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DIGITAL INNOVATION THROUGH SHARIALEARN TO ENHANCE STUDENTS'S LITERACY IN ISLAMIC BANKING

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Abstract

Introduction: This study aims to develop the ShariaLearn educational application and analyze its effectiveness in improving students' Islamic banking literacy. **Research Methods:** This study employed the Research and Development (R&D) method using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). Data were collected through expert validation as well as pre-test and post-test results from students of MAN 1 Ngawi, which were then analyzed using a paired sample t-test. **Results:** The findings indicate that ShariaLearn was successfully developed by providing comprehensive materials on the principles, contracts, and products of Islamic banking. Empirical findings confirmed a significant difference between pre-test and post-test scores, indicating that the use of interactive digital media can overcome students' low contextual understanding. **Conclusion:** The ShariaLearn application is effective as an independent learning medium. Its implication is that the integration of technology into school curricula can accelerate the improvement of Islamic financial literacy among the younger generation.

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INTRODUCTION

In the modern era, Islamic banking literacy is highly crucial in preventing mistakes in financial management. Financial problems are often caused not by low income, but by a lack of understanding that leads to poor financial decisions (Nafiyah et al., 2023, p. 509). National index data further emphasize the significant gap between conventional and Islamic financial literacy in Indonesia, as shown in the table below.

Table 1. Conventional and Islamic Financial Literacy Index

Index	Type	Method	Survey Results
Literacy	Conventional	Sustainability	66,45%
		DNKI Coverage	66,64%
	Islamic	Sustainability	43,42%
		DNKI Coverage	43,42%

Source: National Survey on Financial Literacy and Inclusion (SNLIK), 2025

The national index data presented in table 1 indicate a substantial gap, where conventional financial literacy reaches 66%, while Islamic financial literacy is only 43.42%. This difference of more than 20% confirms that public understanding of the Islamic financial system still lags far behind the conventional system ("Siaran Pers Bersama: Indeks Literasi dan Inklusi Keuangan Masyarakat Meningkat, OJK dan BPS Umumkan Hasil Survei Nasional Literasi Dan Inklusi Keuangan (SNLIK) Tahun 2025,"). This situation requires continuous education and socialization efforts to improve public understanding of Islamic banking products, particularly regarding the various Arabic contract terms that are considered quite complex (Nafiyah et al., 2023, p. 509).

Financial literacy should be taught from an early school age to better prepare children for their future. This education trains children to manage their allowance wisely by distinguishing between needs and wants (Suni, Subagiyo, Solihah, & Nugraha, 2024, pp. 600–601). Although it has not yet become an official curriculum for children, financial literacy education is very important to be introduced from an early age (Yulita, Ekawati, & Astuti, 2024, p. 4). Senior high school students (SMA/SMK/MA) generally have limited understanding of Islamic banking because it has not been discussed comprehensively in the formal curriculum. In fact, this literacy is important for introducing Islamic principles that prohibit *riba* (interest) and investments in unlawful businesses (Anam & Anggraini, 2020, p. 131). Low Islamic financial literacy limits public access to financial institutions and hinders economic development. Conversely, high financial literacy can increase development financing and accelerate economic growth (Thohari & Hakim, 2021, p. 48). Many high school students still do not fully understand the basic concepts of Islamic banking because the material has not been taught effectively or contextually in school (Rosa, Rahmalia, Anisah, Sari, & Kusnannda, 2025, p. 4). Therefore, it is necessary to develop innovative and relevant learning media to help improve Islamic banking literacy among senior high school students (SMA/SMK/MA).

Learning applications are highly effective because they present materials in an interactive and visual manner, enabling concepts to be understood more quickly compared

to plain text. This method can attract students' attention through colorful designs and strengthen memory retention through more engaging information delivery (Arisyanto, Cahyadi, & Azizah, 2025, pp. 2–3). Various approaches have been implemented in learning media research. First, the development of a basic banking booklet proved to be effective and easy to understand for tenth-grade students (Restutiasih, Pramika, & Aradea, 2024). Second, the development of Adobe Flash-based mathematics learning media for cube and rectangular prism materials in elementary schools using the Research and Development (R&D) approach with the Borg and Gall model received highly feasible validation results from experts and students (T. K. A. Sari, 2019). Third, the development of Pop-Up picture book media using the Research and Development (R&D) approach with the Borg and Gall model for fable materials in third-grade elementary school demonstrated high validation and product effectiveness results and was able to improve students' understanding (Yurnasari, 2021). The novelty of this study lies in the development of a visual and interactive educational application specifically designed to improve Islamic banking literacy among Madrasah Aliyah students, with a case study at MAN 1 Ngawi.

An interview with the Islamic economics teacher at MAN 1 Ngawi revealed that students' understanding of Islamic banking is still general and limited. Students have difficulty distinguishing between Islamic and conventional banking systems and do not yet fully understand complex contracts or product mechanisms in depth. Although the concept of *riba* has been introduced through the integration of *fiqh* subjects, the principles of justice and partnership are still rarely discussed. Considering students' high dependence on smartphones, there is a need to develop an educational application that presents systematic, contextual, and applicable materials to improve the Islamic financial literacy of students at MAN 1 Ngawi (Siti, 2026). The interview results indicate an urgent need for practical learning media based on Islamic economic values at MAN 1 Ngawi. Given that students possess strong critical thinking abilities and good digital skills, the development of this educational application is considered an appropriate solution to fill the gap in comprehensive Islamic banking literacy media at MAN 1 Ngawi.

This study aims to create learning innovations through engaging media for senior high school students in order to improve Islamic banking literacy, which remains relatively low (Setyowati & Lailatullailia, 2020, p. 15). Low public literacy has led to widespread perceptions that Islamic banking systems are the same as conventional banking systems (Sibagariang & Nasution, 2023, p. 100). This study seeks to develop, test, and analyze the effectiveness of an educational application in improving Islamic banking literacy at MAN 1 Ngawi. In addition, this study is expected to provide recommendations for innovative learning media that are relevant to students' characteristics in order to strengthen their financial understanding.

The problem identification in this study includes the low level of Islamic banking literacy among students at MAN 1 Ngawi as well as the lack of engaging and easily understandable learning media. In addition, the absence of learning media specifically developed for Islamic banking literacy materials at the SMA/SMK/MA level in MAN 1 Ngawi has become a major obstacle in the educational process.

This study emphasizes that the development of educational applications is highly important for senior high school students, as engaging media can simplify complex Islamic financial concepts (Restutiasih et al., 2024, p. 3183). In the field of education, media serve as tools to deliver information and support the teaching and learning process in achieving educational objectives (Syahmi, Ulfa, & Susilaningsih, 2022, p. 82). The development of this media aims to improve students' understanding of the material while also increasing their financial awareness. Therefore, this study focuses on an educational application as an innovative solution to improve the Islamic banking literacy of students at MAN 1 Ngawi.

This study focuses on two research questions. First, how to develop an appropriate educational application to improve Islamic banking literacy among students at MAN 1 Ngawi. Second, how effective the educational application is in improving Islamic banking literacy among students at MAN 1 Ngawi. Based on these research questions, the objectives of this study are to analyze the development of an appropriate educational application to improve Islamic banking literacy among students at MAN 1 Ngawi and to analyze the extent to which the educational application is effective in improving their Islamic banking literacy.

The development of the ShariaLearn learning application in this study has several limitations that need to be considered so that its utilization remains proportional to existing conditions. First, the implementation was limited to students at MAN 1 Ngawi, so the results cannot yet be generalized broadly. Second, the application features developed using iSpring Suite do not yet support online data storage or real-time monitoring of students' progress. Third, the short trial duration means that the long-term impact on knowledge retention and financial behavior has not been measured in depth. Fourth, the effectiveness of the application depends heavily on the specifications and performance of each student's smartphone device. Finally, product validation was still limited to assessments by material and media experts and did not yet include a comprehensive evaluation of user experience.

The ShariaLearn product specifications consist of technical and functional descriptions designed as an interactive educational learning medium to improve the Islamic banking literacy of students at MAN 1 Ngawi. This product is an Android-based mobile application developed using iSpring Suite and converted into APK format through Website 2 APK Builder. As an independent learning platform, the application integrates comprehensive materials ranging from basic principles to various types of Islamic banking contracts, supported by multimedia elements such as text, images, background music, and an interactive navigation system. In addition to presenting learning materials, the application's main features include an evaluation menu in the form of quizzes with an automatic scoring system to measure students' learning effectiveness offline.

The product development process applied the ADDIE model, which integrates multimedia learning principles, including cognitive, visual-verbal, and contiguity aspects to ensure that the material is delivered systematically. The interface design was made user-friendly with hyperlink-based navigation, enabling tenth, eleventh, and twelfth-grade students to operate the application independently. To ensure its quality, the development of ShariaLearn involved validation stages conducted by material experts and media experts.

Through this approach, the application is expected to become an innovative, feasible, and practical solution in helping students understand the role and implementation of Islamic banking in everyday life.

The development of the ShariaLearn application integrates Islamic banking theory and multimedia learning theory as complementary primary foundations. Islamic banking theory serves as the basis of the learning materials (what to learn), which systematically include introductions, principles, *riba* in Islamic banking, Islamic contracts, Islamic banking products, and supporting institutions of Islamic banking. Meanwhile, multimedia learning theory functions as the pedagogical framework (how to learn) that regulates the presentation of materials through the integration of text, visuals, and audio to optimize students' cognitive capacity. These two theories ensure that the application not only presents conceptually valid content but also offers an interactive, engaging, and effective learning experience in improving the Islamic banking literacy of students at MAN 1 Ngawi.

RESEARCH METHOD

This study employed the Research and Development (R&D) method using the ADDIE model, which consists of the stages of analysis, design, development, implementation, and evaluation (Rayanto & Sugianti, 2020, p. 33). Research and Development (R&D) is a research method aimed at creating specific products while also testing the effectiveness of their implementation (Sugiyono, 2021, hlm. 297). This process begins with the identification of problems or innovative ideas to improve existing products or create new ones. Its main objective is to produce products that are more effective and relevant to users' needs (M. N. Sari et al., 2024, p. 70).

This study was conducted at MAN 1 Ngawi based on considerations of religious relevance, students' cognitive maturity, and the absence of interactive digital media for Islamic banking learning at the school. Using the ADDIE model, this one-year study was designed to align with the academic calendar. The development of the ShariaLearn application is expected to become an innovative solution for effectively improving students' Islamic banking literacy. The subjects of this study were students of MAN 1 Ngawi, selected due to their cognitive maturity in understanding basic financial concepts. This population was determined as the generalization area from which conclusions were drawn according to the characteristics of the study.

Population is not limited to humans, but may also include objects or other phenomena that possess certain characteristics (Sugiyono, 2021, p. 80). Samples are taken from the population to represent its overall number and characteristics. This is done because limitations in time, effort, and cost make it impossible to study a large population entirely, therefore, the selected sample must be representative (Sugiyono, 2021, p. 81). In this study, the sampling technique used was purposive sampling, namely the selection of samples based on specific considerations relevant to the research objectives (Sugiyono, 2021, p. 85). The research sample consisted of 30 students equally distributed among grades X, XI, and XII. This

composition was chosen to meet the requirements of product testing in order to obtain an accurate overview of the effectiveness of the educational application being developed.

The research procedure began with problem identification and data collection through interviews, questionnaires, and documentation. Based on the analysis results, the educational application was designed, developed, and validated by experts before being tested on students. The final stage involved evaluation through pre-tests and post-tests to measure the effectiveness of the educational application. The research instruments included a needs analysis conducted through interviews with teachers at MAN 1 Ngawi to identify the need for learning media, as well as expert validation conducted by material and media experts to assess feasibility and ensure the quality, suitability, and alignment of the ShariaLearn application with the learning objectives.

The data collection techniques used in this study consisted of three methods. First, in-depth interviews were conducted with teachers at MAN 1 Ngawi to identify students' Islamic banking literacy problems and the need for innovative learning media. Second, questionnaires using a 1-4 Likert scale were employed to measure effectiveness through students' pre-tests and post-tests, as well as feasibility assessments by material experts (content and concepts) and media experts (appearance and interactivity). Third, documentation was used to collect data on teaching materials, learning conditions, and records of validation and trial results as the basis for product improvement.

The validity of the data was verified through the member checking technique, in which participants were asked to review the researcher's findings and interpretations. This process aimed to confirm that the compiled data accurately reflected the original intentions and perspectives of the informants, thereby ensuring the accuracy and validity of the research results (Rosmita et al., 2024, p. 105). In this study, member checking was conducted during the pre-research stage through reconfirmation of interview results with teachers at MAN 1 Ngawi. The researcher summarized the information and validated it with the informants to ensure that the interpretation of the data did not deviate from the intended meaning. This process ensured that the foundation for developing the ShariaLearn application was accurate, reliable, and consistent with actual field conditions.

The data analysis in this study was divided into two types: qualitative analysis and quantitative analysis. Qualitative analysis was used to analyze data obtained from interviews, questionnaires, and expert feedback descriptively in order to identify needs and product improvements. Quantitative analysis was employed to measure product effectiveness through a paired sample t-test using SPSS 24 to compare the pre-test and post-test results, using the following formula:

$$t = \frac{\bar{d}}{s_d / \sqrt{n}}$$

Where t represents the calculated t-value, $\bar{d}$ refers to the mean difference of the samples, S_d denotes the standard deviation of the sample differences, and $\sqrt{n}$ represents the number of samples (Astuti & Setiawan, 2023, p. 72). In addition, the feasibility level of the

product was determined through the percentage of validation scores from experts calculated using the following formula:

$$P = \frac{f}{n} \times 100\%$$

Where *P* represents the percentage value, *f* is the score obtained, and *n* is the maximum score. Thus, the resulting product is expected to truly meet users' needs and effectively improve Islamic banking literacy among the target students.

RESULT AND DISCUSSION

Profile of MAN 1 Ngawi

MAN 1 Ngawi is one of the leading Islamic senior high schools in Ngawi Regency with a long history dating back to 1967. Initially established as a private institution under the auspices of *Nahdlatul Ulama* (NU), its status was transformed into a State Islamic Senior High School (Madrasah Aliyah Negeri) in 1993 based on the Decree of the Minister of Religious Affairs No. 244 of 1993. Currently, the school holds the status of a Research Madrasah with an A (Excellent) accreditation. The institution educates 1,048 students divided into acceleration, excellent, and regular classes with specialization programs in Natural Sciences, Social Sciences, and Religious Studies ('Profil Madrasah – MAN 1 NGAWI').

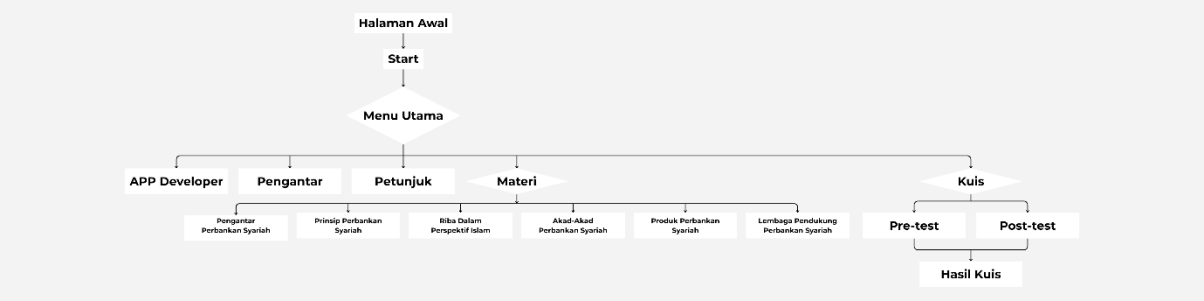
The school adopts the vision of CERIA (Smart, Independent, High-Achieving, and Noble in Character). To achieve this vision, MAN 1 Ngawi implements the Merdeka Curriculum, strengthened by flagship programs such as digital literacy enhancement, vocational education (culinary arts, fashion design, welding engineering, and multimedia), and research development. Its primary goal is to produce a generation of Muslim students who are academically competent, possess life skills, and are able to compete in national university entrance selections ('Profil Madrasah – MAN 1 NGAWI').

Development Stages

The research findings include the stages of needs analysis, design, development, final product results, and the trial results of the ShariaLearn application in improving the Islamic banking literacy of students at MAN 1 Ngawi. The development process was carried out systematically based on the ADDIE model. The ADDIE stages consist of analysis, design, development, implementation, and evaluation. The analysis stage aimed to identify learning needs, user characteristics, and media conditions at MAN 1 Ngawi as the basis for developing the ShariaLearn application (Rayanto & Sugianti, 2020, p. 34). The results of the needs analysis indicated that students' understanding of Islamic banking concepts was still low and limited to conventional learning methods, while the potential use of smartphones was very high. In terms of characteristics, students tended to understand materials more easily through interactive visualizations rather than lengthy texts. Therefore, the materials were systematically and contextually organized, covering basic principles to Islamic contracts, and designed as a relevant digital solution to facilitate independent, interactive learning in accordance with technological advancements.

The design stage was the process of developing the systematic framework of the ShariaLearn application, which included the menu structure, learning materials, evaluation instruments, and developer profile (Rayanto & Sugianti, 2020, p. 35). The menu structure was designed based on user-friendly principles to facilitate independent navigation, while the materials were prepared using communicative and contextual language appropriate to the comprehension level of senior high school students (SMA/SMK/MA). The evaluation instruments, consisting of multiple-choice questions (pre-test and post-test), were designed to measure the effectiveness of the application in improving students' understanding.

Figure 1. ShariaLearn Application Flowchart



Sources: Developed by the Author in 2026

The entire application flow was mapped through a flowchart as shown in figure 1, guiding users from the home page, access to comprehensive learning materials, to the evaluation quiz stage in order to identify improvements in students' Islamic banking literacy. (Sulasmoro, 2022, p. 51).

The development stage involved product creation, expert validation, and revisions to refine the ShariaLearn application (Rayanto & Sugianti, 2020, p. 36). The development process was carried out by integrating the design framework into APK format so that it could be flexibly used on students' Android devices. Furthermore, the application was validated by material experts to ensure the accuracy of the Islamic banking content and by media experts to assess visual and navigation aspects. Based on the validators' suggestions, revisions were made to both the material substance and the interface design in order to produce a final product that was feasible, effective, and ready to be used to improve Islamic banking literacy at MAN 1 Ngawi.

The implementation stage was the process of applying the ShariaLearn application to students at MAN 1 Ngawi to test its effectiveness in learning activities (Rayanto & Sugianti, 2020, p. 37). The activities began with a pre-test to measure students' initial literacy levels regarding Islamic banking concepts. Subsequently, students interacted directly with the application independently, studied the systematic and interactive materials, and completed practice quizzes. This stage emphasized students' active involvement in utilizing the application's features to independently deepen their understanding of Islamic banking materials.

The evaluation stage was carried out by administering a post-test to students after they had studied the materials in the ShariaLearn application. The post-test results were then compared with the pre-test results to objectively measure the improvement in students'

understanding. This process aimed not only to assess learning outcomes but also to evaluate the effectiveness of the application as a learning medium (Rayanto & Sugianti, 2020, p. 38). The evaluation results served as the basis for drawing conclusions regarding the success of the product development in improving students' Islamic banking literacy, as well as becoming a reflection material for further development.

Development Results

The result of this study is a mobile-based educational application called ShariaLearn, which was designed to improve the Islamic banking literacy of students at MAN 1 Ngawi. The developed application went through several stages, including analysis, design, development and expert validation, revisions, and student trials. The product was declared feasible in terms of both content and design. As an introduction, the application is equipped with a minimalist and attractive welcome screen before users access the main features, as shown in figure 2.

Figure 2. Initial Display of the ShariaLearn Application

Sources: Developed by the Author in 2026

Through the main menu display shown in figure 3, users can access various important features such as the developer profile, introduction, user instructions, learning materials, and quizzes. This menu structure was systematically organized to ensure ease of navigation and to create a more effective and efficient learning experience.

Figure 3. Initial Interface of the ShariaLearn Application

Sources: Developed by the Author in 2026

The learning materials menu shown in figure 4 presents content that is systematically organized, covering introductions, basic principles, the concept of *riba*, types of contracts, products, and supporting institutions of Islamic banking.

Figure 4. Materials in the ShariaLearn Application

Sources: Developed by the Author in 2026

The materials are presented in the form of text combined with visual elements such as illustrations and infographics, helping students understand concepts more easily. The materials are also designed to be studied independently by students through digital devices.

Figure 5. Quiz in the ShariaLearn Application

Sources: Developed by the Author in 2026

As shown in figure 5, this application provides interactive quiz features in the form of a pre-test to measure students' initial understanding and a post-test to evaluate the improvement of their understanding after the learning process. The simple yet attractive quiz design aims to increase students' active engagement. Overall, ShariaLearn functions not only as a medium for delivering materials but also as an effective interactive learning tool in supporting students' understanding of Islamic banking concepts.

Expert Validation Results

After the product was developed, validation was conducted by material experts and media experts to assess the feasibility of the ShariaLearn application. The assessment used structured instruments analyzed through score calculations to determine the product validity category. These validation results became the main reference for improving the application before the implementation stage. The level of media feasibility was then interpreted into five categories according to table 2, namely very unfeasible, unfeasible, fairly feasible, feasible, and very feasible (Saputra, 2021, p. 50). The interpretation criteria for material and media feasibility can be seen in the following table:

Table 2. Media Feasibility Criteria

Percentage	Category
0% – 20%	Very Unfeasible
21% – 40%	Unfeasible
41% – 60%	Fairly Feasible
61% – 80%	Feasible
81% – 100%	Very Feasible

Source: Saputra, 2021, p. 50

Based on the results of the product validation calculations conducted by the material expert validators, different feasibility percentage scores were obtained from each validator. The first validator gave a score of 58 out of the ideal score of 68, resulting in a feasibility percentage of 85,3%, which falls into the very feasible category. Furthermore, the second validator gave a score of 54 out of the ideal score of 68, resulting in a feasibility percentage of 79,5%, which falls into the feasible category. Meanwhile, the third validator gave a score of 64 out of the ideal score of 68, resulting in a feasibility percentage of 94,12%, which falls into the very feasible category. These assessment results indicate that overall, the developed ShariaLearn application has met the feasibility criteria in terms of material aspects. The application was considered to be in accordance with Islamic banking concepts and suitable for use as a learning medium to improve students' Islamic banking literacy.

The media validation was conducted by an information systems developer from FEBI UIN Ponorogo to assess the visual and technical aspects of the ShariaLearn application. The validation results showed a feasibility percentage of 87,5%, placing the application in the very feasible category. This achievement demonstrates that the design and functionality of the media are in accordance with students' characteristics and meet the quality standards required for use in the learning process.

Product Revision

The ShariaLearn application underwent validation by material experts and media experts to ensure the feasibility of its content and visual quality. Although the application was considered attractive and communicative, the media expert validator provided suggestions for improvement regarding technical aspects. One of the main evaluation points was the font size used in the materials, which was considered too small, as shown in figure 6, and therefore needed to be enlarged to improve readability and user comfort.

Figure 6. ShariaLearn Application Display Before Font Size Revision

Sources: Developed by the Author in 2026

Therefore, a revision was made by enlarging the font size to make it clearer, more proportional, and easier for students to read. This improvement is expected to enhance readability and optimize students' understanding of the material, as shown in figure 7.

Figure 7. ShariaLearn Application Display After Font Size Revision

Sources: Developed by the Author in 2026

In addition, as shown in figure 8, the media validator also suggested adding audio elements that were previously unavailable in several sections of the learning materials.

Figure 8. ShariaLearn Application Display Before Audio Addition

Sources: Developed by the Author in 2026

As shown in figure 9, the addition of audio aims to enrich students' learning experiences through the use of multiple sensory channels, enabling the materials to be understood more easily by students.

Figure 9. ShariaLearn Application Display After Audio Addition

Sources: Developed by the Author in 2026

With the addition of audio, students are expected to understand the materials more easily. Based on these suggestions, the researcher revised the application by improving the font size and adding audio features to certain sections of the learning materials. The revision

results indicate an improvement in the application's visual quality and interactivity compared to the previous version.

Limited Trial Results

After the product was revised, the ShariaLearn application was directly implemented with tenth, eleventh, and twelfth-grade students at MAN 1 Ngawi to test its effectiveness. This process involved students as the primary users who accessed the learning materials and completed evaluations within the application. The stages began with a pre-test to measure students' initial understanding, followed by a learning session using the application, and concluded with a post-test to measure the improvement in students' understanding after using the media. The following are the student data and the pre-test and post-test scores obtained during the ShariaLearn application trial:

Table 3. Student Data and Pre-Test and Post-Test Results

No.	Name	Class	Score	
			Pre-Test	Post-Test
1.	FZMA	10B	65	100
2.	RZL	10B	60	95
3.	A	10G	90	100
4.	LTP	X-SKS	100	100
5.	QCP	10G	75	100
6.	FSA	10G	95	100
7.	ANA	10B	75	100
8.	AIR	X-SKS	85	100
9.	K	X-SKS	50	100
10.	IFAZ	10C	60	100
11.	AB	11 Social Science 1	65	95
12.	HA	11 Social Science 1	35	90
13.	MKR	11 Natural Science 6	55	95
14.	NKLA	11 Natural Science 3	55	95
15.	CBP	11 Natural Science 2	100	100
16.	AAB	11 Natural Science 3	95	100
17.	MAAP	11 Natural Science 2	65	100
18.	MAPPD	11 Natural Science 2	65	100
19.	WDAF	11 Social Science 1	55	95
20.	JUP	11 Social Science 1	80	100
21.	SAHS	12 Natural Science 2	75	100
22.	SAHS	12 Social Science 2	40	95
23.	RZ	12 Social Science 1	95	100
24.	NFS	12 Natural Science 3	90	100
25.	YBF	12 Social Science 1	55	95
26.	AYP	12 Social Science 3	70	100
27.	AA	12 Natural Science 4	35	100

No.	Name	Class	Score	
			Pre-Test	Post-Test
28.	FDP	12 Natural Science 6	70	100
29.	APO	12 Science and Technology 5	65	100
30.	FL	12 Science and Technology 5	70	100

Source: Primary Data Processed in 2026

The pre-test and post-test score data presented in table 3 were statistically analyzed using a paired t-test to measure the effectiveness of the ShariaLearn application. This test aimed to identify whether there were significant differences in students' learning outcomes before and after using the application. The results of the analysis are presented in the following figure:

Table 4. Paired T-Test Results

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	PreTest - PostTest	-29,167	18,620	3,399	-36,119	-22,214	-8,580	29	,000

Source: Primary Data was Processed with SPSS 24 in 2026

Based on the results of the paired samples test in table 4, the significance value obtained was 0,000, which is smaller than the significance level of 0,05. This indicates that there is a significant difference between students' pre-test and post-test scores after using the ShariaLearn application. Therefore, it can be concluded that the use of the application is effective in significantly improving the learning outcomes and understanding of MAN 1 Ngawi students regarding Islamic banking materials.

Development of an Educational Application to Improve Islamic Banking Literacy Among Students at MAN 1 Ngawi

The development of the ShariaLearn application aims to provide a systematic and contextual learning medium to improve students' understanding of Islamic banking literacy. This study applied the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation), which includes needs analysis, design, development through expert validation and revisions, implementation, and evaluation through effectiveness testing (Rayanto & Sugianti, 2020, p. 33). These stages were carried out gradually to ensure that the resulting product was truly aligned with the needs of students at MAN 1 Ngawi and possessed adequate quality for use in learning activities.

Based on interviews with teachers at MAN 1 Ngawi, it was found that students' understanding of Islamic banking concepts was still limited because the materials provided tended to be general in nature. Students had difficulty distinguishing between interest-based and profit-sharing mechanisms and had not yet fully understood the application of Islamic

contracts in everyday practice. This condition indicates an urgent need for more structured and contextual learning media to help students gain a deeper understanding of the principles and products of Islamic banking.

The ShariaLearn application presents comprehensive Islamic banking literacy materials, including the definition of banking, differences between Islamic and conventional systems, basic principles, the concept of *riba*, types of contracts, products, and supporting institutions. These materials were developed based on Islamic banking theory, which emphasizes the operation of financial institutions based on the principles of justice, partnership, transparency, and the prohibition of *riba* in every transaction (UU Nomor 21 Tahun 2008, p. 3). Understanding these concepts is important for students so that they can recognize the Islamic financial system more comprehensively. In addition to conceptual materials, the ShariaLearn application provides examples of the practical application of contracts in daily life, such as *mudharabah*, *musyarakah*, *murabahah*, *ijarah*, *wadiah*, and *qardhul hasan*. The integration of these practical examples aims to bridge Islamic banking theory with economic realities in society, enabling students to gain a concrete understanding of the implementation of Islamic systems in economic activities.

The development of the ShariaLearn application applied Richard Mayer's multimedia learning theory, which states that learning becomes more effective through the simultaneous integration of visual and verbal elements (Hanifah et al., 2023, pp. 75–76). The ShariaLearn application presents materials through a combination of text, visual illustrations, and interactive infographics to facilitate students' understanding of concepts. The systematic structure of the materials and the attractive visual design were intended to increase students' learning interest while strengthening their information retention.

Compared to previous studies, the development of the ShariaLearn application has several similarities and differences. Previous studies demonstrated that the development of learning media such as booklets (Restutiasih et al., 2024), Adobe Flash-based media (Sari, 2019), and Pop-Up books (Yurnasari, 2021) was able to improve students' understanding of the materials being studied. This study shares similarities with previous research in the use of the Research and Development (R&D) approach to produce feasible learning media. However, its novelty lies in the development of a smartphone application specifically designed to improve Islamic banking literacy among Madrasah Aliyah students, particularly at MAN 1 Ngawi. The application integrates multimedia and interactive elements to support independent learning through students' digital devices.

Effectiveness of the Educational Application in Improving Islamic Banking Literacy Among Students at MAN 1 Ngawi

The results of the paired sample t-test showed a significant difference between students' pre-test and post-test scores, with a significance level of 0,000, which is smaller than the predetermined significance level of 0,05. This proves that the ShariaLearn educational application is effective in significantly improving Islamic banking literacy among students at MAN 1 Ngawi. The improvement in learning outcomes demonstrates the effectiveness of

application-based media in helping students understand the materials in a systematic and engaging manner.

Through the combination of text and visuals, ShariaLearn encourages students to learn more actively and independently, in line with Richard Mayer's multimedia learning principle Richard Mayer (Hanifah et al., 2023, pp. 75–76), which states that learning becomes more effective when information is delivered through a combination of visual and verbal elements simultaneously. Through the integration of text, images, and interactive navigation within the application, students are able to process information through more than one cognitive channel, thereby optimizing their understanding of the material.

This study shows that application-based learning media help students understand Islamic banking material more easily through visual and interactive presentations. This is in line with the fundamental concept of Islamic banking, which emphasizes the operation of financial systems based on the principles of justice, partnership, and transparency in every economic activity (UU Nomor 21 Tahun 2008, p. 3). Through more engaging and communicative learning media, students not only gain conceptual understanding but are also able to recognize the relevance of applying these principles in real-life situations.

These findings reinforce previous studies stating that the development of learning media can improve the effectiveness of the learning process. In line with research on the development of booklets for basic banking subjects, systematically designed media have been proven to facilitate students' understanding of the material (Pramika & Aradea, 2024). Similarly, studies on Adobe Flash-based mathematics learning media Adobe Flash (Sari, 2019), and Pop-Up picture book media (Yurnasari, 2021) demonstrate that development research using the Research and Development (R&D) model by Borg and Gall shows that engaging and interactive learning media achieve high feasibility levels and are able to significantly improve students' understanding.

This study offers novelty compared to previous studies, which generally focused on printed media or simple visual media. The novelty lies in the development of the ShariaLearn application, an interactive multimedia-based platform specifically designed to improve Islamic banking literacy among Madrasah Aliyah students. The application integrates systematically organized materials with visual elements and interactive navigation tailored to the learning characteristics of secondary-level students.

The results of this study prove that multimedia-based educational applications have great potential to improve the quality of learning for conceptual subjects such as Islamic banking. The significant difference between pre-test and post-test scores serves as evidence that innovative media can help students understand Islamic economics comprehensively. Therefore, ShariaLearn can serve as an effective alternative learning medium to enhance Islamic banking literacy among Madrasah Aliyah students.

CONCLUSION

The development of the ShariaLearn application was carried out using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) to provide a

systematic and contextual Islamic banking learning medium. The materials, which cover fundamental principles, contracts, and Islamic banking products, are presented through the integration of text, visual elements, and interactive features. This multimedia approach is designed to make the learning process more engaging and to help students independently understand complex Islamic banking concepts more easily.

The results of the effectiveness test using a paired sample t-test showed a significance value of 0,000, which is smaller than 0,05, proving that there was a significant improvement in students' understanding after using the application. The clear difference between the pre-test and post-test scores confirms that ShariaLearn is effective in improving Islamic banking literacy at MAN 1 Ngawi. These findings reinforce the multimedia learning theory, which states that the integration of visual and verbal elements in digital media can help students process information more effectively and improve the quality of learning.

Based on the research findings, teachers are encouraged to utilize the ShariaLearn application as an alternative learning medium to facilitate the explanation of abstract Islamic banking concepts in an engaging manner. For students, this application should be used as a flexible independent learning tool to deepen their understanding of Islamic financial literacy. At the institutional level, schools are expected to continue adopting digital innovations to improve the quality of learning. Meanwhile, future researchers are encouraged to expand the scope of research subjects and enhance the application's features so that its contribution to the development of Islamic economics learning media becomes broader and more comprehensive.

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