The Impact of the Mind Mapping Method on Students' Learning Outcomes in Islamic Religious Education at Public Senior High School 1 Delitua

Mutiara*
Universitas Islam Sumatera Utara
Email: mutiara@gmail.com

Abstract

This study aims to analyze the effectiveness of the *Mind Mapping* method in improving students' learning outcomes in Islamic Religious Education (PAI), specifically on the topic of *Asmaul Husna*. The research design used was classroom action research with a one-group pre-test post-test approach. The subjects of this study consisted of 30 students from class X IPS 5 at SMA Negeri 1 Deli Tua, selected using purposive sampling. Data were collected through test instruments and analyzed using statistical tests. The results indicate a significant increase in students' average learning outcomes, rising from 54.30 in the pre-test to 81.96 in the post-test. Statistical analysis reinforces these findings, with the calculated t value (9.47) being greater than the t table value (2.04). These findings demonstrate that the *Mind Mapping* method is an effective learning strategy that facilitates students in organizing, connecting, and understanding religious concepts systematically. Based on the perspectives of constructivism and meaningful learning theory, this method has proven capable of assisting students in actively integrating new knowledge into their existing cognitive structures, thereby fostering more meaningful learning and facilitating the internalization of *Asmaul Husna* subject matter.

Keywords: *Mind Mapping; Learning Outcomes; Islamic Religious Education; Asmaul Husna*

Abstrak: Penelitian ini bertujuan untuk menganalisis efektivitas penerapan metode *Mind Mapping* dalam meningkatkan hasil belajar siswa pada mata pelajaran Pendidikan Agama Islam (PAI), khususnya pada materi Asmaul Husna. Jenis penelitian yang digunakan adalah penelitian tindakan kelas dengan desain *one-group pre-test post-test*. Subjek penelitian ini melibatkan 30 siswa kelas X IPS 5 di SMA Negeri 1 Deli Tua yang dipilih menggunakan teknik *purposive sampling*. Data dikumpulkan melalui instrumen tes dan dianalisis menggunakan uji statistik. Hasil penelitian menunjukkan peningkatan rata-rata hasil belajar siswa yang signifikan, yakni dari 54,30 pada tahap *pre-test* menjadi 81,96 pada tahap *post-test*. Pengujian statistik memperkuat temuan ini dengan

nilai *t* hitung (9,47) yang lebih besar daripada *t* tabel (2,04). Temuan ini membuktikan bahwa metode *Mind Mapping* efektif sebagai strategi pembelajaran yang memfasilitasi peserta didik dalam mengorganisasi, menghubungkan, dan memahami konsep-konsep keagamaan secara sistematis. Berdasarkan perspektif konstruktivisme dan teori *meaningful learning*, metode ini terbukti mampu membantu siswa mengintegrasikan pengetahuan baru ke dalam struktur kognitif mereka secara aktif, sehingga proses pembelajaran menjadi lebih bermakna dan mempermudah internalisasi materi Asmaul Husna.

Kata Kunci: *Mind Mapping; Hasil Belajar; Pendidikan Agama Islam; Asmaul Husna*

Introduction

Wenty-first-century learning has become a focal point in the educational paradigm shift toward student-centered knowledge construction. Nevertheless, the effectiveness of instructional approaches capable of producing conceptual understanding remains a subject of debate within educational discourse. For instance, the behaviorist perspective posits learning outcomes as the consequence of systematically administered practice and reinforcement, whereas the constructivist perspective asserts that knowledge only develops optimally when learners actively connect new information with their pre-existing cognitive structures.

In the context of Islamic Religious Education (PAI), the subject matter requires not only the mastery of factual knowledge but also the ability to comprehend interconceptual relationships and internalize religious values. Consequently, the effectiveness of a teaching method is no longer measured solely by its capacity to elevate academic scores, but also by its ability to construct meaningful learning environments wherein students can grasp the material's substance comprehensively.

The reality of PAI instruction across various schools indicates that the learning process remains dominated by expository strategies, which position the teacher as the primary source of knowledge. Such instructional patterns tend to generate rote-oriented learning activities, leading students to memorize information more easily than they construct conceptual understanding. This condition poses a distinct challenge for the *Asmaul Husna* material, which inherently possesses hierarchical and interconnected characteristics; each name of Allah SWT contains theological meanings that cannot be comprehended in isolation (Zubaidah et al., 2025).

When instruction is strictly oriented toward information delivery, students tend to experience difficulties connecting the meaning of each *Asmaul Husna* with its embedded values and its application in daily life. Thus, the issue of low PAI learning outcomes is not merely caused by students' abilities but also signifies the sub-optimal nature of instructional strategies in facilitating the conceptual thinking processes that form the foundation of religious understanding.

The mind mapping method offers a relevant approach to addressing this issue. According to the meaningful learning theory developed by David Ausubel, the learning process occurs effectively when new information is integrated into the learner's pre-existing knowledge structure (Bryce & Blown, 2024). In this context, mind mapping—introduced by Tony Buzan—functions as a visual representation tool that helps students organize information, establish connections between concepts, and arrange knowledge hierarchically. This mechanism aligns with constructivist principles, which view learning as an active process of meaning-making through the association of interconnected concepts (Pratami, Darmayanti, & Yahya, 2025). Therefore, the effectiveness of mind mapping lies not just in presenting images or branching ideas, but in its capacity to facilitate the reorganization of cognitive structures so that students attain a more profound understanding of the studied material.

Various prior studies have consistently reported that the application of mind mapping improves learning outcomes, conceptual understanding, learning motivation, and student participation across multiple educational levels (Pratami et al., 2025; Rahmawati & Fihris, 2024; Sauwitri, Safari, & Baharudin, 2026). However, most of these studies continue to position mind mapping primarily as a technique for enhancing academic achievement, evidenced by comparing pre- and post-instructional scores. Explanations regarding the pedagogical mechanisms that render this method effective—particularly in Islamic Religious Education, which is deeply laden with concepts and values—remain relatively scarce.

Furthermore, research explicitly examining mind mapping applied to *Asmaul Husna* at the high school level is still underexplored. Departing from this gap, the present study offers a distinct perspective by positioning mind mapping not merely as an outcome-enhancement strategy, but as a visual-cognitive approach that facilitates meaningful learning in comprehending religious concepts (Arifin Bando & Hasnidar, 2026). Hence, the novelty of this research lies not in its geographical location, but

in its effort to elucidate the relevance of mind mapping characteristics to the formation of conceptual understanding in Islamic Religious Education.

Based on these arguments, this study aims to analyze the impact of applying the mind mapping method on students' Islamic Religious Education learning outcomes at SMA Negeri 1 Delitua. This research is expected to not only provide empirical evidence of mind mapping's effectiveness in improving learning outcomes but also to enrich pedagogical discourse regarding how visual strategies can support meaningful learning of religious materials. Accordingly, the formulated research question is: What is the impact of applying the mind mapping method on the Islamic Religious Education learning outcomes of students at SMA Negeri 1 Delitua.

Method

This research employs a quantitative approach utilizing a pre-experimental design, specifically a one-group pre-test–post-test design. This design was selected to test the effect of the mind mapping method on Islamic Religious Education learning outcomes concerning the *Asmaul Husna* material. Measurements were conducted in two stages: prior to the treatment (pre-test) to determine students' baseline abilities and following the treatment (post-test) to measure changes in learning outcomes after the mind mapping method was applied. The study involved 30 students from Class X IPS 5 at SMA Negeri 1 Deli Tua, selected via purposive sampling. The research design workflow is illustrated in Figure 1.

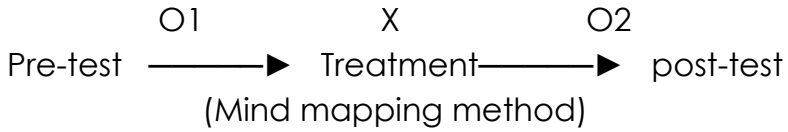

Figure 1. One-Group Pre-test–Post-test Research Designesain

Data collection was carried out through learning outcome tests, observation, and documentation. The learning outcome test served as the primary research instrument, comprising a pre-test and a post-test with items formulated based on the learning achievement indicators for the *Asmaul Husna* material. The pre-test was administered before the treatment to measure initial baseline capability, while the post-test was given after the mind mapping application to ascertain learning outcome improvements. Observations were utilized to monitor learning activities during the treatment process, whereas documentation was used to supplement research data in the form of archives, activity photographs, and other supporting documents.

The research data were analyzed using descriptive and inferential statistics. Descriptive analysis was used to outline data characteristics via

mean values, standard deviations, variances, and frequency distributions of the pre-test and post-test results. Prior to hypothesis testing, prerequisite tests were conducted, including a normality test using the Liliefors test and a homogeneity test using the F-test at a 5% significance level. Subsequently, hypothesis testing was performed using a t-test to determine the significance of the difference in students' learning outcomes before and after the application of the mind mapping method.

Results and Discussion

tudents' Initial Capability in Islamic Religious Education (Pre-Test)

Before implementing the mind mapping method, a pre-test was administered to identify the students' initial baseline capabilities in the Islamic Religious Education subject. Descriptive statistical analysis was performed using SPSS to obtain an overview of the pre-test data characteristics. The analysis results are presented in Table 1.

Table 1. Pre-Test Results

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Test	30	30	70	54.30	12.56
Valid N (listwise)	30				

Source: Data processing results using SPSS.

Based on Table 1, the number of respondents taking the pre-test was 30 students. The minimum score achieved was 30, while the maximum score reached 70. The analytical results show a mean of 54.30 with a standard deviation of 12.56. This mean value indicates that the students' initial capabilities were at a moderate level and did not yet reflect optimal material mastery. Meanwhile, the standard deviation of 12.56 suggests that the students' abilities were quite varied, indicating differences in material mastery levels among learners prior to the mind mapping method's application.

To provide a clearer picture of the pre-test score distribution, the students' score frequency distribution is presented in Table 2.

Table 2. Pre-Test Results Frequency Distribution

Score Interval	Frequency	Percentage (%)
30–37	3	10.00
38–45	1	3.33
46–53	10	33.33
54–61	6	20.00
62–69	8	26.67
70–77	2	6.67
Total	**30**	**100.00**

Source: Research data processing results.

The frequency distribution shows that the majority of students scored within the 46–53 interval, comprising 10 students (33.33%). Furthermore, 8 students (26.67%) were in the 62–69 interval, while 6 students (20.00%) scored in the 54–61 interval. Only a small fraction of students obtained scores in the lowest or highest intervals. This distribution pattern indicates that initial student abilities were concentrated in the middle-tier score groups, leaving substantial room to improve learning outcomes through more effective instructional methods.

To further clarify the students' initial capability levels, the pre-test results were subsequently classified based on assessment categories, as shown in Table 3.

Table 3. Student Initial Capability Categories

Category	Score Interval	Frequency	Percentage (%)
Very Good	85–100	0	0.00
Good	70–84	0	0.00
Fair	50–69	11	37.00
Poor	31–49	19	63.00
Very Poor	0–30	0	0.00
Total		**30**	**100.00**

Source: Research data processing results.

Based on the initial capability classification, the majority of students fell into the "poor" category, totaling 19 students (63%), whereas 11 students (37%) were in the "fair" category. No students achieved the "good" or "very good" categories. These results indicate that the students' baseline capabilities prior to the mind mapping method were relatively low. Consequently, this condition served as the empirical rationale necessitating an instructional strategy capable of increasing learning activity, strengthening conceptual understanding, and driving improvements in Islamic Religious Education learning outcomes.

Students' Capability in Islamic Religious Education After Mind Mapping Application (Post-Test)

After the instructional process using the mind mapping method concluded, all students were given a post-test to measure their learning capability levels in Islamic Religious Education. Descriptive statistical analysis was performed using SPSS to outline the learning outcome characteristics post-treatment. The analysis results are presented in Table 4.

Table 4. Post-Test Results

Variable	N	Minimum	Maximum	Mean	Std. Deviation

Post-Test	30	65	100	81.96	9.53
Valid (listwise)	N30				

Source: Data processing results using SPSS.

Based on Table 4, it is evident that all 30 respondents participated. The minimum score obtained on the post-test was 65, while the maximum score reached 100. The statistical analysis reveals a mean of 81.96 with a standard deviation of 9.53. This average demonstrates that students' capabilities experienced a highly significant increase following the mind mapping instruction compared to their pre-treatment condition. Furthermore, the smaller standard deviation compared to the pre-test indicates that student capabilities became more homogeneous, thereby narrowing the learning achievement gap among learners.

To depict the post-test score spread, the students' score frequency distribution is presented in Table 5.

Table 5. Post-Test Results Frequency Distribution

Score Interval	Frequency	Percentage (%)
65–70	5	16.67
71–76	8	26.67
77–82	4	13.33
83–88	3	10.00
89–94	5	16.67
95–100	5	16.67
Total	**30**	**100.00**

Source: Research data processing results.

The frequency distribution shows that student scores were spread across all intervals, with the highest concentration in the 71–76 interval (8 students or 26.67%). Meanwhile, 5 students each (16.67%) were situated in the 65–70, 89–94, and 95–100 intervals. This score distribution indicates that most learners achieved relatively high learning outcomes post-intervention, with several students even attaining perfect scores.

Subsequently, the post-test results were classified according to student capability categories, as detailed in Table 6.

Table 6. Student Capability Categories After Mind Mapping Application

Category	Score Interval	Frequency	Percentage (%)
Very Good	85–100	19	63.00
Good	70–84	6	20.00
Fair	50–69	5	17.00
Poor	31–49	0	0.00
Very Poor	0–30	0	0.00
Total		**30**	**100.00**

Source: Research data processing results.

Based on Table 6, the majority of students reached the "very good" category, totaling 19 students (63%), followed by the "good" category with 6 students (20%), and the "fair" category with 5 students (17%). No students remained in the "poor" or "very poor" categories. This finding demonstrates that the mind mapping method drove a tangible improvement in learning outcomes, marked by the dominance of students in the "very good" category and the complete absence of low-capability learners. Descriptively, this condition illustrates that mind mapping positively contributed to advancing student comprehension in Islamic Religious Education, particularly concerning the *Asmaul Husna* material. This finding was further validated through hypothesis testing to ascertain statistical significance.

Prerequisite Analysis Tests

Before conducting hypothesis testing, prerequisite analysis tests—including normality and homogeneity tests—were performed. These tests aim to ensure that the data fulfills parametric statistical assumptions, thus rendering it suitable for t-test analysis.

Table 7. Data Normality Test Results

Variable	N	L-count	L-table (a = 0.05)	Decision
Pre-Test	30	0.105	0.161	Normally distributed
Post-Test	30	0.134	0.161	Normally distributed

Source: Research data processing results.

Based on Table 7, the L-count value for the pre-test data is 0.105, and for the post-test data, it is 0.134. Both values are smaller than the L-table value of 0.161 at a 5% significance level. Consequently, both pre-test and post-test data met the normality assumption and could be analyzed using parametric statistics.

In addition to the normality test, a homogeneity test was conducted to determine variance equality between data groups before and after the mind mapping intervention. The homogeneity test results are presented in Table 8.

Table 8. Homogeneity Test Results

Pre-Test Variance	Post-Test Variance	F-count	F-table (a 0.05)	=Decision
157.87	90.92	1.73	4.196	Homogeneous

Source: Research data processing results.

The homogeneity test results show that the F-count value of 1.73 is smaller than the F-table value of 4.196 at a 5% significance level. Thus, it can be concluded that the variances of the two data groups are

homogeneous. The fulfillment of both normality and homogeneity assumptions indicated that the data was suitable for t-test analysis to test the research hypotheses.

Hypothesis Testing

Hypothesis testing was conducted using a t-test to determine the effect of the mind mapping method on Islamic Religious Education learning outcomes. A summary of the test results is presented in Table 9.

Table 9. Hypothesis Test Results

Variable	Pre-Test Mean	Post-Test Mean	t-count	t-table (a = 0.05)	Decision
PAI Learning Outcomes	54.30	81.96	9.47	2.04	Ha accepted

Source: Research data processing results.

Based on Table 9, the obtained t-count value is 9.47, whereas the t-table value at a 5% significance level with degrees of freedom (df = 29) is 2.04. Because the t-count is greater than the t-table (9.47 > 2.04), the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_a) is accepted. This result indicates that the application of the mind mapping method exerts a significant influence on improving Islamic Religious Education learning outcomes concerning the *Asmaul Husna* material.

Descriptively, the effectiveness of the mind mapping method is also visible from the increase in students' mean scores, jumping from 54.30 during the pre-test to 81.96 during the post-test. This enhancement demonstrates that utilizing mind mapping not only helps students organize concepts more systematically but also streamlines the process of comprehending, recalling, and interconnecting learning materials. Consequently, the mind mapping method can be considered an effective instructional strategy for elevating Islamic Religious Education learning outcomes.

Discussion

Students' Learning Outcomes Prior to Mind Mapping Application in Islamic Religious Education at SMA Negeri 1 Deli Tua

Learning outcomes before the utilization of the mind mapping instructional method fell into the "fair" category with an average score of 54.3. The data was normally distributed, as L-count < L-table (0.105 < 0.161), with a standard deviation of 12.56.

According to the Minimum Mastery Criteria (KKM), the students' average score was categorized as incomplete because it fell below 80. This correlates with the prevailing conditions at the school. As stated in the

preceding sections, the teaching and learning process (PBM) conducted by teachers at the school remained largely teacher-centered, positioning the educator as the sole learning resource. Furthermore, the methods employed were conventional or lecture-based, leaving students in a passive role of listening without active participation at the front of the classroom.

The research findings demonstrate that applying the mind mapping method successfully elevated students' learning outcomes in Islamic Religious Education. This improvement suggests that instruction leveraging visual representations to organize concepts yields a more meaningful learning experience compared to instruction exclusively oriented toward linear information delivery (Arif & Aziz, 2023). In other words, mind mapping's effectiveness lies not solely in its visual format, but in its capacity to assist learners in building interconceptual relationships, thereby rendering the constructed knowledge structure more systematic.

These study results also align with constructivist theory, which positions learners as active subjects in knowledge construction. The constructivist perspective asserts that knowledge cannot be transferred directly from teacher to student; rather, it is constructed through cognitive activity, learning experiences, and interaction with the educational environment (Masrurih & Uthman Shehu Lawal, 2025). The implementation of mind mapping affords students the space to independently compile their knowledge structures through processes involving identifying core concepts, determining relationships among ideas, and visually representing the material. These activities foster cognitive elaboration, which ultimately fortifies the comprehension of the studied subject matter (Sutrisno & Nasucha, 2022).

In the context of Islamic Religious Education, the effectiveness of mind mapping holds high relevance because PAI material characteristics demand not just factual mastery, but also the comprehension of interconceptual links and the internalization of values. For the *Asmaul Husna* topic, for example, it is insufficient for students to merely memorize the names of Allah SWT; they must also understand their meanings, value content, and everyday implementation. The creation of mind maps enables students to structurally connect each *Asmaul Husna* with its meaning and practical examples, making learning more contextual and digestible (Hosaini et al., 2024).

Students' Learning Outcomes Following Mind Mapping Application at SMA Negeri 1 Deli Tua

The students' post-test learning outcomes were divided into three categories: "very good" (19 students or 63%), "good" (6 students or 20%), and "fair" (5 students or 17%). Based on the assessment parameters discussed earlier, the post-test learning outcomes prominently fell into the "very good" category (19 students, 63%), with an average of 81.96 and a standard deviation of 9.53. The data was normally distributed, with L-count < L-table (0.134 < 0.161).

The findings demonstrate that implementing the mind mapping method was able to drive improvements in students' PAI learning outcomes. The dominance of students achieving the "very good" category indicates that the instruction not only succeeded in enhancing material mastery but also assisted students in building a more structured understanding of the learned concepts (Akbar, Safitri, & Rusydiyah, 2024). This condition illustrates that mind mapping functions as an instructional strategy capable of shifting the learning process from a passive information-receiving activity to an active knowledge-construction process via idea organization, interconceptual relationship identification, and the arrangement of information into a more systematic structure (Dhindsa, Makarimi-Kasim, & Roger Anderson, 2011).

These findings align with the premise that mind mapping is a learning technique that capitalizes on the brain's natural mechanisms through the use of keywords, idea branches, colors, and visual relationships, making information easier to understand, memorize, and recall when needed. The visual representations constructed within a mind map permit learners to view interconceptual connections holistically rather than as fragmented pieces of information (Feng et al., 2023). Consequently, learning becomes more effective because students can simultaneously develop conceptual understanding and bolster memory retention of the material.

The successful implementation of mind mapping can also be explained through David Ausubel's meaningful learning theory. Ausubel elucidated that the learning process yields optimal results when new information is connected to the learner's pre-existing cognitive structures. In the context of this study, crafting mind maps helped students integrate concepts concerning *Asmaul Husna* into the knowledge schemas they already possessed (Yan & Kim, 2023). As a result, the learning process did not stall at the rote memorization of Allah's names but evolved into a comprehension of the meanings, characteristics, and daily implementations of *Asmaul Husna* values. This indicates that improved learning outcomes reflect not only augmented evaluation scores but also the advancement in the quality of students' conceptual understanding.

This study's findings are also highly relevant to the constructivist perspective, which views knowledge as being actively built by learners through educational experiences. During mind mapping instruction, students are encouraged to identify core concepts, determine ideational relationships, and restructure material into an easily understandable visual format. These activities grant students the opportunity to independently construct knowledge, rendering learning far more meaningful than teacher-centric lectures. Thus, the increased learning outcomes achieved by students are a logical consequence of heightened cognitive engagement during the instructional process (Su, Shao, & Zhao, 2022).

This study reinforces numerous previous investigations reporting that the mind mapping method contributes positively to enhancing learning outcomes. Various studies show that mind mapping improves the ability to grasp concepts, strengthens memory retention, boosts creative thinking, and drives active learner participation during instruction. The consistency between these findings and previous research indicates that mind mapping's effectiveness is cross-disciplinary and highly applicable to Islamic Religious Education, which demands a balance between conceptual understanding and the internalization of religious values.

Conclusions

This research proves that the application of the mind mapping method exerts a significant impact on improving the Islamic Religious Education learning outcomes of Class X IPS 5 students at SMA Negeri 1 Deli Tua regarding the *Asmaul Husna* material. This is evidenced by the increase in the students' average learning outcomes from 54.30 during the pre-test stage to 81.96 during the post-test stage, which was subsequently reinforced by statistical testing where the t-value (9.47) exceeded the t-table value (2.04). These findings demonstrate that mind mapping is not only an effective material presentation strategy but is also capable of facilitating learners in organizing, connecting, and understanding religious concepts systematically, thereby yielding more meaningful learning.

The results of this study carry implications for constructivism and meaningful learning theory, affirming that instruction is more effective when learners actively integrate new knowledge into their existing cognitive structures. This research also contributes by broadening the understanding that mind mapping's effectiveness in Islamic Religious Education is not solely indicated by academic achievement gains, but by its capacity to build interconnectivity among concepts, thereby easing the internalization of the *Asmaul Husna* material.

References

Akbar, Mohammad Auliya Rizqy, Izza Safitri, and Evi Fatimatur Rusydiyah. 2024. "Penerapan Metode Pembelajaran Mind Mapping Pendidikan Agama Islam Dalam Perspektif Guru PAI." *Journal of Education Research* 5(2):1899–1910. doi:10.37985/jer.v5i2.1040.

Arif, Muhamad, and Mohd Kasturi Nor Abd Aziz. 2023. "Islamic Religious Education Learning Model in the 21st Century: Systematic Literature Review." *Indonesian Journal of Islamic Education Studies (IJIES)* 6(2):237–62. doi:10.33367/ijies.v6i2.4417.

Arifin Bando, Ushwa Dwi Masrurah, and Hasnidar Hasnidar. 2026. "Application of Mind Mapping in God's Human Material to Integrate Students' Cognitive and Affective Aspects." *Journal of Islamic Education and Intellectual Discourse (JIED)* 2(01):90–105. doi:10.37304/jied.v2i01.25199.

Bryce, T. G. K., and E. J. Blown. 2024. "Ausubel's Meaningful Learning Re-Visited." *Current Psychology* 43(5):4579–98. doi:10.1007/s12144-023-04440-4.

Dhindsa, Harkirat S., Makarimi-Kasim, and O. Roger Anderson. 2011. "Constructivist-Visual Mind Map Teaching Approach and the Quality of Students' Cognitive Structures." *Journal of Science Education and Technology* 20(2):186–200. doi:10.1007/s10956-010-9245-4.

Feng, Rui, Haroon N. Alsager, Zeinab Azizi, and Leeda Sarabani. 2023. "Impact of Mind-Mapping Technique on EFL Learners' Vocabulary Recall and Retention, Learning Motivation, and Willingness to Communicate." *Heliyon* 9(6):e16560. doi:10.1016/j.heliyon.2023.e16560.

Hosaini, Mujamil Qomar, Agus Zaenul Fitri, Akhyak, and Kojin. 2024. "Innovative Learning Strategies for Islamic Religious Education Based on Merdeka Belajar Curriculum in Vocational High Schools." *Al-Hayat: Journal of Islamic Education* 8(3):966–81. doi:10.35723/ajie.v8i3.r587.

Masrurih, and Uthman Shehu Lawal. 2025. "Revitalization of Islamic Story Learning in Islamic Religious Education through the Development of Mind Mapping-Based Teaching Materials." *EDUCARE: Jurnal Ilmu Pendidikan* 4(1):40–52. doi:10.71392/ejip.v4i1.90.

Pratami, Rosmala Sari Putri, Darmayanti Darmayanti, and Safaruddin Yahya. 2025. "The Application of Mind Mapping in Enhancing Students' Understanding of Fiqh on the Requirements of Qurban: A Study in Grade V at MI Jabal Nur." *Journal of English Language and Education* 10(2):383–88. doi:10.31004/jele.v10i2.786.

Rahmawati, Septiana, and Fihris Fihris. 2024. "Application of the Mind Mapping-Assisted PBL Model to Improve the Learning Outcomes of Halal and Haram Animal Fiqh in Madrasah Ibtidaiyah." *Research Journal on Teacher Professional Development* 2(2):114–23. doi:10.21580/rjtpd.v2i2.15538.

Sauwitri, Nadia Eka, Safari, and Baharudin. 2026. "Learning Interest in Islamic Religious Education: Examining the Effectiveness of the Synectics, Mind Maps, and Cooperative Learning (SM2CL) Model." *Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah* 11(2):442–51.

doi:10.24042/tadris.v11i2.28893.
Su, Yu-Sheng, Mingming Shao, and Li Zhao. 2022. "Effect of Mind Mapping on Creative Thinking of Children in Scratch Visual Programming Education." *Journal of Educational Computing Research* 60(4):906–29. doi:10.1177/07356331211053383.
Sutrisno, Sutrisno, and Juli Amalia Nasucha. 2022. "Islamic Religious Education Project-Based Learning Model to Improve Student Creativity." *At-Tadzkir: Islamic Education Journal* 1(1):13–22. doi:10.59373/attadzkir.v1i1.3.
Yan, Xiaofang, and Jungtae Kim. 2023. "The Effects of Schema Strategy Training Using Digital Mind Mapping on Reading Comprehension: A Case Study of Chinese University Students in EFL Context." *Cogent Education* 10(1). doi:10.1080/2331186X.2022.2163139.
Zubaidah, Zubaidah, Prio Utomo, Rustam Samsi Hidayat, and Irwan Satria. 2025. "Efforts of the Guidance Teacher in Improving Elementary School Students' Ability to Analyze the Meaning and Recite Al-Asmaul Al-Husna through Audio-Visual Media." *Southeast Asian Journal of Global Trends and Issues in Education* 1(2):39–48. doi:10.64420/sajgtie.v1i2.404.