



The Relationship Between Memorizing the Qur'an and Students' Academic Achievement: Case Study of Science Subjects at Tahfidzul Quran An-Nahl Mataram Integrated Islamic Elementary School

Thufail Mujaddid Al-Qoyyim^{1,2}, Affan², Siti Maulidiya Nabila², Muhaini², Siti Hajariah², Aida Atika Suri², Buntana²

¹Physics Education, FKIP, Mataram University, West Nusa Tenggara, Indonesia

²Tahfidzul Quran An-Nahl Integrated Islamic Elementary School Mataram, West Nusa Tenggara, Indonesia

DOI: <https://doi.org/10.29303/geoscienceed.v5i3.357>

Article Info

Received: 16 July 2024

Revised: 02 August 2024

Accepted: 28 August 2024

Correspondence:

Phone: +62 895-1205-4726

Abstract: This research analyses the relationship between memorizing the Al-Qur'an and students' academic achievement in Natural Sciences (IPA) subjects at SD IT Tahfidzul Quran An Nahl. This study uses a quantitative approach with a correlational design to measure the relationship between the amount and quality of memorizing the Al-Qur'an and science learning outcomes for students in grades 4 and 5. The research sample consisted of 27 students who were selected purposively. Data on the amount of memorization was taken from the accumulated results of daily evaluations of Al-Qur'an memorization. In contrast, the quality of memorization was assessed based on tajwid, Maharaj, and fluency. Science learning outcomes were obtained from the final summative assessment of even grades 4 and 5 semesters. Data were analyzed using Pearson's descriptive and correlational statistics. The research results show a positive correlation between the amount of memorization and the quality of memorization and science learning outcomes. These findings indicate that memorizing the Qur'an contributes to students' spiritual development and positively impacts their academic achievement, especially in science subjects. This research provides important insights for developing an integrative curriculum, combining religious and academic education to achieve holistic development of students

Keywords: Memorizing The Qur'an; Science Learning Outcomes; Religious Education; Academic Education, Correlation.

Citation: Al-Qoyyim, M, T., Affan., Maulidiya, S., Muhaini, Hajariah, S., Suri, A, A., Buntana. (2024). The Relationship Between Memorizing the Qur'an and Students' Academic Achievement: Case Study of Science Subjects at Tahfidzul Quran An-Nahl Mataram Integrated Islamic Elementary School. *Jurnal Pendidikan, Sains, Geologi, dan Geofisika (GeoScienceEd Journal)*. 5(3), 483-488. Doi: <https://doi.org/10.29303/geoscienceed.v5i3.357>

Introduction

Education is one of the fundamental aspects of nation and state development. In Indonesia's education context, Islamic religious education plays a vital role in shaping the character and morals of students. One form of religious education that has received significant attention is memorizing the Koran. Memorizing the Qur'an is considered a form of worship and a method to improve students' discipline and cognitive skills (Asliyiah & Ananda, 2022). Education based on

memorizing the Qur'an is often associated with improving memory abilities, concentration and perseverance, all of which are essential attributes in academic achievement (Fairuzillah & LIstiana, 2021; Sirin et al., 2021).

As religion-based education develops, there is a need to understand how this education contributes to student academic learning outcomes in other fields, such as Sciences (Tarmuji et al., 2022). In an era where holistic education is the main focus, exploring the relationship

Email: hawariyyun.young@gmail.com

between memorizing the Qur'an and academic achievement in science is essential. This research aims to answer this question by analyzing how the amount and quality of memorizing the Qur'an is related to students' science learning outcomes.

Although many studies highlight the benefits of memorizing the Qur'an in shaping character and improving basic cognitive abilities, research directly links memorizing the Qur'an with academic achievement in non-religious subjects, such as science (Arif & Nggolitu, 2019; Fairuzillah & Listiana, 2021), still limited. More literature needs to be empirically discussed on this relationship, especially in Indonesia's primary education context. Most studies focus on the spiritual and moral aspects of memorizing the Qur'an without investigating its potential impact on academic abilities in science. This lack of research creates a significant knowledge gap, given the importance of understanding factors that can improve student academic achievement (Kusaeri & Ridho, 2019). Does memorizing the Qur'an only improve moral and spiritual aspects, or does it also contribute to improving academic abilities in subjects such as science? This question underlies the present study, which seeks to provide empirical answers to this relationship.

Several studies have shown that memorizing the Qur'an can improve critical cognitive skills. The study found that students who regularly memorized the Koran significantly increased their working memory capacity (Fairuzillah & Listiana, 2021). This strong working memory is critical in problem-solving and understanding complex concepts, which is integral to science learning. In addition, research states that memorizing the Al-Qur'an can increase students' concentration and attention (Azavitra, 2020). This skill is indispensable in studying subjects that require in-depth analysis and sustained focus, such as science. This research also shows that students who memorize the Qur'an have better discipline and time management, positively impacting their academic results.

However, most of this research is still general and needs to link memorizing the Qur'an with science learning outcomes explicitly. The existing literature mainly discusses general effects on cognitive abilities without investigating the impact on specific subjects. This shows the need for more specific and focused research on the relationship between memorizing the Qur'an and academic achievement in science. Although there is evidence to suggest that memorizing the Qur'an can improve cognitive skills relevant to academic learning, there is a gap in the literature that directly links this practice to learning outcomes in certain subjects (Fairuzillah & Listiana, 2021; Sirin et al., 2021; Tarmuji et al., 2022; Asliyah & Ananda, 2022). Existing research

does not provide enough empirical evidence about how memorizing the Qur'an contributes to specific science learning outcomes.

In addition, most research was conducted at the secondary or upper education level, while research targeting primary education, mainly grades 4 and 5, still needs to be completed. Grades 4 and 5 of elementary school are critical stages in students' academic development, where the basics of understanding scientific concepts begin to form (Yundianto et al., 2023). Exploring the impact of memorizing the Qur'an at this stage can provide essential insights into how religious education can be effectively integrated with academic education at the primary level (Febriyanti et al., 2022). This research offers novelty by focusing on the relationship between the amount and quality of memorizing the Qur'an with science learning outcomes in students in grades 4 and 5. This research not only looks at the quantitative aspect of memorization but also considers the quality of memorization, which includes an understanding of recitation, Maharaj, and smoothness. This holistic approach provides a deeper perspective on how memorizing the Qur'an can impact students' academic outcomes.

By exploring this relationship in the context of primary education in Indonesia, this research contributes to the limited literature in this area. In addition, by using an empirical approach, this research seeks to provide concrete evidence that can be used to develop more integrative and holistic education policies. This research aims to identify and analyze the relationship between the amount and quality of memorizing the Al-Qur'an with the science learning outcomes of grade 4 and 5 students. Specifically, this research aims to measure the amount of memorizing the Al-Qur'an possessed by students in grades 4 and 5, evaluate the quality of memorizing the Qur'an possessed by students in grades 4 and 5, taking into account aspects such as recitation, makhraj (where the Arabic letters come out), and fluency, as well as assessing science learning outcomes for students in grades 4 and 5. In addition, this research aims to analyze the relationship between the amount of memorization of the Al-Qur'an and science learning outcomes and the relationship between the quality of memorizing the Al-Qur'an and science learning outcomes.

By achieving these goals, it is hoped that this research will provide new insights into how religious education can contribute to student's academic achievement in science. In addition, the results of this research can provide a basis for developing more integrative education policies, which combine religious education with academic education to produce students who are spiritually and academically superior students.

This research will enrich existing literature and provide practical implications for educators and policymakers in designing holistic and effective educational programs.

Method

This research uses a quantitative approach with a correlational design to identify and analyze the relationship between the amount and quality of memorizing the Al-Qur'an and science learning outcomes in grade 4 and 5 students (Yundianto et al., 2023). The research was conducted at the Tahfidzul Quran An Nahl Integrated Islamic Elementary School (SD IT), which implemented an Al-Qur'an memorization program as part of its curriculum. The research sample consisted of 27 grade 4 and grade 5 students who were saturated samples.

Data was collected through two main methods: accumulation of daily evaluation results for memorizing the Al-Qur'an and end-of-semester summative assessment for science learning outcomes. Data on the amount of memorization was taken from the accumulated results of daily evaluations of Al-Qur'an memorization while attending elementary school IT Tahfidzul Quran An-Nahl. The amount of memorization is measured based on the number of juz successfully memorized by students. The quality of memorization is assessed based on three main criteria: tajwid, makhraj, and fluency. Quality assessment is carried out by Quran memorization teachers who are competent in this field, using a predetermined assessment scale. Evaluation of science learning outcomes is taken from the summative assessment at the end of the even semester in grades 4 and 5. This assessment covers various aspects of science material that are in accordance with the applicable curriculum. This test is designed to measure conceptual understanding, analytical skills, and application of science knowledge. The scores from this summative assessment are then used as indicators of students' science learning outcomes.

The research instruments include accumulated data on memorizing the Al-Qur'an and science learning results tests. The accumulated memorization data is designed to measure the amount and quality of students' memorization, with quality assessed based on tajwid, makhraj, and fluency. The science learning outcomes test covers various aspects of science material that has been taught in class, consisting of multiple-choice questions and essays. The data collected was analyzed using descriptive and inferential statistical techniques. Descriptive statistics are used to describe the distribution of the amount of memorization, quality of memorization, and science learning outcomes, while Pearson correlational analysis is used to test the relationship between these variables.

Result and Discussion

This research aims to analyze the relationship between the amount and quality of memorizing the Qur'an on the science learning outcomes of grade 5 students. Religion-based education can impact students' academic development, especially memorizing the Qur'an. The main focus of this study is to evaluate whether the amount and quality of memorizing the Qur'an can influence students' science learning outcomes.

The results of descriptive statistics show that of the 27 students who participated, the average number of memorizations was 2.36 juz with a standard deviation of 1.12. The average quality of memorization is 82.15 with a standard deviation of 3.66, and science learning outcomes have an average of 88.00 with a standard deviation 6.60. The range of data shows significant variation between students, with the amount of memorization ranging from 0.90 to 5.00 juz, the quality of memorization ranging from 75 to 88, and science learning outcomes ranging from 72 to 99. This variation allows for a more complex relationship analysis between these variables.

Tabel 1. Correlation Matrix Between Variables

	Number of Quran Memories	Quality of Quran Memorization	Science Learning Outcomes
Number of Quran Memories	1.00	0.65	0.40
Quality of Quran Memorization	0.65	1.00	0.35
Science Learning Outcomes	0.40	0.35	1.00

A positive correlation of 0.65 between the amount of memorization and the quality of memorization shows a reasonably strong relationship between these two variables. Students who have more memorization tend to have better memorization quality. This relationship can be explained through several factors, such as more frequent repetition and learning, higher motivation and dedication, and effective learning methods. Students who memorize more parts of the Qur'an may repeat and revise more frequently, improving their memorization quality (Febriyanti et al., 2022). High dedication to memorizing also reflects the same commitment to the quality of memorization.

A correlation of 0.40 between the amount of memorization and science learning outcomes indicates a moderate positive relationship. Although not as strong

as the relationship between the amount and quality of memorization, this correlation is still significant. Students who memorize more tend to have better science learning outcomes. Some factors that explain this relationship include better discipline and time management, trained cognitive skills, and a supportive learning environment. The discipline of memorizing the Qur'an can be applied in other academic fields. At the same time, cognitive skills such as long-term memory, attention and concentration that are developed through memorization are also helpful in studying science subjects (Mulia et al., 2020).

A positive correlation of 0.35 between the quality of memorization and science learning outcomes shows a weaker relationship than between the amount of memorization and science learning outcomes. Nevertheless, this relationship is still essential and shows that students with better memorization quality tend to have better science learning outcomes. Factors influencing this relationship include the quality of learning students apply in studying other subjects, a holistic approach to education, and good focus and concentration abilities (Mulia et al., 2020).

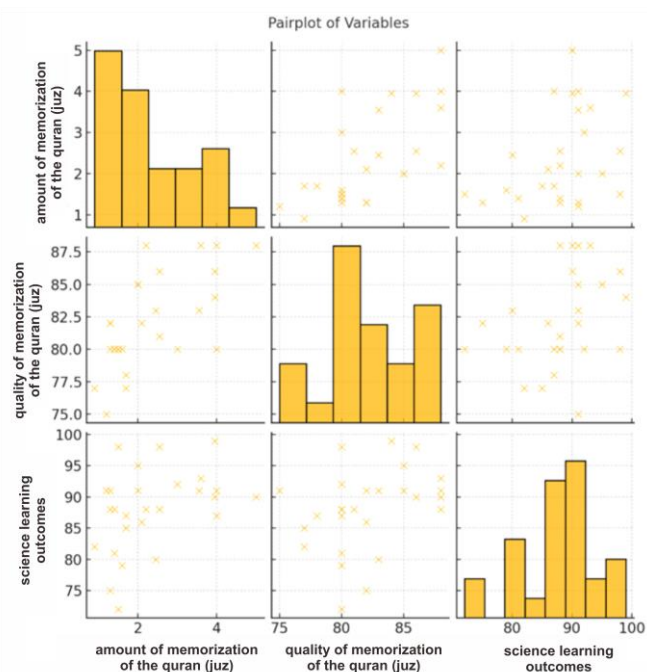


Figure 1. The relationship between the amount of memorization of the Qur'an (in juz), the quality of memorization, and the science learning outcomes of grade 5 students which illustrates the visualization of the distribution and correlation relationship between these three variables

Memorizing the Qur'an can significantly develop students' cognitive intelligence, influencing their learning outcomes (Fairuzillah & Listiana, 2021).

Cognitive intelligence includes problem-solving, critical thinking, and understanding abstract concepts. Memorizing the Qur'an involves the use of various aspects of cognitive intelligence, which can help students achieve better learning outcomes in various subjects, including science (Sirin et al., 2021; Titkhomirova et al., 2020).

Memory development is one of the main cognitive aspects that is strengthened through memorizing the Al-Qur'an (Fairuzillah & Listiana, 2021). Memorizing long and complex texts such as the Koran can increase students' memory capacity. Continuous memory training strengthens their ability to retain and recall information, which is critical in academic learning. Good memory skills help students remember important facts, formulas and concepts taught in science subjects (Khan & Dzulkifli, 2021). Additionally, the development of trained long-term memory from rote learning can be applied to other learning, providing an advantage in remembering information for tests and school assignments.

Concentration and focus skills also develop through memorizing the Al-Qur'an (Sirin et al., 2021). Memorizing this sacred text requires a high level of concentration and focus. Students who are accustomed to this practice tend to be able to focus longer and avoid distractions while studying. This skill is invaluable in studying subjects that require in-depth understanding and problem-solving, such as science. Good concentration allows students to pay attention to essential details in science lessons, increasing their understanding of the concepts.

Critical and analytical thinking is another cognitive skill encouraged through memorizing the Qur'an (Fairuzillah & Listiana, 2021; Mulia et al., 2020). Memorizing and understanding the meaning of the Koran can encourage students to think critically and analytically. This process involves understanding context, connecting verses, and applying knowledge in everyday life. Critical and analytical thinking developed through memorizing the Qur'an can be applied in analyzing and solving complex problems in science subjects (Karim et al., 2021). Analytical thinking helps students analyze scientific experiments, understand data, and draw accurate conclusions from the results.

Memory development is one of the main cognitive aspects that is strengthened through memorizing the Al-Qur'an (Fairuzillah & Listiana, 2021). Memorizing long and complex texts such as the Koran can increase students' memory capacity. Continuous memory training strengthens their ability to retain and recall information, which is critical in academic learning. Good memory skills help students remember important facts, formulas and concepts taught in science subjects (Khan

& Dzulkifli, 2021). Additionally, the development of trained long-term memory from rote learning can be applied to other learning, providing an advantage in remembering information for tests and school assignments.

Concentration and focus skills also develop through memorizing the Al-Qur'an (Sirin et al., 2021). Memorizing this sacred text requires a high level of concentration and focus. Students who are accustomed to this practice tend to be able to focus longer and avoid distractions while studying. This skill is invaluable in studying subjects that require in-depth understanding and problem-solving, such as science. Good concentration allows students to pay attention to essential details in science lessons, increasing their understanding of the concepts.

Critical and analytical thinking is another cognitive skill encouraged through memorizing the Qur'an (Fairuzillah & Listiana, 2021; Mulia et al., 2020). Memorizing and understanding the meaning of the Koran can encourage students to think critically and analytically. This process involves understanding context, connecting verses, and applying knowledge in everyday life. Critical and analytical thinking developed through memorizing the Qur'an can be applied in analyzing and solving complex problems in science subjects (Karim et al., 2021). Analytical thinking helps students analyze scientific experiments, understand data, and draw accurate conclusions from the results.

Discipline and time management are other important aspects related to memorizing the Qur'an. Memorizing the Qur'an consistently requires discipline and good time management. Successful students at rote learning usually have a structured study routine and can manage their time effectively. This discipline can help them manage their study time for other subjects and ensure they can complete assignments on time (Mulia et al., 2020). Good time management allows students to create a balance between memorization and academic study, ultimately improving their overall academic performance.

The relationship between variables is visualized through pair plots (Figure 1), showing a positive relationship pattern between the amount of memorization, the quality of memorization, and science learning outcomes. The relationship between the amount of memorization and the quality of memorization seems quite clear. In contrast, the relationship between the amount of memorization and science learning outcomes and the quality of memorization and science learning outcomes looks more moderate. This visualization helps identify general trends and outliers, providing a more comprehensive view of how these variables are related.

The implications of this research's results can be applied in several fields of education. First, developing a curriculum that integrates memorizing the Koran with other academic subjects can help students achieve better learning outcomes. By utilizing the skills and discipline gained from memorizing the Qur'an, students can be guided to achieve better learning outcomes in various fields of study. This holistic curriculum can include a structured rote program and sufficient time for academic learning, creating a balanced and effective learning environment.

Second, teacher training that integrates effective memorization techniques with teaching methods that support holistic learning is needed. This training may include strategies to improve the quality of memorization and ways to apply these principles in the teaching of other subjects. Teachers can be trained to develop memorization programs that support students' cognitive development while implementing teaching methods that encourage critical and analytical thinking in academic subjects.

Third, parental support is very important in a child's learning process. Parents can be involved in programs that support memorizing the Quran at home and provide emotional support and motivation to achieve high-quality memorization and good academic learning outcomes. Active parental participation in the rote learning process can create a positive learning environment at home, reinforcing the values of discipline and dedication necessary for academic success.

Lastly, further research is needed to explore the relationship between memorizing the Qur'an and learning outcomes in a broader context. Longitudinal studies can provide insight into how memorization skills develop over time and how they influence long-term academic outcomes. This research could include a more in-depth analysis of how motivation, learning methods, and learning environment influence the relationship between memorization and learning outcomes.

Conclusion

In conclusion, this research shows a positive relationship between the amount of memorization, the quality of memorization, and the science learning outcomes of grade 5 students. The amount of memorization has a reasonably strong correlation with the quality of memorization, and both have a positive relationship with science learning outcomes. Although these relationships are not strong, they are still significant and indicate that memorizing the Qur'an can improve students' academic achievement. By understanding and utilizing this relationship, educators

and parents can help students achieve a balance between religious and academic education, which can ultimately result in holistic development and higher achievement in various aspects of life.

Acknowledgements

We would like to thank the Al-Quran Foundation An Nahl West Nusa Tenggara for funding this research.

References

- Arif, M., & Nggolitu, I. (2019). Hafidz Qur'an and Its Influence toward High School Students Learning Achievement in Indonesia. *Ijtimā Iyya Journal of Muslim Society Research*, 4(2), 175-196. <https://doi.org/10.24090/ijtimaiyya.v4i2.2840>
- Asliyah, N., & Ananda, R. (2022). The effect of memorizing the Quran on students' mathematical logical intelligence. *Desimal: Jurnal Matematika*, 5 (1), 61-68. <https://doi.org/10.24042/djm.v5i1.11521>
- Azavitra, Z. (2020). Study of Students' Concentration in the Classroom with Quranic Recitation Background using Electroencephalogram. *International Journal of Advanced Trends in Computer Science and Engineering*, 9 (1), 158-165. <https://doi.org/10.30534/ijatcse/2020/2991.12020>
- Fairuzillah, M., & Listiana, A. (2021). The Positive Impact of Memorizing the Qur'an on Cognitive Intelligence of Children. *Proceedings of the 5th International Conference on Early Childhood Education (ICECE 2020)*, 538, 334-338. <https://doi.org/10.2991/ASSEHR.K.210322.071>
- Karim, A., Cholily, Y., & Syaifuddin, M. (2021). DEVELOPING A SET MODULE WITH A GUIDED INQUIRY AND TAHFIDZUL QURAN TO IMPROVE STUDENTS' CRITICAL THINKING. *Kalamatika: Jurnal Pendidikan Matematika*, 6 (2), 111-126. <https://doi.org/10.22236/kalamatika.vol6no2.2021pp111-126>
- Khan, R., & Dzulkifli, M. (2021). Understanding hifdh and its effect on short-term memory recall performance: An experimental study on high school students in Saudi Arabia, 2 (1), 12-21. <https://doi.org/10.32505/inspira.v2i1.2934>
- Kusaeri, K., & Ridho, A. (2019). Learning outcome of mathematics and science: Features of Indonesian madrasah students. *Jurnal Penelitian dan Evaluasi Pendidikan*, 23 (1), 95-105. <https://doi.org/10.21831/PEP.V23I1.24881>
- Mulia, R., Neviyarni, N., & Alizamar, A. (2020). The Contribution of Self-Adjustment and Learning Skill to Qur'an Memorization Achievement of Boarding School Students. *International Journal of Applied Counseling and Social Sciences*, 1 (2), 60-68. <https://doi.org/10.24036/005350IJACCS>
- Sirin, S., Metin, B., & Tarhan, N. (2021). The effect of memorizing the quran on cognitive functions. *The Journal of Neurobehavioral Sciences*, 8, 22 - 27. https://doi.org/10.4103/jnbs.jnbs_42_20
- Tarmuji, N., Mohamed, N., Hazudin, S., & Ahmad, W. (2022). Linking Study of Memorising Quran with Academic Performance. *Asia Pacific Journal of Educators and Education*, 37 (1), 181-191. <https://doi.org/10.21315/apjee2022.37.1.9>
- Tikhomirova, T., Malykh, A., & Malykh, S. (2020). Predicting Academic Achievement with Cognitive Abilities: Cross-Sectional Study across School Education. *Behavioral Sciences*, 10. <https://doi.org/10.3390/bs10100158>
- Yundianto, D., Khatami, M., Fathony, A., Rangkuti, A., & Syahputra, W. (2023). Memorizing the Quran: Exploring Academic Hardiness, Self-Efficacy, and Perceived Social Support in Islamic Schools. *International Journal of Islamic Educational Psychology*, 4 (2), 225-243. <https://doi.org/10.18196/ijiep.v4i2.19812>