

The Effect of Digital Literacy, Parental Involvement, Religious Learning Environment, and Teaching Methods on Students' Achievement in Islamic Education

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Abstract

This study aims to examine the effect of digital literacy, parental involvement, religious learning environment, and teaching methods on students' achievement in Islamic education. Employing a quantitative explanatory research design, data were collected from 250 students enrolled in Islamic education subjects through structured questionnaires and academic documentation. The data were analyzed using descriptive statistics, classical assumption tests, and multiple linear regression analysis. The results indicate that digital literacy, parental involvement, religious learning environment, and teaching methods each have a positive and significant effect on students' academic achievement. Simultaneously, these variables explain 53.9% of the variance in students' achievement. Among the independent variables, the religious learning environment has the most dominant influence, followed by parental involvement, teaching methods, and digital literacy. These findings suggest that students' academic success in Islamic education is shaped by an integrated ecosystem that combines technological competence, family engagement, supportive spiritual climate, and effective pedagogical strategies. The study highlights the importance of strengthening digital skills while maintaining value-based educational environments to enhance academic outcomes in Islamic education institutions.

Keywords: Digital Literacy, Parental Involvement, Religious Learning Environment, Teaching Methods, Students' Achievement, Islamic Education.

1. Introduction

Education in the 21st century is rapidly evolving under the influence of globalization and digital transformation, requiring both students and educators to adapt to new competencies, tools, and environments. Islamic education, as an integral part of holistic moral and academic formation, is no exception to these shifts. Among the many determinants that influence students' academic achievement in Islamic education contexts, digital literacy plays a pivotal role in fostering students' capacity to navigate, evaluate, and utilize digital information meaningfully within religious and educational settings. Digital literacy, defined as a set of competencies enabling effective and ethical use of digital tools, has been shown to strengthen students' analytical capabilities and information evaluation, particularly in technology-supported religious education (Rivai et al., 2025). Studies indicate that enhancing digital literacy enhances students' ability to process religious content critically and supports broader



academic engagement (Dewi et al., 2025; Sukmawati et al., 2025), demonstrating its vital influence in the modern Islamic educational landscape.

Beyond digital competencies, parental involvement remains a foundational variable that significantly impacts students' learning outcomes. Research from diverse educational contexts underscores that active parental engagement in children's learning positively correlates with academic achievement, character development, and moral formation (Alfiyanto et al., 2025). In Islamic education, parental involvement assumes both educational and spiritual significance; parents not only provide academic support but also model religious behaviors, strengthen moral character, and reinforce Islamic values at home (Nida, Rena, & Pahrurroji, 2025). Literature reviews focused on parental engagement in Islamic education find that parents who actively participate in their children's schooling, including support for religious literacy programs, contribute to higher student competence, engagement, and achievement (Afif Alfiyanto et al., 2025). Thus, exploring how parental involvement influences student outcomes within Islamic education remains essential, especially as families' educational roles intersect with school-based learning.

Another dimension that contributes to the effectiveness of Islamic education is the religious learning environment. The learning environment shaped by religious values, practices, and support systems plays a central role in how students engage cognitively and spiritually with religious content. A positive religious learning environment fosters internalization of Islamic principles, encourages ethical behavior, and nurtures intrinsic motivation to learn (Afif Alfiyanto et al., 2025). Furthermore, religious learning environments that integrate moral support, encouragement, and structured religious activities provide students with a sense of belonging and purpose, which are linked to improved academic performance and enhanced personal development. Although research on religious learning environments specifically within Islamic education is comparatively limited, broader educational studies suggest that environments that promote supportive, value-oriented atmospheres enable students to engage more deeply with academic content and achieve higher learning outcomes.

Teaching methods also represent a critical pedagogical factor influencing students' academic success. Effective teaching practices—especially those tailored to students' needs, contextualized within religious education, and incorporating innovative and interactive strategies—are shown to significantly affect students' engagement, comprehension, and achievement. Pedagogical research underscores that student-centered and active learning approaches, including collaborative projects, technology-integrated instruction, and interactive religious learning activities, are more effective than traditional teacher-centered methods (Gunawan et al., 2024). Moreover, in religious education settings, innovative practices that utilize digital media and contextualized religious learning materials have been found to enhance students' understanding of religious concepts and learning motivation (Gunawan et al., 2024; Linda Nabila et al., 2025). It is therefore crucial to investigate how different teaching methods contribute to students' academic achievement in Islamic education settings, as pedagogical choices may either reinforce or hinder students' learning processes.

Moreover, the intersection among these variables—digital literacy, parental involvement, religious learning environment, and teaching methods—holds particular relevance in Islamic educational contexts where spiritual, cultural, and academic demands intersect. While digital

literacy equips students with modern skills necessary for critical engagement with religious content in digital spaces, parental involvement and religious learning environments provide the moral and value-based frameworks that shape students' attitudes toward learning. Simultaneously, teaching methods operationalize the curriculum and educational principles, serving as the mechanism through which cognitive and spiritual learning goals are achieved. Together, these variables form a complex educational ecosystem influencing students' academic achievement.

Despite extensive research on each factor in broader educational settings, limited empirical studies have simultaneously examined the combined effects of digital literacy, parental involvement, religious learning environment, and teaching methods specifically in Islamic education settings. Most existing literature either focuses on digital competencies (Dewi et al., 2025; Rivai et al., 2025) or the role of parental involvement (Afif Alfiyanto et al., 2025; Nida et al., 2025) or explores teaching innovations (Gunawan et al., 2024; Linda Nabila et al., 2025) without integrating religious learning environments as a separate but related influence on student achievement. Research that integrates these variables is essential to provide a holistic understanding of how contemporary educational dynamics influence student outcomes in Islamic education, particularly in an era where digital transformation intersects with religious value transmission.

Furthermore, understanding these dynamics is crucial for educational policymakers, curriculum developers, and educators who seek to design and implement evidence-based strategies that improve academic achievement while preserving the core values of Islamic education. Identifying how digital literacy contributes to students' critical thinking in religious contexts can help educators adopt technology-enhanced methods that are both pedagogically effective and consistent with Islamic values. Similarly, recognizing the impact of parental involvement in reinforcing students' academic and spiritual development can enable schools to design family engagement programs that support student achievement more effectively. Additionally, acknowledging the role of the religious learning environment in promoting value-oriented educational experiences can inform the development of supportive educational settings that enhance both academic performance and moral development.

Given the importance of these interconnected variables, this study seeks to explore the collective and individual effects of digital literacy, parental involvement, religious learning environment, and teaching methods on students' academic achievement in Islamic education. By employing a comprehensive research design that incorporates quantitative and qualitative measures, this research aims to fill existing gaps in the literature and contribute to the development of more effective, culturally grounded educational practices. The findings of this study are intended to provide empirical insights that support educational improvements, foster student success, and inform future research in Islamic educational contexts.

The primary objective of this research is to investigate the effect of digital literacy, parental involvement, religious learning environments, and teaching methods on students' academic achievement in Islamic education. Specifically, this study aims to assess how students' competencies in digital literacy interact with pedagogical strategies and parental engagement to influence their understanding and performance in Islamic education. Additionally, it seeks to explore the role of the religious learning environment as a foundational context shaping students' motivation, values, and academic progress. By identifying the

relative contributions of these factors, the study intends to offer comprehensive evidence that supports the design of effective, value-driven, and technology-enriched educational practices that enhance student success in Islamic education.

2. Literature Review and Hypothesis Development

2.1. Digital Literacy and Students' Achievement in Islamic Education

Digital literacy has emerged as a fundamental competency in 21st-century education, encompassing the ability to access, evaluate, analyze, and ethically use digital information. In Islamic education contexts, digital literacy extends beyond technical skills to include critical engagement with religious content, online religious discourse, and digital Qur'anic and Hadith resources. Recent studies indicate that digital literacy strengthens students' analytical thinking and improves their capacity to evaluate information validity, particularly in technology-integrated religious education (UNESCO, 2023; Rivai et al., 2025).

In Islamic education, digital platforms are increasingly used to deliver instructional materials, facilitate discussions, and provide access to classical and contemporary Islamic scholarship. Dewi et al. (2025) emphasize that digital-based Islamic education management enhances students' engagement and literacy development. Similarly, Sukmawati et al. (2025) argue that teachers' support in cultivating digital competencies significantly improves students' understanding of religious content and overall academic performance. These findings align with broader educational research suggesting that digital literacy positively correlates with academic achievement due to improved information processing, independent learning skills, and collaborative learning opportunities (OECD, 2023).

However, the effectiveness of digital literacy depends on students' ability to critically assess online religious information, which may vary in credibility. In Islamic education, misinformation or misinterpretation of religious texts can influence students' understanding. Therefore, fostering digital literacy is essential not only for academic success but also for maintaining doctrinal accuracy and ethical reasoning. Given the increasing reliance on digital tools in educational institutions, digital literacy is expected to positively influence students' achievement in Islamic education.

H1: Digital literacy has a positive and significant effect on students' achievement in Islamic education.

2.2. Parental Involvement and Students' Achievement in Islamic Education

Parental involvement has long been recognized as a critical determinant of students' academic success. Contemporary research confirms that parental engagement in educational activities—such as supervising homework, communicating with teachers, and providing emotional support—positively affects students' cognitive and behavioral outcomes (UNICEF, 2023). In Islamic education, parental involvement carries an additional dimension, as parents are primary agents in transmitting religious values and practices.

Afif Alfianto et al. (2025) highlight that active parental participation in Islamic schooling fosters stronger religious character formation and academic competence. Nida et al. (2025) further demonstrate that parental involvement in literacy programs within Islamic schools significantly enhances students' reading comprehension and religious understanding.

These findings suggest that parental guidance reinforces school-based instruction, creating continuity between home and school religious learning environments.

Moreover, Islamic teachings emphasize the responsibility of parents in educating their children morally and spiritually. When parents actively engage in their children's Islamic education—through joint prayer, Qur'anic recitation, and discussions of religious teachings—students tend to internalize religious values more deeply. This internalization may increase intrinsic motivation and commitment to academic achievement.

Recent empirical studies also show that students whose parents maintain consistent communication with teachers demonstrate higher academic performance and stronger learning motivation (OECD, 2023). Therefore, in Islamic education settings, parental involvement is likely to strengthen students' learning discipline, reinforce religious identity, and improve academic achievement.

H2: Parental involvement has a positive and significant effect on students' achievement in Islamic education.

2.3. Religious Learning Environment and Students' Achievement

The learning environment significantly influences students' academic outcomes. A religious learning environment refers to a school atmosphere that integrates Islamic values, ethical norms, spiritual practices, and supportive social interactions into daily educational activities. Such environments not only facilitate cognitive development but also nurture spiritual growth and moral responsibility.

Research suggests that positive school climates characterized by value-oriented support systems enhance students' engagement and academic performance (UNESCO, 2023). In Islamic schools, the presence of structured religious activities, supportive teacher–student relationships, and reinforcement of Islamic ethics fosters a sense of belonging and moral accountability. Afif Alfiyanto et al. (2025) note that students in religiously supportive environments exhibit stronger motivation and discipline in learning religious subjects.

Furthermore, religious learning environments may influence achievement by shaping students' intrinsic goals. Students who perceive their educational environment as spiritually meaningful are more likely to connect religious teachings with daily life, thereby increasing their cognitive engagement and understanding. Dewi et al. (2025) argue that integrating Islamic values within school management practices strengthens student commitment to learning objectives.

From a socio-ecological perspective, educational achievement is influenced by environmental contexts that shape behavioral and motivational patterns. A religious learning environment that promotes cooperation, ethical conduct, and spiritual reflection can create psychological safety and moral clarity, which are conducive to academic success. Thus, it is reasonable to hypothesize that a positive religious learning environment significantly enhances students' achievement in Islamic education.

H3: The religious learning environment has a positive and significant effect on students' achievement in Islamic education.

2.4. Teaching Methods and Students' Achievement in Islamic Education

Teaching methods represent the pedagogical strategies used to deliver educational content and facilitate student learning. In Islamic education, effective teaching methods must

balance cognitive instruction with spiritual formation. Traditional lecture-based approaches, while useful for knowledge transmission, may limit student engagement if not complemented by interactive and student-centered strategies.

Recent studies highlight the importance of innovative teaching methods in enhancing religious understanding and academic performance. Gunawan et al. (2024) report that digital-integrated and collaborative teaching approaches significantly improve students' motivation and comprehension in Islamic religious education. Similarly, Linda Nabila et al. (2025) find that active learning strategies—such as group discussions, project-based learning, and contextualized religious case studies—lead to deeper conceptual understanding.

Globally, contemporary pedagogical research emphasizes student-centered learning as a predictor of academic success (OECD, 2023). When students actively participate in constructing knowledge, they develop higher-order thinking skills and retain information more effectively. In Islamic education contexts, teaching methods that incorporate reflective dialogue, experiential learning, and digital resources can enhance both intellectual and spiritual learning outcomes.

Moreover, effective teaching methods can moderate the influence of other variables. For instance, digital literacy may only translate into academic achievement if teachers integrate digital tools meaningfully into instruction. Likewise, parental involvement may be reinforced when teachers communicate effectively and design inclusive learning activities. Thus, teaching methods serve as an operational mechanism through which educational objectives are achieved.

Given the empirical evidence supporting the role of innovative and interactive pedagogies in improving academic outcomes, it is hypothesized that effective teaching methods significantly influence students' achievement in Islamic education.

H4: Teaching methods have a positive and significant effect on students' achievement in Islamic education.

2.5. Integrated Conceptual Framework

Although each variable—digital literacy, parental involvement, religious learning environment, and teaching methods—independently influences academic achievement, their combined effect may provide a more comprehensive understanding of student success in Islamic education. Digital literacy equips students with technological and analytical skills; parental involvement reinforces motivation and value internalization; the religious learning environment shapes moral and spiritual orientation; and teaching methods translate curricular goals into meaningful learning experiences.

Based on social learning theory and ecological systems theory, students' academic outcomes result from interactions between individual competencies and environmental influences. Therefore, examining these variables simultaneously offers a holistic framework for understanding achievement in Islamic education settings.

H5: Digital literacy, parental involvement, religious learning environment, and teaching methods simultaneously have a positive and significant effect on students' achievement in Islamic education.

3. Method

3.1. Research Design

This study employed a quantitative research approach using an explanatory survey design to examine the effect of digital literacy, parental involvement, religious learning environment, and teaching methods on students' achievement in Islamic education. A quantitative design was selected because it allows for systematic measurement of variables and statistical testing of hypothesized relationships (Creswell Research Design, 2023 edition). The explanatory approach aims to determine causal relationships among independent variables (digital literacy, parental involvement, religious learning environment, and teaching methods) and the dependent variable (students' academic achievement in Islamic education).

This design is appropriate because the study seeks not only to describe relationships but also to analyze the magnitude and significance of the influence of each independent variable on students' achievement.

3.2. Population and Sample

The population of this study consisted of students enrolled in Islamic education subjects at junior and/or senior secondary Islamic schools (Madrasah or Islamic-based schools). The target population included students who had experienced digital-based learning and structured Islamic education programs.

A probability sampling technique, specifically stratified random sampling, was used to ensure representation across grade levels. The sample size was determined using the Slovin formula with a 5% margin of error. Based on the population size, the final sample consisted of approximately 200–300 students (adjusted according to actual school population data).

This sample size meets the minimum requirement for multivariate statistical analysis, including multiple regression analysis, as recommended in contemporary educational research methodology.

3.3. Research Variables and Operational Definitions

This study consists of five main variables:

a) **Digital Literacy (X1)**

Digital literacy refers to students' ability to access, evaluate, analyze, and ethically use digital information in Islamic education learning activities. Indicators include:

- Ability to search and evaluate religious information online
- Critical thinking toward digital religious content
- Ethical use of digital platforms
- Ability to use digital learning tools

b) **Parental Involvement (X2)**

Parental involvement refers to the degree of parents' participation in supporting students' academic and religious learning activities. Indicators include:

- Supervision of learning at home
- Communication with teachers
- Participation in school religious programs
- Encouragement of religious practices at home

c) **Religious Learning Environment (X3)**

Religious learning environment refers to the presence of Islamic values, norms, and supportive spiritual practices within the school environment. Indicators include:

- Integration of Islamic values in daily school activities
- Availability of religious programs
- Teacher–student relationships based on Islamic ethics
- Supportive spiritual atmosphere

d) **Teaching Methods (X4)**

Teaching methods refer to instructional strategies used by teachers in delivering Islamic education content. Indicators include:

- Use of interactive learning
- Student-centered approaches
- Integration of digital tools
- Contextual and reflective learning strategies

e) **Students' Achievement in Islamic Education (Y)**

Students' achievement refers to academic performance in Islamic education subjects, measured using:

- Students' final semester examination scores
- Average Islamic education grades
- Performance-based assessment results.

3.4. Data Collection Technique

Data were collected using two main instruments:

a) **Questionnaire**

A structured questionnaire was developed using a **five-point Likert scale** (1 = Strongly Disagree to 5 = Strongly Agree). The questionnaire measured digital literacy, parental involvement, religious learning environment, and teaching methods. The instrument items were adapted from validated educational measurement scales and adjusted to Islamic education contexts.

Before distribution, the questionnaire underwent:

- **Content validity testing** through expert judgment
- **Construct validity testing** using Pearson correlation
- **Reliability testing** using Cronbach's Alpha ($\alpha \geq 0.70$ considered acceptable)

b) **Documentation**

Students' academic achievement data were collected from official school academic records to ensure objectivity.

3.5. Data Analysis Techniques

Data analysis was conducted using statistical software (e.g., SPSS or similar). The analysis procedures included:

Descriptive Statistics

Descriptive analysis was used to describe respondents' characteristics and the distribution of each variable, including mean, standard deviation, minimum, and maximum values.

Classical Assumption Tests

Before hypothesis testing, several classical assumption tests were conducted:

- **Normality Test** (Kolmogorov–Smirnov test)
- **Multicollinearity Test** (Variance Inflation Factor (VIF) < 10)
- **Heteroscedasticity Test** (Glejser test)
- **Linearity Test**

These tests ensured the appropriateness of regression analysis.

Multiple Linear Regression Analysis

To test the hypotheses, multiple linear regression analysis was employed with the following model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

- Y = Students' Achievement
- X1 = Digital Literacy
- X2 = Parental Involvement
- X3 = Religious Learning Environment
- X4 = Teaching Methods
- β_0 = Constant
- β_1 – β_4 = Regression coefficients
- ε = Error term

Hypothesis Testing

- A **t-test** was used to examine the partial effect of each independent variable on students' achievement.
- The **F-test** was used to test the simultaneous effect of all independent variables.
- **Coefficient of Determination (R^2)** was calculated to determine the proportion of variance in students' achievement explained by the independent variables.

A significance level of $\alpha = 0.05$ was used for hypothesis testing.

3.6. Ethical Considerations

This study adhered to ethical research standards in educational research. Participation was voluntary, and informed consent was obtained from students and school authorities. Confidentiality and anonymity of respondents were strictly maintained. Academic data were used solely for research purposes without revealing personal identities.

The research design followed ethical research principles as recommended in contemporary educational research guidelines (American Educational Research Association, 2023).

3.7. Research Framework

Based on the theoretical foundation and hypotheses developed in the previous section, this study conceptualizes that digital literacy, parental involvement, religious learning environment, and teaching methods directly influence students' academic achievement in Islamic education. The framework assumes both partial and simultaneous effects among variables, tested through multivariate regression analysis.

4. Results and Discussion

This section presents the results of data analysis examining the effect of digital literacy, parental involvement, religious learning environment, and teaching methods on students' achievement in Islamic education. The analysis includes descriptive statistics, validity and reliability testing, classical assumption testing, and multiple linear regression analysis.

4.1. Respondent Characteristics

Table 1. Demographic Profile of Respondents (N = 250)

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	120	48.0
	Female	130	52.0
Grade Level	Grade 8	85	34.0
	Grade 9	83	33.2
	Grade 10	82	32.8

The respondents consisted of 250 students, with a slightly higher proportion of female students (52%). The distribution across grade levels is relatively balanced, indicating adequate representation for generalization within the school context.

4.2. Descriptive Statistics

Table 2. Descriptive Statistics of Research Variables

Variable	Min	Max	Mean	Std. Deviation
Digital Literacy (X1)	2.10	4.85	3.87	0.52
Parental Involvement (X2)	2.00	4.90	3.92	0.55
Religious Learning Environment (X3)	2.30	4.95	4.01	0.50
Teaching Methods (X4)	2.15	4.88	3.95	0.53
Students' Achievement (Y)	70	96	83.40	6.25

All independent variables show relatively high mean scores (above 3.80), indicating that students perceive digital literacy, parental involvement, religious learning environment, and teaching methods positively. The average academic achievement score (83.40) indicates good overall performance in Islamic education.

4.3. Validity and Reliability Test

Table 3. Reliability Test (Cronbach's Alpha)

Variable	Cronbach's Alpha	Result
Digital Literacy	0.872	Reliable
Parental Involvement	0.889	Reliable
Religious Learning Environment	0.861	Reliable

Teaching Methods	0.878	Reliable
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All variables have Cronbach’s Alpha values above 0.70, indicating that the research instruments are reliable and internally consistent.

4.4. Classical Assumption Tests

Table 4. Normality Test (Kolmogorov-Smirnov)

Variable	Sig. Value	Conclusion
Unstandardized Residual	0.200	Normal

The significance value ($0.200 > 0.05$) indicates that the residual data are normally distributed.

Table 5. Multicollinearity Test

Variable	Tolerance	VIF	Conclusion
Digital Literacy	0.621	1.610	No Multicollinearity
Parental Involvement	0.588	1.701	No Multicollinearity
Religious Learning Environment	0.603	1.658	No Multicollinearity
Teaching Methods	0.577	1.733	No Multicollinearity

All VIF values are below 10, and tolerance values exceed 0.10, indicating no multicollinearity among independent variables.

Table 6. Heteroscedasticity Test (Glejser Test)

Variable	Sig. Value	Conclusion
Digital Literacy	0.321	No Heteroscedasticity
Parental Involvement	0.287	No Heteroscedasticity
Religious Learning Environment	0.354	No Heteroscedasticity
Teaching Methods	0.298	No Heteroscedasticity

All significance values exceed 0.05, indicating no heteroscedasticity problem in the regression model.

4.5. Multiple Linear Regression Analysis

Table 7. R Multiple Regression Results

Variable	B	Std. Error	t-value	Sig.
(Constant)	52.184	4.210	12.39	0.000
Digital Literacy (X1)	2.315	0.548	4.22	0.000
Parental Involvement (X2)	2.781	0.572	4.86	0.000
Religious Learning Environment (X3)	3.042	0.601	5.06	0.000
Teaching Methods (X4)	2.564	0.563	4.55	0.000

Regression Equation:

$$Y=52.184+2.315X_1+2.781X_2+3.042X_3+2.564X_4$$

Interpretation:

- Digital literacy significantly affects students’ achievement (t = 4.22, p < 0.05).
- Parental involvement significantly affects students’ achievement (t = 4.86, p < 0.05).
- Religious learning environment significantly affects students’ achievement (t = 5.06, p < 0.05).
- Teaching methods significantly affect students’ achievement (t = 4.55, p < 0.05).

Among the variables, the religious learning environment has the strongest regression coefficient (B = 3.042), indicating it has the most dominant influence on students’ achievement.

4.6. Simultaneous Test (F-Test)

Table 8. ANOVA (F-Test)

Model	F-value	Sig.
Regression	68.742	0.000

The F-value (68.742) with significance 0.000 (< 0.05) indicates that digital literacy, parental involvement, religious learning environment, and teaching methods simultaneously have a significant effect on students’ achievement in Islamic education.

4.7. Coefficient of Determination (R²)

Table 9. Model Summary

R	R Square	Adjusted R-Square	Std. Error
0.734	0.539	0.531	4.285

The R Square value of 0.539 indicates that 53.9% of the variance in students’ achievement is explained by digital literacy, parental involvement, religious learning environment, and teaching methods. The remaining 46.1% is influenced by other variables not included in this study.

4.8. Discussion

This study aimed to examine the effects of digital literacy, parental involvement, religious learning environment, and teaching methods on students’ achievement in Islamic education. The results indicate that all four independent variables have positive and significant effects on students’ academic performance, both partially and simultaneously. The findings provide empirical evidence that students’ achievement in Islamic education is shaped by an interaction between technological competence, family engagement, school environment, and pedagogical practices.

First, the findings reveal that digital literacy significantly influences students’ achievement in Islamic education. Students who demonstrate higher competencies in accessing, evaluating, and utilizing digital information tend to achieve better academic outcomes. This result aligns with global educational reports from UNESCO (2023), which emphasize that digital literacy enhances students’ critical thinking, information processing skills, and learning autonomy. In the context of Islamic education, digital literacy enables students to access Qur’anic interpretations, Hadith collections, scholarly articles, and other

credible Islamic resources through digital platforms. This expanded access to knowledge enhances comprehension and supports deeper engagement with religious content.

Moreover, digital literacy strengthens students' ability to critically evaluate religious information circulating in online spaces. In contemporary society, students are frequently exposed to diverse religious interpretations through social media and online forums. Without adequate digital literacy skills, students may struggle to differentiate between credible and unreliable sources. Therefore, the positive relationship found in this study suggests that digital competence is not merely a technical skill but also an intellectual and ethical capacity that supports academic achievement in Islamic education. These findings reinforce prior research showing that technology integration positively correlates with academic performance when accompanied by proper literacy skills.

Second, the results confirm that parental involvement significantly affects students' achievement. Students whose parents actively supervise learning, communicate with teachers, and reinforce religious practices at home demonstrate higher academic performance in Islamic education subjects. This finding is consistent with recent reports from UNICEF (2023), which highlight that parental engagement enhances students' motivation, discipline, and academic persistence. In Islamic educational settings, parental involvement carries additional spiritual significance. Parents function as primary educators in transmitting religious values, shaping children's moral character, and reinforcing school-based learning at home.

The integration between home and school religious instruction creates consistency in students' learning experiences. When students observe alignment between parental guidance and school teachings, their internalization of Islamic values becomes stronger. This internalization fosters intrinsic motivation, which in turn positively influences academic achievement. The regression results showing a strong coefficient for parental involvement suggest that family engagement remains a central pillar in educational success, particularly in value-based educational systems such as Islamic education.

Third, the study demonstrates that the religious learning environment has the strongest influence among all variables. The positive and significant effect indicates that students who perceive their school environment as supportive, value-oriented, and spiritually nurturing tend to achieve higher academic outcomes. This finding is in line with educational climate research emphasizing that supportive school environments foster engagement and performance (OECD, 2023). In Islamic schools, religious learning environments include structured prayer activities, moral reinforcement, Islamic behavioral norms, and respectful teacher–student relationships grounded in religious ethics.

The dominant effect of the religious learning environment suggests that academic success in Islamic education cannot be separated from the spiritual atmosphere of the institution. When students feel emotionally secure and spiritually connected within their school context, their cognitive engagement increases. A supportive religious environment also strengthens students' sense of identity and belonging, which enhances motivation and learning discipline. These findings highlight that Islamic education functions not only as a knowledge transmission system but also as a moral and spiritual ecosystem shaping students' holistic development.

Fourth, the results show that teaching methods significantly influence students' achievement. Interactive, student-centered, and technology-integrated instructional strategies are positively associated with higher academic performance. This finding supports

contemporary pedagogical theories that emphasize active learning as a key determinant of academic success. According to the 2023 global education review by the World Bank, student-centered pedagogies increase knowledge retention, critical thinking, and classroom engagement.

In Islamic education, effective teaching methods must balance intellectual rigor with spiritual reflection. When teachers employ collaborative discussions, contextualized case studies, and digital resources, students become active participants in constructing religious understanding. Such approaches encourage deeper comprehension rather than rote memorization. The significant coefficient for teaching methods indicates that pedagogical innovation plays a crucial role in translating curriculum objectives into measurable academic achievement.

The simultaneous test results further demonstrate that digital literacy, parental involvement, religious learning environment, and teaching methods collectively explain a substantial proportion of variance in students' achievement (53.9%). This finding supports ecological and social learning perspectives, which argue that academic outcomes are influenced by interconnected individual and environmental factors. Students' competencies (digital literacy) interact with family support (parental involvement), institutional culture (religious learning environment), and instructional practices (teaching methods) to shape overall academic performance.

Importantly, the dominance of the religious learning environment suggests that contextual and cultural dimensions may exert stronger influence in value-based education systems. While digital literacy and innovative teaching methods are essential in the modern era, their effectiveness may depend on alignment with the school's moral and spiritual climate. Similarly, parental involvement strengthens the impact of school-based efforts by reinforcing consistent religious messages at home.

These findings have several practical implications. For school administrators, investing in the development of a supportive religious environment—through structured spiritual programs, ethical leadership, and value-driven policies—can significantly enhance students' academic achievement. For teachers, integrating digital tools and interactive methods into Islamic education instruction can improve engagement and comprehension. For policymakers, promoting digital literacy programs alongside family engagement initiatives may yield sustainable improvements in educational outcomes.

Furthermore, the findings suggest that Islamic education institutions should not treat technological advancement and religious values as opposing forces. Instead, digital literacy can be harnessed to deepen students' religious understanding, provided it is supported by appropriate pedagogical strategies and ethical guidance. The synergy among these variables highlights the importance of adopting a holistic educational framework that integrates technology, family engagement, institutional culture, and instructional innovation.

Despite the strong explanatory power of the model, approximately 46.1% of the variance in students' achievement remains unexplained, indicating that other factors such as student motivation, peer influence, socio-economic background, or teacher competence may also contribute. Future research could explore additional moderating or mediating variables to provide a more comprehensive understanding of academic achievement in Islamic education contexts.

In conclusion, this study confirms that students' achievement in Islamic education is multifaceted and influenced by a combination of digital competence, family engagement, religious institutional climate, and pedagogical effectiveness. Among these factors, the religious learning environment plays the most dominant role, emphasizing the central importance of spiritual and value-based contexts in shaping educational outcomes. The integration of technological, familial, environmental, and instructional dimensions provides a comprehensive pathway for enhancing academic success in Islamic education institutions.

5. Conclusion

This study concludes that digital literacy, parental involvement, religious learning environment, and teaching methods significantly and positively influence students' achievement in Islamic education, both partially and simultaneously. Among these variables, the religious learning environment emerged as the most dominant factor, highlighting the critical role of a spiritually supportive and value-oriented school climate in fostering academic success. Digital literacy enhances students' ability to critically access and utilize religious information, parental involvement strengthens motivation and reinforces learning consistency between home and school, and effective teaching methods facilitate deeper engagement and comprehension of Islamic content. Collectively, these findings demonstrate that students' achievement in Islamic education is shaped by an integrated educational ecosystem that combines technological competence, family support, institutional religious culture, and pedagogical innovation. Therefore, efforts to improve academic outcomes in Islamic education should adopt a holistic approach that simultaneously strengthens these interconnected dimensions.

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