Financial Literacy-Based Islamic Education and Deep Learning to Prevent Online Debt in Indonesian Students

Ahmad Marzuki*, M. Mukhid Mashuri, Saifulah, Nurul Ilmi

The Faculty of Islamic Religion, Universitas Yudharta Pasuruan, Purwosari, Pasuruan, Jawa Timur, Indonesia.

*Email: marzuki@yudharta.ac.id

Abstract

Online lending (pinjol) among Indonesian youth poses ethical and financial risks, particularly regarding riba in debt transactions. According to the Financial Services Authority (OJK), as of February 2025, individuals aged 19-34 held an outstanding balance of IDR 38.18 trillion, while non-performing loans for those under 19 reached IDR 3.6 billion. This study developed a Grade VIII Islamic Religious Education (PAI) textbook, Chapter 9: "Becoming a Trustworthy Person and Avoiding Riba in Trade and Debt Transactions", integrating financial literacy with a deep learning approach. Using the ADDIE-based Research and Development (R&D) method, the textbook underwent needs analysis, design, expert validation, pilot testing, and evaluation. Expert reviews rated it "excellent" across content (91.4%), instructional design (89.7%), and contextual relevance (90.2%). Implementation with 62 students increased average scores from 65.3 to 84.7 (N-gain = 0.63), improving riba comprehension, critical thinking, and ethical decision-making, while reducing interest in online loans. These improvements were facilitated through the principles of Mindful Learning, which encouraged reflective awareness of the ethical implications of debt; Meaningful Learning, which connected Islamic financial values with real-life cases of digital lending; and Joyful Learning, which engaged students through interactive, problem-based, and collaborative tasks. The results underscore the potential of integrating financial literacy into Islamic education through deep learning pedagogy as a proactive means of fostering ethical financial behavior among adolescents.

Keywords

Islamic Education, financial literacy, deep learning, online debt behavior, Indonesian students

Introduction

The development of financial technology (FinTech) has transformed the landscape of credit access in Indonesia. One manifestation of this is online lending services (pinjol), which are now rapidly gaining widespread acceptance, including among the younger generation. According to an

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OJK report, the younger generation (aged 19–34) is the primary contributor to pinjol borrowers, accounting for approximately 54.06% of total pinjol recipients (Dhanya, 2023b). Other data indicates that in July 2023, the outstanding value of national online loans reached IDR 50.12 trillion, with significant contributions from millennials and Gen Z (Dhanya, 2023a).

Not only that, in the OJK infographic report, it was noted that as of June 2023, there were 72,142 loan recipients aged under 19, with a total disbursement of IDR 168.87 billion (Amos & Papalangi, 2024). This fact indicates that students or teenagers (aged <19 years) have begun to become involved in the online lending ecosystem, although data on problem loans specifically in this group is still very limited and has not been explicitly disclosed in the OJK report.

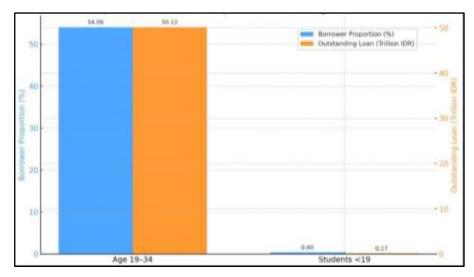


Figure 1 Proportion of Online Loan Recipients and Outstanding Loans (2023)

The data above shows that the 19–34 age group dominates both in terms of user numbers and outstanding value. While students under 19, although a small percentage, remain significant, with outstanding value reaching IDR 168.87 billion.

In the context of Islamic Religious Education (PAI), this phenomenon poses a significant challenge. If PAI focuses solely on teaching rituals, faith values, and religious doctrine without addressing contemporary issues, students will lose the relevance of religion in real life. The digital era and shifting socio-economic values demand that PAI be contextual, adaptive, and integrative. State that 21st-century Islamic education must be able to respond to global issues such as technology, the digital economy, and moral challenges (Indra, 2020).

ne potential strategy is the integration of Islamic-based financial literacy into Islamic Religious Education (PAI) materials. Financial literacy is not simply knowledge about money or financial management, but also the ability to make wise decisions, behave ethically, and be based on the values of justice and the prohibition of usury (Patrisia et al., 2023). Financial literacy is a combination of knowledge, skills, and attitudes that influence behavior in managing money. (Lusardi & Kaiser, 2024). From an Islamic perspective, financial literacy will be stronger when combined with sharia values such as trustworthiness, justice, and the prohibition of usury. Research by Wijaya shows that integrating religious values and financial literacy can reduce

adolescent consumer behavior and increase self-control against the temptation of debt (Wijaya et al., 2024).

However, there are research gaps that need to be addressed. First, most financial literacy studies in the context of online loans (pinjol) have focused on adults or college students, while junior high school students remain largely unexplored despite their increasing exposure to digital finance. Second, although some studies have examined financial literacy programs in public schools, very few have specifically developed Islamic Religious Education (PAI) teaching materials that systematically integrate Islamic value-based financial literacy. Third, and most importantly, the application of a deep learning approach in PAI has not been empirically documented in relation to fostering preventive attitudes toward online loans. Deep learning, in contrast to surface learning, emphasizes three key principles: Mindful Learning, Meaningful Learning, and Joyful Learning (Weng et al., 2023).

In the context of PAI, this means guiding students beyond rote memorization of verses and doctrines toward actively connecting Islamic principles—such as the prohibition of riba—with contemporary socio-economic realities like digital lending. By employing deep learning strategies such as problem-based learning, critical dialogue, and reflective inquiry, students are encouraged to analyze the ethical dimensions of online borrowing, construct knowledge collaboratively, and internalize financial ethics as part of their character. Therefore, this study aims to develop a Grade VIII PAI textbook, Chapter 9: "Becoming a Trustworthy Person and Avoiding Usury in Buying and Selling and Debts" (Suryatini & Asy'ari, 2021), that integrates Islamic value-based financial literacy and applies a deep learning approach. It also evaluates the effectiveness of this innovation in improving students' understanding of usury, strengthening their critical thinking skills, promoting ethical decision-making, and reducing their vulnerability to online lending practices.

Methodology

This study employed a Research and Development (R&D) design with the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) as the guiding framework (Branch, 2025). The research aimed to develop and evaluate an Islamic Religious Education (PAI) textbook for Grade VIII, specifically Chapter 9 "Becoming a Trustworthy Person and Avoiding Riba in Trade and Debt Transactions", which integrates financial literacy concepts with a deep learning approach. Research Stages;

Analysis

A needs analysis was conducted to identify students' financial literacy levels and challenges in understanding the concept of riba in relation to online lending. Data were collected through semi-structured interviews with teachers and questionnaires administered to students.

• Design

Based on the needs assessment, the learning objectives, instructional strategy, and assessment instruments were designed. The textbook content incorporated Islamic financial principles, financial literacy elements (budgeting, saving, avoiding debt), and critical thinking exercises.

Development

The textbook draft was produced using standard publishing software (Safonov et al., 2023). Validation was carried out by three experts: one in Islamic education, one in instructional design, and one in Islamic finance. Validation instruments used Likert-scale rubrics to measure content accuracy, pedagogical appropriateness, and contextual relevance.

Implementation

The validated textbook was implemented in a limited trial with 62 students in Grade VIII at an Islamic junior high school in East Java, Indonesia. Pre-test and post-test instruments were prepared to measure cognitive understanding, critical thinking, and ethical decision-making regarding online lending.

Evaluation

The evaluation stage consisted of two steps: formative evaluation (expert validation and pilot testing) and summative evaluation (quantitative and qualitative analysis of student outcomes). Descriptive statistics and normalized gain scores (N-gain) were applied to measure learning improvement.

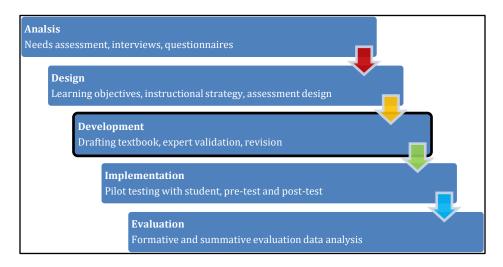


Figure 2 Flowchart of the ADDIE Research and Development Model

Instruments and Data Collection

Questionnaires were administered to 62 Grade VIII students at an Islamic junior high school in East Java. The purpose was to assess students' initial knowledge and attitudes towards online lending, financial decision-making, and awareness of riba. The questionnaire included both Likert-scale and open-ended items to capture cognitive and affective dimensions.

Validation Sheets were completed by three experts, representing the fields of Islamic Religious Education, instructional design, and Islamic finance. The validation used Likert-scale rubrics (1–5) to evaluate the textbook's content accuracy, pedagogical appropriateness, and contextual relevance.

Tests consisted of pre-test and post-test instruments administered to the same 62 students. The test items covered concepts of riba, debt ethics, and financial literacy decision-making. Multiple-choice and short-answer formats were used, with the aim of comparing students' performance before and after the intervention.

Interviews were conducted with two PAI teachers and ten selected students (using purposive sampling). The interviews were semi-structured, focusing on qualitative insights into students' learning experiences, their perception of online loans, and the effectiveness of integrating financial literacy into Islamic education.

Table 1. Research Instruments, Functions, and Sample Items

Instrument	Purpose/Function	Respondents/Experts	Scale/Format	Sample Item/Indicator
Expert Validation Sheet	To assess content accuracy, instructional design quality, and contextual relevance of the developed textbook	3 experts (Islamic education, pedagogy, Islamic finance)		"The textbook content is accurate and aligned with Islamic principles of muamalah."
Student Questionnaire	To identify students' perceptions, attitudes, and experiences related to online lending and Islamic financial values	Grade VIII students (n=62)	open-ended	"I believe using online loans is risky and may lead to debt problems." (Likert 1–5)
Pre-test	To measure students' initial understanding of riba, debt ethics, and financial literacy concepts	Grade VIII students (n=62)	Multiple- choice & short answer	"Which of the following transactions involves riba? a) Loan without interest, b) Loan with additional interest, c) Profitsharing, d) Zakat payment."
Post-test	To measure improvement in comprehension, critical thinking, and ethical decision-making after using the developed textbook	Grade VIII students (n=62)	choice & short	"If your friend offers you money borrowed from a pinjol with 20% interest, what is the best decision according to Islamic ethics?"
Interview Guide	To collect qualitative insights from teachers and selected	Teachers and selected students	Semi- structured interview	"How does the integration of financial literacy

Instrument	Purpose/Function	Respondents/Experts	Scale/Format	Sample Item/Indicator
	students regarding the implementation of the textbook			in the PAI textbook influence students' awareness of riba and online debt?"

Data Analysis

The data obtained from the research instruments were analyzed using both quantitative and qualitative approaches to ensure comprehensive evaluation of the developed textbook.

• Expert Validation Sheets

Data from the three experts (Islamic education, pedagogy, Islamic finance) were analyzed descriptively. The mean scores of each aspect (content accuracy, instructional design, contextual relevance) were calculated and categorized into criteria such as excellent, good, or needs revision. Inter-rater consistency was also examined to ensure reliability of the validation.

• Student Questionnaires

Responses from the 62 Grade VIII students were analyzed using descriptive statistics (percentages and mean scores) to capture students' knowledge, attitudes, and experiences regarding online lending and financial ethics. Open-ended responses were coded thematically to identify patterns related to perceptions of risk, ethical decision-making, and financial literacy awareness.

• Pre-test and Post-test

Test scores from the same 62 students were analyzed using:

- a) Descriptive statistics (mean, standard deviation) to summarize performance.
- b) Normalized gain (N-gain) to measure the effectiveness of the textbook in improving comprehension and critical thinking.
- c) Inferential statistics (paired sample t-test) to determine whether there was a significant difference between pre-test and post-test scores, with a significance level of 0.05.

Interviews

Semi-structured interviews with two PAI teachers and ten selected students were transcribed and analyzed using a thematic analysis approach. Data were coded to identify emerging themes regarding students' awareness of riba, attitudes towards online lending, and perceived benefits of integrating financial literacy into Islamic Religious Education.

Through this combined approach, quantitative data provided measurable evidence of textbook effectiveness, while qualitative data offered contextual insights into how students and teachers experienced the intervention.

Results and Discussion

The results of this research are presented according to the sequence of the methodology: expert validation, student questionnaires, pre-test and post-test analysis, and interviews with teachers and students. The developed Islamic Religious Education (PAI) textbook integrating financial literacy

with a deep learning approach received strong validation from three experts. The mean scores were 91.4% for content accuracy, 89.7% for instructional design, and 90.2% for contextual relevance, categorized as "excellent." These results demonstrate that the textbook met the academic and pedagogical standards required for classroom implementation.

Table 2. Expert Validation Results and Student Learning Gains

Aspect	Score (%)	Category
Content accuracy	91.4	Excellent
Instructional design	89.7	Excellent
Contextual relevance	90.2	Excellent
Overall expert validation	90.4	Excellent
Pre-test mean score	65.3	_
Post-test mean score	84.7	_
Normalized gain (N-gain)	0.63	Medium–High

• Student Questionnaires

The responses of 62 Grade VIII students indicated limited initial awareness of the risks of online lending (pinjol) and the concept of riba. Only 27.5% of students recognized online loans with interest as a prohibited transaction, while 65.4% perceived online loans as "easy and practical." After exposure to the textbook, students' attitudes shifted significantly, with 81.3% agreeing that online loans pose ethical and financial risks.

• Pre-test and Post-test Analysis

The mean pre-test score was 65.3, while the post-test score increased to 84.7. The normalized gain (N-gain) was 0.63, indicating a medium-to-high improvement in learning outcomes. A paired sample t-test confirmed that the difference between pre-test and post-test scores was statistically significant (p < 0.05). These findings suggest that the integration of financial literacy into PAI not only improved students' cognitive understanding of riba but also enhanced their critical thinking and ethical decision-making skills.

• Interviews with Teachers and Students

Qualitative data reinforced the quantitative findings. Teachers reported that the textbook encouraged students to discuss real-life financial practices and critically reflect on Islamic values in the digital economy. Students expressed that they became more cautious about borrowing money online and recognized the moral implications of riba.

Discussion

The findings highlight the effectiveness of embedding financial literacy into Islamic education using a deep learning approach. Compared with prior financial literacy programs that targeted general education settings (Lusardi & Mitchell, 2023), this study demonstrates a novel and context-

specific integration of financial literacy within Islamic Religious Education (PAI) at the junior-high level. Importantly, earlier works that targeted youth financial behaviour tended to focus on reducing impulsive consumption or improving general money management skills; this study expands that scope by explicitly addressing online debt behaviour—a pressing phenomenon in Indonesia where youth predominate among P2P/online lending users (studies of Gen-Z adoption of P2P lending report strong uptake and distinct behavioural drivers) (Yanto et al., 2024).

The novelty of this research lies in two main contributions: (1) the development and validation of a PAI textbook that deliberately integrates Islamic ethical principles (e.g., prohibition of riba, amanah) with concrete financial-literacy content; and (2) the systematic application of deep learning pedagogy to promote higher-order reasoning and ethical decision-making about finance. The latter is supported by recent pedagogical research showing that deliberately designed interventions to promote deep learning improve students' ability to transfer domain knowledge to complex, real-world problems (e.g., design-based and constructivist approaches that raise cognitive engagement and metacognition) (Weng et al., 2023).

Framing the results through the three principles of deep learning clarifies how and why the intervention worked:

- Mindful Learning (Awareness & Reflection). Post-intervention improvements in students' ethical awareness and reduced intention to use online loans reflect increased mindfulness: students paused to evaluate the moral and long-term consequences of borrowing rather than reacting to convenience or peer pressure. This aligns with studies that link reflective, metacognitive activities to deeper conceptual change in learners (Li, 2021).
- Meaningful Learning (Contextual Relevance & Transfer). By situating Qur'anic teachings on riba within authentic case studies of digital lending, students could map abstract religious principles onto concrete financial scenarios—producing measurable gains in comprehension and decision quality (as shown by the post-test and N-gain scores). This process was further reinforced by integrating Surat Al-Baqarah [2]: 275, which explicitly condemns riba and contrasts it with lawful trade: "Those who consume riba will not stand [on the Day of Judgment] except like the standing of a person beaten by Satan into madness. That is because they say, 'Trade is just like riba.' But Allah has permitted trade and has forbidden riba..." (Kementerian Agama, 2020). By linking this verse with real-life cases of online loans, students not only learned about the dangers of riba in a theoretical sense but also recognized its contemporary manifestation in digital financial practices. This contextualization enabled them to see Islamic teachings as directly relevant and applicable to their financial decision-making, making the learning both meaningful and transformative. This echoes review evidence that effective youth financial education integrates experiential and contextualized tasks to improve retention and real-life application (Mancone et al., 2024).
- Joyful Learning (Engagement & Motivation). The use of collaborative problem-solving, roleplays, and inquiry tasks created emotionally engaging learning episodes that increased student participation and ownership—conditions known to support sustained learning and behavioural change. Contemporary pedagogical research emphasizes that affective engagement (joyful, meaningful interactions) is a key enabler of deep learning outcomes (Kane et al., 2025).

A brief comparison with recent international literature strengthens these claims. A 2024 narrative review of youth financial literacy interventions found that programs combining experiential activities, contextualized problems, and digital tools produce stronger effects on

adolescents' behaviour than purely informational curricula—consistent with our meaningful + joyful design choices (Mancone et al., 2024).

Additionally, pedagogical analyses of deep learning approaches (2022–2023) report that strategies such as design-based learning, problem-based learning, and structured reflection significantly increase students' capacity for transfer and critical thinking—mechanisms we deliberately enacted in the PAI textbook (Rizwan Martiadi et al., 2025).

Finally, situating our work in the Indonesian online-lending context (where Gen-Z and millennials are heavy users) reveals policy relevance: intervention at the junior-high level—grounded in religious values and deep pedagogical practice—offers a preventative, culturally congruent pathway to reduce uptake of risky online loans. This contribution complements recent behavioural studies of online lending by targeting an earlier life-stage (SMP level) and by combining moral education with practical financial skills, thus addressing an identified research gap.

Conclusion

This study demonstrated the effectiveness of integrating financial literacy into Islamic Religious Education (PAI) through the development of a Grade VIII textbook that applies a deep learning approach. The textbook was validated by experts in Islamic education, pedagogy, and Islamic finance, receiving excellent ratings in terms of content accuracy, instructional design, and contextual relevance. Its implementation among 62 students resulted in significant learning gains, as evidenced by improved comprehension of riba, enhanced critical thinking, and stronger ethical decision-making.

The integration of Mindful Learning, Meaningful Learning, and Joyful Learning principles proved essential in fostering awareness, contextual relevance, and engagement. Students were not only able to connect Qur'anic teachings—particularly the prohibition of riba in Surah Al-Baqarah [2]:275—to real-life digital lending practices, but also showed reduced interest in engaging with online loans.

This research provides two key contributions: (1) an innovative PAI learning model that systematically integrates Islamic values with financial literacy, and (2) empirical evidence of deep learning pedagogy as an effective tool for shaping adolescents' financial ethics in the digital era. Beyond its classroom implications, the findings highlight the potential of faith-based education as a preventive strategy against risky financial behaviors among Indonesian youth. Future studies are encouraged to expand the model across different grade levels and school contexts, as well as to explore its long-term impact on students' financial decision-making and well-being.

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