

The Influence of the AI-Quran Integrated Differential Learning Model on the Critical Thinking Ability of Prospective Elementary School Teachers

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Abstract: This research aims to evaluate the influence of the AI-Quran integrated differential learning model on elementary school students' critical thinking abilities. The quasi-experimental method was used involving two groups, namely the experimental group who received intervention using this model, and the control group who took part in conventional learning. Data was collected through a description test that measured various indicators of critical thinking abilities before and after the intervention. The results of the analysis show a significant increase in critical thinking skills in the experimental group, with the integration of the AI-Quran providing additional deep spiritual value and relevance in the learning process. The implication is the importance of integrating spiritual values in the educational curriculum to enrich students' learning experiences holistically.

Keywords: Differential learning model; AI-Qur'an; critical thinking skills; prospective elementary school teacher

Abstrak: Penelitian ini bertujuan untuk mengevaluasi pengaruh model pembelajaran diferensial terintegrasi AI-Quran terhadap kemampuan berpikir kritis siswa sekolah dasar. Metode quasi eksperimen digunakan dengan melibatkan dua kelompok, yaitu kelompok eksperimen yang menerima intervensi menggunakan model tersebut, dan kelompok kontrol yang mengikuti pembelajaran konvensional. Data dikumpulkan melalui tes uraian yang mengukur berbagai indikator kemampuan berpikir kritis sebelum dan setelah intervensi. Hasil analisis menunjukkan peningkatan signifikan dalam kemampuan berpikir kritis pada kelompok eksperimen, dengan integrasi AI-Quran memberikan tambahan nilai spiritual yang mendalam dan relevansi dalam proses pembelajaran. Implikasinya adalah pentingnya integrasi nilai-nilai spiritual dalam kurikulum pendidikan untuk memperkaya pengalaman belajar siswa secara holistik.

Kata kunci: Model pembelajaran diferensial; AI-quran; kemampuan berpikir kritis; calon guru SD

INTRODUCTION

Education as the main foundation in forming an individual's character and intellectual abilities, especially at the basic education level, plays a crucial role in preparing the younger generation. Prospective elementary school teachers have a significant responsibility in enriching students' potential, including honing their critical thinking skills (Alsaleh, 2020; Agusta, 2020; Foo & Foo, 2022). Various learning models have been developed to support an effective learning process, one of which is the Differential Learning Model (Dima et al., 2020). The Differential Learning Model focuses on implementing teaching that is tailored to individual learning needs, allowing teachers to respond to students' various learning styles and levels of understanding in a more personal way. The integration of Al-Quran values in the curriculum not only provides a deep spiritual dimension, but also adds relevance and meaning to the educational process.

The Differential Learning Model encourages teachers to not only identify but also respond to differences in students' learning styles and levels of understanding in a more personal way (Vermana & Zuzano, 2018; Cipta & Dahlan, 2021). This allows for a more precise and effective approach in delivering learning material, so that each student can develop their potential optimally (Mardiani, 2018). The integration of Al-Quran values in the curriculum not only adds a deep spiritual dimension, but also provides deeper relevance to the student learning experience (Khusna & Sari, 2018; Saputra & Hakim, 2024). By considering this spiritual aspect, a differential approach integrated with the Al-Quran can create a supportive learning environment for prospective elementary school teachers in developing students' critical thinking skills holistically (Rusydziana, 2024; Astuti, 2022).

Critical thinking skills are the main focus in contemporary education. Teachers who are able to develop critical thinking skills in students can help them face complex challenges in the era of globalization. In this context, using the Al-Quran as a teaching source not only strengthens students' spiritual aspects, but also has the potential to increase their ability to think critically. Critical thinking skills are key in preparing students to face the complexities of the modern world (Suranti & Alimuddin, 2024; Ibrahim, & Suranti, 2024). Teachers who can develop critical thinking skills in students not only help them explore and analyze various concepts in depth, but also prepare them to face the changes and challenges that continue to develop in the era of globalization (Bahtiar et al., 2023). Utilizing the Al-Quran as a teaching source can strengthen students' spiritual aspects, as well as provide a strong value foundation for critical reflection on contemporary issues, thereby increasing their ability to address and respond to complex changes in modern society.

Previous research shows that the integration of the Al-Quran in learning has a positive impact on developing character and moral values in students. Even so, research that specifically examines the direct influence of the Al-Quran integrated differential learning model on the critical thinking abilities of prospective elementary school teachers is still limited. Therefore, this research aims to fill this knowledge gap.

The results of observations on prospective elementary school teachers at UIN Mataram, PGMI Study Program semester 2, show that the majority of students show initial abilities in understanding basic learning concepts. However, the ability to carry out critical analysis of learning material is still limited. Students tend to receive information passively without asking in-depth questions or investigating further. This shows the need to develop critical thinking skills through a learning approach that facilitates reflective discussions, problem solving, and critical evaluation of the information obtained, including the integration of Al-Quran values in the learning process as a stimulus to stimulate their critical thinking further.

In an effort to increase the professionalism of prospective teachers, an in-depth understanding of how differential learning models integrated with Al-Quran values can influence critical thinking skills is very important. It is hoped that the implications of this research can contribute to the development of educational curricula and learning strategies that are more holistic and sustainable. By exploring more deeply the relationship between the differential learning model and the Al-Quran in the educational context, as well as looking at empirical evidence that supports the positive influence of the integration of these two elements on critical thinking skills in prospective elementary school teachers, this article seeks to provide new views and solutions concrete efforts to improve the quality of education at the basic level.

METHOD

The research method used in this research was quasi-experimental with a population of second semester students of the PGMI Study Program at UIN Mataram. The sample consisted of 58 students who were divided into two classes, namely class A (experimental) with 30 students and class B (control) with 28 students. The data collection technique is carried out through 10 numbered descriptive test questions, which are designed to measure students' critical thinking abilities by paying attention to relevant indicators. The collected data will be analyzed using parametric statistical methods, such as the t test or ANOVA, to compare differences in critical thinking abilities between the experimental and control groups.

RESULT AND DISCUSSION

This research aims to evaluate the influence of the AI-Quran integrated differential learning model on elementary school students' critical thinking abilities. This research was conducted on prospective elementary school teachers. The average results of prospective teachers' critical thinking abilities are presented in Figure 1 below.

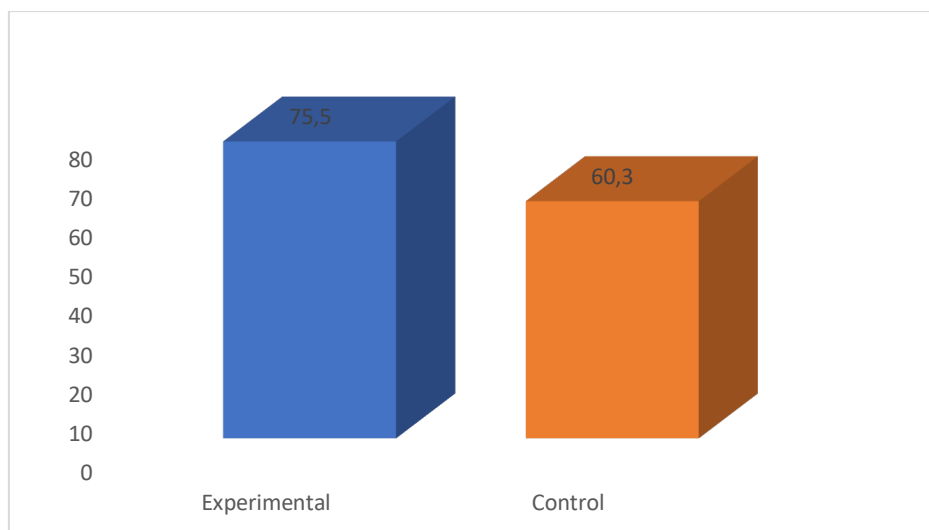


Figure 1. Average Critical Thinking Ability

The research results showed that the average critical thinking ability score in the experimental group (class A) was 75.5, while in the control group (class B) it was 60.3. This difference shows the potential for a significant increase in critical thinking skills in students who take part in learning using the AI-Quran integrated differential learning model compared to those who take conventional learning without this integration. The increase in the average critical thinking ability score in the experimental group who received the AI-Quran integrated differential learning model intervention can be explained by several factors (Putri et al., 2020). First, the integration of the Koran in learning may have provided additional deep spiritual values, motivating students to consider critical aspects of the material studied. In addition, a differential approach to teaching allows for better adjustment to individual learning styles, facilitating deeper understanding and solving more complex problems (Hikmawati et al., 2021).

On the other hand, the control group that did not receive the intervention showed a lower average score in critical thinking skills. This may indicate that conventional approaches to teaching may not be sufficient to effectively develop critical thinking skills in students. Factors such as a lack of adjustment to individual learning styles and a lack of spiritual stimulus from the Koran could be factors causing the low scores in the control group. The research results based on each indicator of critical thinking ability are presented in Figure 2 below.

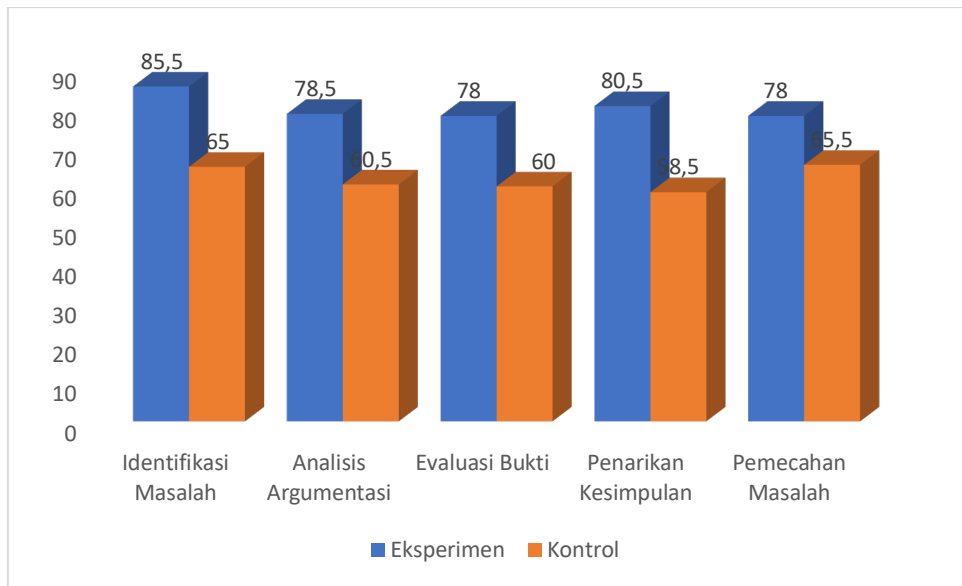


Figure 2. Comparison of Critical Thinking Ability Results for each Indicator

Figure 2 above shows the average score for each indicator of critical thinking ability between the experimental group (class A) and the control group (class B). The higher average scores on almost all indicators in the experimental group indicate the potential for significantly increasing critical thinking abilities compared to the control group. For example, on the evidence evaluation indicator, the experimental group recorded an average score of 78, while the control group only achieved 60. This indicates that the integration of the Al-Quran integrated differential learning model is effective in improving the ability of prospective elementary school teachers to evaluate and conclude information critically.

The significant difference in mean scores between the two groups can be explained by different learning approaches. The experimental group implemented an integrated differential learning model of the Koran, which allows for adjustments to learning based on individual needs and includes dimensions of spirituality through Al-Quran values. This approach provides additional stimulus for students to develop their critical thinking skills. On the other hand, the control group may experience obstacles in improving critical thinking abilities due to a lack of adaptation to individual learning styles and a lack of stimulation of spiritual values (Fuad et al., 2017). The results of statistical analysis are shown in the following table.

Table 1. Output Paired Sample t-test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest_experimental Posttest_experimental	-16,340	5,432	1,928	-25,346	-22,384	-21,741	25	,000
Pair 2	Pretest_control- Posttest_control	-12,465	8,032	1,832	-15,393	-7,736	-6,068	28	,000

These results indicate that the average critical thinking ability score in the experimental group experienced a significant increase after implementing the intervention (Al-Quran integrated differential learning model). The mean difference of -16.340 indicates that there is an improvement in students' critical thinking skills after following learning with this model. The relatively low standard deviation (5.432) indicates that the data tends to be homogeneous around the mean, while the low standard error of the mean (1.928) indicates that the results of this measurement tend to be stable.

Meanwhile, in the control group, there was also an increase in the average score, although not as big as the experimental group. The mean difference of -12.465 shows that even without the intervention of the Al-Quran integrated differential learning model, conventional learning can also have a positive impact on critical thinking skills. A higher standard deviation (8.032) indicates greater variation in the measurement results, but a relatively low standard error of the mean (1.832) indicates that the measurement results are quite reliable.

The difference in results between the two groups can be interpreted as the effect of the Al-Quran integrated differential learning model intervention in the experimental group. The integration of Al-Quran values may have provided additional deep spiritual value and relevance in students' understanding of learning material, thereby increasing their ability to think critically. This is in line with literature which shows that approaches that adapt learning to individual needs can significantly improve learning outcomes. On the other hand, positive results in the control group also show that conventional learning approaches still provide benefits, although perhaps not as optimal as the integrated differential model of the Al-Quran. Other factors such as teaching quality, student motivation, and environmental factors may also contribute to these results.

The Al-Quran integrated differential learning model offers a holistic approach in improving students' critical thinking skills in basic education. This integration not only takes into account individual variations in learning styles, but also brings the deep spiritual and moral values of the Koran into the learning context (Mulbar et al., 2018). By taking into account diverse learning needs, this model allows teachers to adapt teaching approaches to be more responsive to individual student needs. This tailored teaching not only improves students' conceptual understanding but also encourages them to develop deeper analytical, evaluative, and problem-solving skills.

Using the Koran as a teaching source in this context not only provides a strong spiritual dimension, but also activates students' critical thinking processes by asking in-depth questions about the values, ethics and wisdom contained in this sacred text (Zulyusri, 2023). This allows students to not only develop critical thinking skills in an academic context, but also in exploring the application of moral values in everyday life. Thus, the integration of differential learning models with Al-Quran values is not only about improving students' learning outcomes cognitively, but also forming strong character and morality in their education (Rahmah et al., 2022).

Overall, the results of this research confirm the importance of integrating differential learning models inspired by the Al-Quran in strengthening students' critical thinking abilities. The implications of this research can provide encouragement for educators to consider a more holistic and spiritual values-oriented approach in curriculum development and learning strategies in basic education.

CONCLUSION

The integration of the Al-Quran integrated differential learning model is able to significantly improve students' critical thinking abilities at the basic education level. This approach not only allows for more effective adaptation of learning to individual learning styles, but also introduces the deep spiritual values of the Koran into the educational process. Thus, education that integrates spiritual aspects not only enriches students' learning experiences intellectually, but also provides a strong moral and ethical foundation for their future character development. The implication is the need for a holistic approach in the education curriculum that does not only emphasize academic aspects, but also respects the spiritual dimension in forming a cognitively and morally comprehensive young generation.

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