Jurnal Hurriah: Jurnal Evaluasi Pendidikan dan Penelitian
Hurriah Journal: Journal of Educational Evaluation and Research
Volume 7, No. 2 (2026) PP 215-227

Jurnal Hurriah: Jurnal Evaluasi Pendidikan dan Penelitian
Hurriah Journal: of Educational Evaluation and Research

Journal homepage: https://academicareview.com/index.php/jh
E-ISSN: 2774-8472 I P-ISSN: 2774-8480 I DOI : 10.56806

Qur'anic Values-Based Deep Learning Approach and Junior High School Students' Mathematics Academic Competency Test Outcomes

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ARTICLE INFO

Article history:
Received: April, 2026
Received in revised from: May, 2026
Accepted: May, 2026
Available online: June, 28, 2026

Keywords: Deep Learning, Qur'anic Values, Academic Competency Test, Mathematics Learning, Qur'an-Memorizing Students

ABSTRACT

This study examines the relationship between a Qur'anic values-based Deep Learning approach and junior high school students' Mathematics Academic Competency Test (ACT) outcomes. The study responds to a critical instructional issue in mathematics education: learning is often reduced to procedural fluency, while contemporary academic assessment requires conceptual understanding, reasoning, reflective judgment, and knowledge transfer. In Islamic educational contexts, this issue is particularly significant because Qur'an-memorizing students possess disciplined learning dispositions that can be pedagogically activated through meaningful, mindful, and joyful learning experiences. This quantitative correlational study involved 40 junior high school students who had memorized at least Juz 30 of the Qur'an. The data consisted of Qur'anic values-based Deep Learning scores and Mathematics ACT scores. Data were analyzed using descriptive statistics, the Shapiro–Wilk normality test, Spearman's rho correlation, and simple linear regression. The findings showed that the Deep Learning score had a mean of 71.00 (SD = 12.82), while the Mathematics ACT score had a mean of 77.33 (SD = 11.74). Since the data were not normally distributed, Spearman's rho was applied. The analysis revealed a very strong and significant positive relationship between the variables ($r_s = 0.991$; $p < 0.001$), with regression explaining 98.2% of the variance in Mathematics ACT outcomes.

1. Introduction

Mathematics education at the junior high school level occupies a strategic position in developing students' logical, systematic, critical, creative, and reflective thinking (Marzuki et al., 2021, 2019). Mathematics is not merely a body of formulas, symbols, and computational procedures; rather, it is an epistemic instrument through which students learn to identify patterns, interpret relationships, construct arguments, evaluate evidence, and make decisions based on reasoned judgment (Alderton, 2025; Santos-Trigo, 2024). In the context of the Mathematics Academic Competency Test (ACT),

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https://doi.org/10.56806/ jh.v7i2.432

students' mathematical ability should not be understood as mechanical proficiency alone, but as a complex academic competence involving conceptual understanding, strategic reasoning, problem interpretation, and the capacity to transfer knowledge across unfamiliar situations (Peraturan Menteri Pendidikan Dasar Dan Menengah Nomor 9 Tahun 2025 Tentang Tes Kemampuan Akademik, 2025; Weigand, H.-G., Trgalová, J., & Tabach, 2024).

A persistent challenge in mathematics instruction is the dominance of surface-oriented learning. In many classrooms, students are trained to reproduce procedures without being sufficiently encouraged to examine why a procedure works, how one concept is connected to another, or how a strategy should be adapted when the structure of a problem change. Such instruction may produce short-term test performance, yet it often generates fragile knowledge that does not transfer well to non-routine tasks (Alderton, 2025; Žakelj, A., Štemberger, T., & Klančar, 2025). This condition is particularly problematic in the context of the ACT because academic competency assessment increasingly requires reasoning, representation, generalization, and reflective problem solving rather than the mere repetition of worked examples (Peraturan Menteri Pendidikan Dasar Dan Menengah Nomor 9 Tahun 2025 Tentang Tes Kemampuan Akademik, 2025).

Recent international scholarship has emphasized the urgency of learning designs that foster deeper forms of engagement. Assessment studies indicate that the quality of assessment systems can shape students' orientation toward deep learning, particularly when assessment tasks require explanation, integration, and reflective application rather than recall alone (Shanina Fawzia, Negin Mirriahi, Carole James, Laura Scharoun, 2024). Similarly, student-centered strategies have been associated with academic growth, critical thinking, creativity, and problem-solving development, thereby challenging the limitations of traditional teacher-centered pedagogy (Bhardwaj, V., Zhang, S., Tan, Y. Q., & Pandey, 2025). In mathematics education, the interdependence among conceptual knowledge, procedural knowledge, and problem-solving ability has also been empirically documented, suggesting that mathematical achievement depends on the integration of understanding, procedures, and strategies rather than on procedural fluency in isolation (Žakelj, A., Štemberger, T., & Klančar, 2025).

The Deep Learning approach provides a relevant conceptual and pedagogical response to this challenge. In the Indonesian educational policy context, Deep Learning is defined as a dignifying approach that creates learning processes characterized by mindful, meaningful, and joyful learning through the integrated cultivation of intellect, heart, feeling, and physical engagement (Isnayanti et al., 2025; M. Fullan, J. Quinn, 2018; Shi & Lan, 2018). This definition is pedagogically significant because it shifts the emphasis from content delivery to holistic learner development. Learning is no longer treated merely as the transfer of knowledge from teacher to student, but as the formation of understanding, values, dispositions, and competencies through carefully designed learning experiences.

The first principle, mindful learning, refers to students' awareness of learning objectives, strategies, cognitive processes, and ethical responsibilities. In mathematics, mindfulness is reflected when students are able to explain why a strategy is chosen, monitor the accuracy of their reasoning, and recognize the limitations of their answers (Widada et al., 2025). The second principle, meaningful learning, refers to students' ability to connect new concepts with prior knowledge, real-life contexts, other disciplines, and personal experience. In mathematics, meaningfulness emerges when students recognize the relevance of patterns, structures, and quantitative relationships beyond textbook exercises (Wilson et al., 2007). The third principle, joyful learning, does not refer to entertainment-based instruction, but to emotionally safe, intellectually engaging, and motivationally supportive learning conditions (Shanina Fawzia, Negin Mirriahi, Carole James, Laura Scharoun, 2024; Wilson et al., 2007). Joyful mathematics learning enables students to take cognitive risks, discuss errors

productively, and experience problem solving as inquiry rather than as a source of fear or failure (Bhardwaj, V., Zhang, S., Tan, Y. Q., & Pandey, 2025; Kementerian Pendidikan Dasar Dan Menengah Republik Indonesia, 2025).

These three principles are operationalized through three deep learning experiences: understanding, applying, and reflecting. Understanding involves the construction of conceptual meaning, the identification of relationships among ideas, and the formation of coherent cognitive schemas. Applying involves the use of concepts, procedures, and strategies to solve problems in varied contexts. Reflecting involves evaluating one's reasoning, interpreting errors, reconsidering strategies, and developing metacognitive awareness. Within this framework, deep learning is not a slogan but a pedagogical architecture: students understand what they learn, apply what they understand, and reflect on how and why their learning matters (Anugraheni, I., Gufron, A., & Purnomo, 2025; "Kementerian Pendidikan Dasar Dan Menengah Republik Indonesia.," 2025; Shanina Fawzia, Negin Mirriahi, Carole James, Laura Scharoun, 2024; Žakelj, A., Štemberger, T., & Klančar, 2025).

In Islamic educational contexts, the Deep Learning approach can be strengthened through Qur'anic values. The Qur'an repeatedly invites human beings to read, think, reflect, observe order, and pursue knowledge. The opening revelation, Surah al-'Alaq [96]: 1–5, places reading and learning at the center of human development. Surah Ali 'Imran [3]: 190–191 emphasizes reflection on the creation of the heavens and the earth, thereby affirming the intellectual and spiritual value of contemplating order and pattern. Surah al-Mujadilah [58]: 11 affirms the elevated status of those who believe and those who are granted knowledge. These scriptural foundations show that learning, reasoning, and reflection are not external to Islamic education; rather, they are intrinsic to its epistemological and moral vision (Abdel Haleem, 2004; Halstead, 2004; Nurdin, A., & Yusuf, 2024; Shihab, 2002).

The integration of Qur'anic values into mathematics instruction must therefore be understood carefully. It should not be reduced to ornamental citation or symbolic Islamization of content. Rather, it should function as an ethical and reflective foundation for mathematical thinking. Values such as honesty, accuracy, perseverance, discipline, orderliness, responsibility, tafakkur, and tadabbur can shape the way students approach mathematical tasks. Honesty prevents academic shortcuts; accuracy supports careful reasoning; perseverance strengthens resilience in solving complex problems; tafakkur encourages thoughtful engagement with patterns and structures; and tadabbur invites students to reflect on meaning, process, and responsibility. In this sense, Qur'anic values can deepen the moral texture of mathematics learning without compromising its disciplinary rigor (Agbaria, 2024; Ahmed, F., & Chowdhury, 2025; Hunter, J., & Hill, 2025; Memon, N. A., Chown, D., & Alkouatli, 2024).

The present study is situated within a distinctive learner context: junior high school students who have memorized at least Juz 30 of the Qur'an. Qur'an memorization requires discipline, repetition, concentration, careful listening, accuracy, self-regulation, and sustained commitment. These learning dispositions are potentially relevant to mathematics achievement, especially in tasks that require procedural care, conceptual persistence, and reflective problem solving. However, Qur'an memorization does not automatically lead to high mathematics achievement. Its potential needs to be pedagogically activated through learning designs that connect religiously grounded dispositions with academic competencies. A Qur'anic values-based Deep Learning approach is proposed as such a bridge.

This study offers three contributions. First, it connects Deep Learning with academic evaluation by examining its relationship with Mathematics ACT outcomes rather than with ordinary classroom scores alone. Second, it foregrounds Qur'an-memorizing students as a distinctive learner group

whose religious learning discipline may interact meaningfully with academic learning processes. Third, it conceptualizes Qur'anic values not as external additions to mathematics instruction, but as ethical, cognitive, and reflective resources that can support deeper mathematical engagement. Based on these considerations, this study aims to analyze the relationship between the Qur'anic values-based Deep Learning approach and junior high school students' Mathematics Academic Competency Test outcomes.

2. Methodology

2.1 Research Design

This study employed a quantitative approach with a correlational research design. The design was selected because the study aimed to examine the direction and strength of the relationship between the Qur'anic values-based Deep Learning approach as the independent variable and Mathematics Academic Competency Test (ACT) outcomes as the dependent variable. The correlational design was appropriate because the study did not manipulate instructional conditions through experimental and control groups; rather, it analyzed empirical data obtained from a naturally occurring learning context. Consequently, the findings should be interpreted as evidence of association and predictive contribution within the model, not as definitive causal proof (Creswell, J. W., & Creswell, 2023; Louis Cohen et al., 2007; Naser, 2024).

2.2. Research Subjects and Context

The participants were 40 junior high school students in Langsa City, Aceh, Indonesia, who had memorized at least Juz 30 of the Qur'an. All participants took part in mathematics learning designed through a Qur'anic values-based Deep Learning approach and subsequently completed the Mathematics ACT. The criterion of memorizing at least Juz 30 was used to ensure that the sample represented students with sustained Qur'anic memorization experience. This learner profile was considered important because Qur'an memorization involves discipline, repetition, accuracy, concentration, and self-regulated learning dispositions that may be relevant to mathematics learning and academic assessment. The sampling technique used was saturated sampling because all students in the target learning group who met the criterion were included as research respondents.

2.3 Research Variables

The study consisted of two variables. The independent variable was the Qur'anic values-based Deep Learning approach, represented by scores describing the extent to which mathematics learning embodied conceptual understanding, reasoning, contextual application, reflection, collaboration, and Qur'anic values such as honesty, discipline, perseverance, orderliness, responsibility, tafakkur, and tadabbur. The dependent variable was the Mathematics Academic Competency Test outcome, represented by students' ACT scores in mathematics. Both variables were treated as numerical data.

2.4 Research Instruments

The Deep Learning instrument was developed based on the theoretical indicators of deep learning and Qur'anic values relevant to mathematics learning. The Deep Learning indicators included active engagement, conceptual understanding, connection-making, problem solving, application, collaboration, and reflection. The Qur'anic values indicators included academic honesty, carefulness, perseverance, responsibility, disciplined effort, reflective thinking, and awareness of order. Mathematics ACT scores were obtained from students' academic competency assessment in mathematics, expressed on a scale from 0 to 100.

2.5 Data Collection Procedure

Data collection was conducted in several stages. First, the teacher implemented mathematics learning using a Qur'anic values-based Deep Learning approach. Second, students participated in learning activities organized around contextual problems, guiding questions, strategic discussions, reasoning exercises, collaborative problem solving, and structured reflection. Third, Qur'anic values were integrated proportionally through reflective prompts, ethical emphasis, and learning discipline rather than through forced doctrinal insertion into mathematical content. Fourth, students completed the Mathematics ACT. Fifth, the researcher collected the Deep Learning scores and Mathematics ACT scores from 40 students and prepared the data for statistical analysis.

2.6 Data Analysis Technique

Data were analyzed using IBM SPSS Statistics version 32 through descriptive and inferential statistics (Field, 2024). Descriptive statistics were used to describe the characteristics of the research data by calculating the minimum value, maximum value, mean, and standard deviation of the Qur'anic values-based Deep Learning scores and Mathematics ACT outcomes (Creswell, J. W., & Creswell, 2023; Field, 2024).

Inferential statistics were used to examine the relationship between variables and the predictive contribution of the independent variable to the dependent variable. The Shapiro–Wilk test was first conducted to examine data normality because the sample size was fewer than 50 (Ghasemi, A., & Zahediasl, 2012). Since the data were not normally distributed, Spearman's rho was used as the main correlation test. Simple linear regression was then conducted as a supporting analysis to examine the predictive contribution of the Qur'anic values-based Deep Learning approach to Mathematics ACT outcomes. The significance criterion was set at $p < 0.05$ (Cohen, J., Cohen, P., West, S. G., & Aiken, 2013; Field, 2024).

3. Results

3.1 Descriptive Statistics

The descriptive analysis showed that the Qur'anic values-based Deep Learning scores of the 40 students ranged from 50 to 90, with a mean of 71.00 and a standard deviation of 12.82. The Mathematics ACT scores ranged from 58 to 95, with a mean of 77.33 and a standard deviation of 11.74. These results indicate that the implementation of the Qur'anic values-based Deep Learning approach was generally in a good category, while the students' Mathematics ACT outcomes tended to be relatively favorable, as shown in Table 1.

Table 1. Descriptive Statistics of the Research Variables.

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Qur'anic Values-Based Deep Learning Score	40	50	90	71.00	12.82
Mathematics Academic Competency Test Score	40	58	95	77.33	11.74

From an evaluative perspective, the mean Mathematics ACT score of 77.33 suggests that the Qur'an-memorizing students in this sample tended to demonstrate a favorable level of academic competence in mathematics. Furthermore, 70% of the students obtained scores of 70 or higher, while 50% obtained scores of 80 or higher. This distribution should be interpreted cautiously, as it describes achievement patterns within the present sample rather than providing a basis for broad

generalization. Nevertheless, the data indicate that a considerable proportion of the students achieved Mathematics ACT scores within the good to excellent range, as shown in the following Table 2.

Table 2. Distribution of Mathematics ACT Scores

Category	Score Range	Frequency	Percentage
Needs Intensive Support	< 60	4	10.0%
Adequate	60-69	8	20.0%
Good	70-79	8	20.0%
Very Good	80-89	11	27.5%
Excellent	90-100	9	22.5%

3.2 Inferential Statistical Test

Before conducting the main correlation analysis, the data were first examined through a normality test. This procedure was necessary to determine whether the data met the assumption required for parametric analysis. Since the sample consisted of 40 students, the Shapiro–Wilk test was used as an appropriate normality test. The results of this test served as the basis for deciding whether Pearson's correlation or Spearman's rho should be applied in the subsequent inferential analysis.

3.2.1. Normality Test

The Shapiro–Wilk normality test showed that the Deep Learning score had a significance value of 0.021, while the Mathematics ACT score had a significance value of 0.007. Since both significance values were lower than 0.05, the data were considered not normally distributed. Therefore, the main correlation analysis used Spearman's rho rather than Pearson's product-moment correlation.

Table 3. Results of the Shapiro–Wilk Normality Test

Variable	Statistic	Sig.	Decision
Qur'anic Values-Based Deep Learning Score	0.933	0.021	Not normally distributed
Mathematics Academic Competency Test Score	0.919	0.007	Not normally distributed

These results indicate that the selection of the analytical technique should consider the distribution characteristics of the data. Since the assumption of normality was not met, the use of Spearman's rho was an appropriate choice. This decision strengthens the procedural validity of the study because the analysis was not forced to use a parametric approach.

3.2.2. Spearman's rho Correlation Test

The Spearman's rho correlation test produced a correlation coefficient of rs = 0.991 with p < 0.001. This result indicates a very strong, positive, and statistically significant relationship between the Qur'anic values-based Deep Learning approach and students' Mathematics ACT outcomes. In substantive terms, the higher the quality of students' deep, reflective, and Qur'anic-values-oriented learning experience, the higher their tendency to achieve strong ACT outcomes in mathematics, as shown in Table 4.

Table 4. Results of Spearman's rho Correlation Test

Variables	Correlation Coefficient	Sig. (2-tailed)	N
Deep Learning Score and Mathematics ACT Score	0.991	0.000	40

3.2.3 Simple Linear Regression

Simple linear regression was conducted as a supporting analysis. The model produced R = 0.991 and R Square = 0.982, indicating that the Qur'anic values-based Deep Learning approach explained 98.2% of the variance in Mathematics ACT scores within the research model, while the remaining 1.8% was explained by factors outside the model, as shown in Table 5.

Table 5. Model Summary of Simple Linear Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.991	0.982	0.982	1.589

The regression coefficient analysis showed that the constant was 12.893, while the slope coefficient for the Qur'anic values-based Deep Learning score was 0.907, as shown in Table 6. Thus, the regression equation was:

Y = 12.893 + 0.907X

Table 6. Regression Coefficients

Model	B	Std. Error	t	Sig.
Constant	12.893	1.431	9.009	0.000
Qur'anic Values-Based Deep Learning Score	0.907	0.020	45.732	0.000

The regression equation, Y = 12.893 + 0.907X, indicates that, within the fitted linear model, a one-point increase in the Qur'anic values-based Deep Learning score was associated with an estimated 0.907-point increase in the Mathematics ACT score. The regression coefficient was statistically significant (p < 0.001), suggesting that the Deep Learning score provided a significant predictive contribution to Mathematics ACT outcomes in this sample. However, given the correlational and non-experimental nature of the study, this finding should be interpreted as evidence of a strong statistical association and model-based prediction, rather than as evidence of a causal effect. Therefore, the result indicates that the Qur'anic values-based Deep Learning approach is strongly related to

Mathematics ACT performance, but it does not establish that the approach directly caused the observed ACT outcomes.

4. Discussion

The findings of this study indicate a very strong and statistically significant association between the Qur'anic values-based Deep Learning approach and Mathematics Academic Competency Test outcomes among junior high school students who had memorized at least Juz 30 of the Qur'an. Statistically, the Spearman correlation coefficient should be interpreted as evidence that higher ranks of Qur'anic values-based Deep Learning scores tended to correspond with higher ranks of Mathematics ACT scores in this sample. However, because this study used a correlational and non-experimental design, the result should not be read as evidence that the learning approach directly caused the observed ACT outcomes. Correlational and regression analyses can support claims of association and prediction, but causal interpretation requires stronger research designs, controls, and inferential assumptions (Creswell, J. W., & Creswell, 2023; Naser, 2024).

The exceptionally high correlation coefficient also requires careful interpretation. In educational research, student achievement is rarely explained by a single instructional factor; it is usually shaped by an interaction of prior knowledge, motivation, family support, teacher quality, assessment familiarity, school culture, and students' psychological conditions. Therefore, the strength of the relationship found in this study should be understood as a strong empirical pattern within a specific sample and learning context, rather than as a universal estimate for all Qur'an-memorizing students. This cautious interpretation is important because large-scale and educational assessment studies repeatedly warn that statistical association, even when strong, should not be equated with causal explanation without appropriate design and evidence (Field, 2024; Naser, 2024; Nurdin, A., & Yusuf, 2024).

The regression analysis provides further support for this cautious interpretation. The R Square value of 0.982 indicates that 98.2% of the variance in Mathematics ACT scores was explained by the Qur'anic values-based Deep Learning score within the fitted linear model. Although this result suggests a very strong predictive association in the present dataset, it is unusually high for educational research and should therefore be interpreted with methodological restraint. Such a result may reflect the close alignment between the learning indicators and the ACT outcome, but it may also be influenced by sample homogeneity, measurement proximity, contextual specificity, or other unmeasured factors. Thus, the regression result should be viewed as model-based prediction within this sample, not as a definitive causal estimate (Cohen, J., Cohen, P., West, S. G., & Aiken, 2013; Field, 2024; Marzuki et al., 2019).

Substantively, the findings suggest that the academic performance of Qur'an-memorizing students cannot be explained merely by memorization discipline. Qur'an memorization may cultivate valuable learning dispositions such as repetition, concentration, accuracy, self-regulation, sustained attention, and perseverance. Nevertheless, these dispositions do not automatically become mathematical competence. They require a pedagogical environment that transforms discipline into conceptual understanding, repetition into reasoning, and religious commitment into reflective academic engagement. A Qur'anic values-based Deep Learning approach appears to provide such an instructional bridge by connecting disciplined learning habits with understanding, application, and reflection (Memon, N. A., Chown, D., & Alkouatli, 2024; Shanina Fawzia, Negin Mirriahi, Carole James, Laura Scharoun, 2024).

This interpretation is consistent with recent scholarship on deep learning and assessment. Fawzia and Karim (2024) show that deep learning is associated with learning environments, course design, course content, and assessment systems that encourage explanation, integration, and meaningful

engagement rather than surface-level recall. This is relevant to the present study because the Mathematics ACT requires students to interpret problems, connect concepts, select strategies, and evaluate answers. The findings therefore suggest that students who experience deeper and more reflective learning may be better positioned to engage with assessment tasks that demand reasoning rather than mechanical reproduction (Shanina Fawzia, Negin Mirriahi, Carole James, Laura Scharoun, 2024; Žakelj, A., Štemberger, T., & Klančar, 2025).

The strength of the relationship can also be understood through the alignment between the learning approach and the assessment construct. Mathematics ACT outcomes are not merely products of procedural fluency; they involve conceptual understanding, strategic reasoning, representation, and reflective judgment. These competencies correspond closely to the three deep learning experiences: understanding, applying, and reflecting. Understanding supports the construction of conceptual meaning; applying enables students to use mathematical knowledge across varied contexts; and reflecting allows students to examine the validity, efficiency, and meaning of their reasoning (Marzuki et al., 2021, 2022). Recent mathematics education research similarly shows that conceptual knowledge, procedural knowledge, and problem-solving ability are interdependent dimensions of mathematical achievement (Žakelj, A., Štemberger, T., & Klančar, 2025).

The Qur'anic values dimension gives this framework a deeper ethical and spiritual foundation. In Islamic education, knowledge is not separated from moral responsibility, reflective awareness, and the formation of the whole person. The Qur'an's emphasis on reading, thinking, observing, and reflecting provides an epistemological basis for learning as responsible inquiry. In a mathematics classroom, these values can be translated into careful reasoning, respect for evidence, intellectual humility, disciplined effort, and awareness of order. Recent work on Islamic teacher education also emphasizes that Islamically grounded pedagogy should connect knowledge, ethical formation, identity, and educational practice rather than treating religion as a merely symbolic addition to schooling (Memon, N. A., Chown, D., & Alkouatli, 2024; Shihab, 2002).

The integration of Qur'anic values should therefore not be understood as replacing mathematical rigor with religious sentiment. Rather, it provides an ethical architecture for rigorous learning. Honesty strengthens academic integrity during problem solving; accuracy supports procedural and conceptual precision; discipline sustains effort in complex tasks; responsibility encourages students to verify their answers; tafakkur deepens attention to patterns, structures, and relations; and tadabbur encourages students to reflect not only on the answer but also on the process and meaning of learning. This interpretation is aligned with contemporary discussions of Islamic pedagogy, which stress the need for coherent educational foundations that integrate moral, cognitive, and spiritual development (Ahmed, F., & Chowdhury, 2025; Memon, N. A., Chown, D., & Alkouatli, 2024).

The learner profile of Qur'an-memorizing students is central to this interpretation. Memorizing Juz 30 requires repeated practice, auditory precision, sequence retention, correction of errors, and perseverance over time. These dispositions may be relevant to mathematics learning, especially in tasks that require systematic procedures, conceptual sequencing, and sustained attention. However, transfer from Qur'an memorization to mathematics learning should not be assumed automatically. A student may be disciplined in memorization but still struggle with mathematical abstraction if instruction remains procedural and disconnected. The Deep Learning approach helps activate these dispositions pedagogically by encouraging students to understand, apply, and reflect (Bhardwaj, V., Zhang, S., Tan, Y. Q., & Pandey, 2025).

The findings also have implications for graduate profile development within the Deep Learning framework. The purpose of learning is not limited to test performance; it also includes the formation of holistic competencies and character. Mathematics learning can support faith and devotion to God

Almighty when students understand learning as an ethical and spiritual responsibility. It can strengthen citizenship when students learn fairness, evidence-based reasoning, and responsibility in collaborative problem solving. Critical thinking is developed through analysis and justification; creativity emerges through multiple strategies and representations; collaboration grows through peer explanation; independence develops through self-monitoring; health is supported when learning reduces anxiety; and communication is strengthened when students explain mathematical ideas clearly and respectfully (Bhardwaj, V., Zhang, S., Tan, Y. Q., & Pandey, 2025; "Kementerian Pendidikan Dasar Dan Menengah Republik Indonesia.," 2025).

From an evaluation perspective, this study highlights the importance of alignment among learning objectives, instructional processes, values, and assessment. If the Mathematics ACT is designed to measure academic competence, then instruction must cultivate the competencies being assessed. If mathematics learning is expected to form critical, reflective, and ethically grounded learners, then assessment preparation should move beyond repetitive drilling. In this respect, the Qur'anic values-based Deep Learning approach offers a coherent instructional model because it aligns cognitive competence, moral disposition, and assessment readiness (Peraturan Menteri Pendidikan Dasar Dan Menengah Nomor 9 Tahun 2025 Tentang Tes Kemampuan Akademik, 2025; Sukamto, A., Bahrani, B., & Nurvayanti, 2026).

Practically, the findings imply that schools serving Qur'an-memorizing students should not separate tahfiz culture from academic learning. The discipline developed through Qur'an memorization can be connected to mathematics learning through explicit pedagogical design. Teachers may use reflective prompts, contextual problems, ethical discussion, metacognitive questioning, collaborative reasoning, and formative assessment to help students transfer disciplined religious learning habits into academic problem solving. However, the integration must remain proportional, conceptually relevant, and pedagogically rigorous so that Qur'anic values strengthen mathematical thinking rather than replace mathematical explanation (Memon, N. A., Chown, D., & Alkouatli, 2024; Nurdin, A., & Yusuf, 2024; Shihab, 2002).

Despite these contributions, several limitations should be acknowledged. The sample consisted of only 40 students from a specific learning context; therefore, the findings should not be generalized without caution. The correlational design does not permit definitive causal claims. The study also did not include mediator or moderator variables such as prior mathematics ability, memorization quality, motivation, parental support, self-regulated learning, mathematics self-efficacy, teacher effects, or test familiarity. Future studies should use experimental or quasi-experimental designs, involve comparison groups, include larger and more diverse samples, and examine possible mediating or moderating variables to provide a more comprehensive explanation of how Qur'anic memorization, Qur'anic values-based Deep Learning, and mathematics achievement interact (Creswell, J. W., & Creswell, 2023; Naser, 2024).

5. Conclusions

This study concludes that the Qur'anic values-based Deep Learning approach is very strongly, positively, and statistically significantly associated with Mathematics Academic Competency Test outcomes among junior high school students who had memorized at least Juz 30 of the Qur'an. The descriptive findings indicate that both the Qur'anic values-based Deep Learning scores and Mathematics ACT scores were generally positioned within favorable categories. A considerable proportion of students also achieved scores within the very good and excellent ranges, suggesting that Qur'an-memorizing students in this sample demonstrated promising academic performance in mathematics.

Inferentially, the Spearman's rho correlation coefficient of 0.991 with $p < 0.001$ indicates a very strong monotonic association between the two variables. This means that students with higher Qur'anic values-based Deep Learning scores tended to obtain higher Mathematics ACT scores. The simple linear regression model, expressed as Y = 12.893 + 0.907X, produced an R Square value of 0.982, indicating that 98.2% of the variance in Mathematics ACT outcomes was explained by the Deep Learning score within the fitted model. However, this result must be interpreted with methodological caution. Because the study employed a correlational and non-experimental design, the findings should be understood as evidence of a strong statistical association and model-based prediction, not as definitive evidence of causal effect.

Substantively, the findings suggest that the academic performance of Qur'an-memorizing students may be better understood when Qur'anic values are pedagogically connected to deep mathematical learning. Qur'an memorization may cultivate disciplined learning dispositions such as perseverance, concentration, accuracy, self-regulation, and sustained commitment; however, these dispositions do not automatically produce high mathematical achievement. They need to be activated through instructional designs that transform discipline into conceptual understanding, repetition into reasoning, and religious commitment into reflective academic engagement.

The study also implies that mathematics learning in Islamic educational contexts should not be reduced to procedural test preparation. Instead, it should be designed as an integrated process of intellectual, ethical, and spiritual formation. A learning process that is mindful, meaningful, and joyful, and that develops the experiences of understanding, applying, and reflecting, has the potential to support not only Mathematics ACT readiness but also broader graduate profile dimensions, including faith and devotion to God Almighty, citizenship, critical thinking, creativity, collaboration, independence, health, and communication. Nevertheless, further studies involving larger samples, comparison groups, and experimental or quasi-experimental designs are needed to examine whether and how Qur'anic values-based Deep Learning contributes to mathematics achievement across broader educational contexts.

Acknowledgement
This research was independently funded by the author and did not receive any specific grant from public, commercial, or non-profit funding agencies.

References

Abdel Haleem, M. A. S. (2004). *The Qur'an: A new translation*. Oxford University Press.

Agbaria, A. (2024). Education for religion: An Islamic perspective. *Religions*, *15*(3), 309. https://doi.org/10.3390/rel15030309

Ahmed, F., & Chowdhury, S. (2025). Rethinking contemporary schooling in Muslim contexts: An Islamic conceptual framework for reconstructing K–12 education. *Educational Philosophy and Theory*, *57*(2), 152–165. https://doi.org/10.1080/00131857.2024.2411325

Alderton, J. (2025). The construction of mathematical reasoning as a pedagogical object. *Educational Studies in Mathematics*.

Anugraheni, I., Gufron, A., & Purnomo, Y. W. (2025). The impact of realistic problem-based learning on mathematical connection abilities: Evidence from elementary schools in Indonesia. *Cogent Education*, *12*(1), 1–17. https://doi.org/10.1080/2331186X.2025.2523078

Bhardwaj, V., Zhang, S., Tan, Y. Q., & Pandey, V. (2025). Redefining Learning: Student-Centered Strategies for Academic and Personal Growth. *Frontiers in Education*, *10*(1518602). https://doi.org/10.3389/feduc.2025.1518602

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). Applied multiple regression/correlation analysis for the behavioral sciences. *Routledge*. https://doi.org/10.4324/9780203774441

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed. (Ed.)). SAGE Publications.

Field, A. (2024). *Discovering statistics using IBM SPSS statistics* (6th ed). SAGE Publications.

Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. *International Journal of Endocrinology and Metabolism*, *10*(2), 486–489. https://doi.org/10.5812/ijem.3505

Halstead, J. M. (2004). An Islamic concept of education. *Comparative Education*, *40*(5), 517–529. https://doi.org/10.1080/0305006042000284510

Hunter, J., & Hill, J. L. (2025). Exploring mathematical wellbeing across cultures: Insights from diverse students. *Mathematics Education Research Journal*. https://doi.org/10.1007/s13394-024-00500-5

Isnayanti, A. N., Putriwanti, Kasmawati, & Rahmita. (2025). Integrasi Pembelajaran Mendalam (Deep Learning) dalam Kurikulum Sekolah Dasar: Tantangan dan Peluang. *CJPE: Cokroaminoto Juornal of Primary Education*, *8*(2), 911–920.

Kementerian Pendidikan Dasar dan Menengah Republik Indonesia. (2025). *Pembelajaran Mendalam Menuju Pendidikan Bermutu Untuk Semua*.

Louis Cohen, Manion, L., & Morrison, K. (2007). Research Methods in Education. In *Taylor & Francis e-Library* (Sixth edit, Issue August). Routledge.

M. Fullan, J. Quinn, and J. M. (2018). *Deep Learning: Engage the World Change the World*. Corwin.

Marzuki, Cahya, E., & Wahyudin. (2019). Creative thinking ability based on learning styles reviewed from mathematical communication skills. *Journal of Physics: Conference Series*, *1315*(1). https://doi.org/10.1088/1742-6596/1315/1/012066

Marzuki, M., Negara, H. R. P., & Wahyudin, W. (2022). Enhancement of students' critical thinking ability in the algebraic function derivatives application based on student learning styles during online learning. *Al-Jabar : Jurnal Pendidikan Matematika*, *13*(1), 139–152. https://doi.org/10.24042/ajpm.v13i1.12062

Marzuki, Wahyudin, Cahya, E., & Juandi, D. (2021). *Students ' Critical Thinking Skills in Solving Mathematical Problems ; A Systematic Procedure of Grounded Theory Study*. *14*(4), 529–548.

Memon, N. A., Chown, D., & Alkouatli, C. (2024). Laying foundations for Islamic teacher education. *Education Sciences*, *14*(10), 1046. https://doi.org/10.3390/educsci14101046

Naser, M. Z. (2024). Causality and causal inference for engineers: Beyond correlation and regression. *WIREs Data Mining and Knowledge Discovery*, *14*(3). https://doi.org/10.1002/widm.1533

Nurdin, A., & Yusuf, M. (2024). Integrating Qur'anic values into contemporary Islamic education: Moral, cognitive, and pedagogical implications. *Journal of Islamic Studies and Culture*, *12*(1), 45–49.

Peraturan Menteri Pendidikan Dasar dan Menengah Nomor 9 Tahun 2025 tentang Tes Kemampuan Akademik, 9 (2025).

Santos-Trigo, M. (2024). Problem solving in mathematics education: Tracing its foundations and current research-practice trends. *ZDM–Mathematics Education*, *56*, 211–222. https://doi.org/10.1007/s11858-024-01578-8

Shanina Fawzia, Negin Mirriahi, Carole James, Laura Scharoun, and S. M. (2024). Exploring the connection between deep learning and assessment in higher education. *Humanities and Social Sciences Communications*, *11*(126). https://doi.org/10.1057/s41599-023-02542-9

Shi, H., & Lan, P. (2018). Exploring the factors influencing high school students ' deep learning of

English in blended learning environments. *Frontiers in Education*, *9*(1339623). https://doi.org/10.3389/feduc.2024.1339623

Shihab, M. Q. (2002). *Tafsir al-Mishbah: Pesan, kesan dan keserasian Al-Qur'an*. Lentera Hati.

Sukamto, A., Bahrani, B., & Nurvayanti, N. (2026). Tes Kemampuan Akademik (TKA) sebagai inovasi evaluasi pendidikan: Sebuah tinjauan naratif. *Journal of Instructional and Development Researches*, *6*, 1. https://doi.org/10.53621/jider.v6i1.695

Weigand, H.-G., Trgalová, J., & Tabach, M. (2024). Mathematics teaching, learning, and assessment in the digital age. *ZDM–Mathematics Education*, *56*, 525–541. https://doi.org/10.1007/s11858-024-01612-9

Widada, W., Umam, K., Nugroho, Z., Falaq, A., Anggoro, D., Herawaty, D., Jumri, R., Dewarif, S., & Anggoro, T. (2025). Jurnal Math Educator Nusantara. *Jurnal Math Educator Nusantara*, *11*(2025), 1–20.

Wilson, T., Colby, S. A., Smith, T. W., & Colby, S. A. (2007). *Teaching for Deep Learning*. *80*(5), 205–210.

Žakelj, A., Štemberger, T., & Klančar, A. (2025). An empirical study on basic and conceptual knowledge, procedural knowledge and problem solving among primary school students. *International Journal of Instruction*, *18*(4), 627–650. https://doi.org/10.29333/iji.2025.18434a