	,165
Posttest (Experimental)	,141	35	,130	,937	35	,078
Pretest (Control)	,146	34	,103	,932	34	,065
Posttest (Control)	,148	34	,092	,935	34	,067

The data presented in Table 3 reveals that the significance value for the experimental group's posttest is 0.078, while the control group's posttest has a significance value of 0.067. Since both values are greater than 0.05, based on the decision-making criteria for the Shapiro-Wilk normality test, it can be concluded that the pretest data for student learning outcomes in both the experimental and control groups follow a normal distribution.

Homogeneity Test

In this study, to find out whether the data was homogeneous, calculations were carried out using SPSS V 24, and the results were obtained as follows.

Table 4: Homogeneity Test Results

Test of Homogeneity of Variance				
	Levene Statistic	df1	df2	Sig.
Based on Mean	,890	1	69	,349
Based on Median	,562	1	69	,447
Based on Median and with adjusted df	,564	1	56,472	,477
Based on trimmed mean	,869	1	69	,366

Referring to Table 4, the significance value (Sig) based on the mean for the learning outcome variable is 0.349. Since the Sig value of 0.349 is greater than 0.05, it can be concluded that the variance in the pretest learning outcome data between the experimental group and the control group is consistent, indicating homogeneity.

Hypothesis Testing

The analysis of pretest and posttest scores reveals that the data satisfies the criteria for conducting a t-test. The results of the hypothesis testing are detailed in Table 5 below.

Table 5: Hypothesis Test Results One Party t-test

Independent Sample Test					
	Levene's Test for Equality of Variances				
	F	**Sig.**	**t**	**df**	**Sig.(2-tailed)**
Equal variances assumed	,890	,349	2,196	69	,032
Equal variances not assumed			2,196	57,57	,032

The results of the hypothesis test, as shown in Table 5, reveal a significance value below α (0.032 < 0.05). This confirms that Ha is accepted, demonstrating that the guided inquiry learning significantly impacts the academic achievement of tenth-grade students in Islamic Religious Education at SMAN 10 Malang. The formula used to measure student improvement is as follows:

$$LO = \frac{[X\ Exp\ Postest - X\ Control\ Posttest]}{X\ control\ posttest} x\ 100\%$$

$$LO = \frac{[75,67 - 58,33]}{58,33} x\ 100\%$$

$$= 29,72\%$$

Based on the calculation above, the application of the guided inquiry learning has led to a 29.72% improvement in the learning achievement of the students.

Simple Regression Test

The regression test is conducted to identify the relationship between two or more variables, focusing on how the independent variables influence the dependent variable. The regression test was conducted using the SPSS V 24 software. The test outcomes are presented in Table 6 below:

Table 6: Simple Regression Test Results

Co efficientsa					
Unstandardized Coefficients			**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	22,484	4,428		5,191	,000
Regression	,656	,067	,875	10,171	,000

As shown in Table 6 and supported by observations, student performance in Islamic Religious Education has clearly improved. The experimental group exceeded the control group in terms of average scores. The hypothesis test (Ha) was accepted, as the significance value was below the α level (0.032 < 0.05). The data analysis reveals that the guided inquiry learning model has a significant positive effect on the achievement of tenth-grade students at SMAN 10 Malang, enhancing their learning outcomes by 29.72%. Therefore, it can be concluded that the guided inquiry learning model developed in this study is not only feasible and practical but also effective in improving students' understanding of concepts and their problem-solving skills in Islamic Religious Education.

Discussion

Within the design of this study, the researcher employed two different groups and provided different treatments. Different treatment in this context refers to employing distinct learning models in the two research groups: the

experimental class utilized the guided inquiry learning model, while the control class used the conventional learning model.

How Guided Inquiry and Conventional Learning Affect Student Achievement Differently

According to the research findings, the average posttest score for the experimental class was 65.67, compared to 58.33 for the control class. This resulted in a 12.58% improvement in student achievement. This proves that the guided inquiry learning is quite effective in enhancing the students' Islamic religious education learning outcomes at SMAN 10 Malang. This model necessitates that students actively engage in their own learning by participating in various activities such as asking questions, seeking information sources, and conducting investigations. This finding aligns with the results of a study, which reported that students in the experimental (inquiry) class outperformed those in the control group. The enhanced performance is attributed to the fact that inquiry-based learning helps students address teacher-presented problems more effectively (27). Additionally, another study found that students who were taught using guided inquiry learning, grounded in local culture, performed better than those who received traditional direct instruction. Students and teachers gave very positive responses to the model that incorporates local culture (28). Through inquiry learning, students will acquire diverse experiences that enhance their abilities. Those who are engaged in the instructional process will experience a sense of autonomy as they engage in discussions and solve their problems (29, 30).

The Effect of Guided Inquiry Learning Compared to Conventional Method on Student Achievement

The hypothesis testing results reveal a significance value of 0.032, which is below 0.05, suggesting that the implementation of guided inquiry learning has a meaningful impact on student performance in Islamic Religious Education. This is consistent with previous research, which found that using the inquiry model improves students' academic achievements (31). Another study highlighted that guided inquiry positively affects learning outcomes, with improvements visible not only in academic performance but also in creating a more engaging and active classroom environment (32). Several other studies have also noted that guided inquiry learning leads to better science achievement, as shown by higher test scores among students who used the model compared to those who did not (30-32). The results of this study support the findings of earlier research, which similarly found that guided inquiry learning significantly influenced both learning outcomes and student engagement in secondary school settings (33, 34).

Conclusion

From the analysis of research findings, it can be concluded that guided inquiry learning is quite effective in enhancing student learning outcomes, specifically in the context of Islamic Religious Education for tenth-grade students at SMAN 10 Malang. Future research should concentrate more on the development of guided inquiry, particularly focusing on its role as a comprehensive teaching unit. However, due to time limitations and the students' lack of experience with the guided inquiry's syntax, the researchers were unable to implement it ideally. It is important to remember that increasing mastery of concepts and thinking skills is not formed in a short time but requires a process. For future studies, careful preparation and effective time management before implementing the guided inquiry model will be essential for ensuring a smooth and engaging learning experience.

Abbreviations

Nil.

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Author Contributions

Suyitno Suyitno: Contributed to conceptualization, methodology, data collection and data analysis. Supriyono, Chusnul Chotimah and Dalhari: Contributed to the writing, and assisted with the editing process and provided useful suggestions to improve this research approach. All authors on this article participated in the process of reviewing and approving the final version of the research paper.

Conflict of Interest

The authors stated that they have no conflict of interest.

Ethics Approval

Ethical approval for this research is based on the provision of information from all parties involved in this research activity, ensuring their voluntary participation and understanding of the purpose and procedures of the research. The researcher guarantees the security and confidentiality of information and data that have been submitted by participants, as well as the right to hide the identity of participants in writing and publishing research results (anonymity), the right not to provide answers to certain questions (e.g. sensitive questions), the right to information and data not to be published (off the record), the right to stop the research process at any time, the right to withdraw and withdraw statements that have been submitted (withdraw as participant), and the right to read the research results before they are published.

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