

Digital module development of islamic education to improve student independence in learning at middle school program

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Abstract

Purpose: This study aimed to identify the need, design, validity, practicality, and effectiveness of developing digital modules for Islamic Religious Education to enhance students' learning independence.

Research methodology: This study examines a type of research and development (R&D) and develops a digital module for Islamic Education using the ADDIE model (analysis, design, development, implementation, evaluation). A learning independence questionnaire was administered to 70 students at Insan Cendekia Madani Middle School, Serpong, to assess the effectiveness of the module delivered via an online platform.

Results: The results indicate the need for a digital Islamic Religious Education module to enhance students' learning independence. The design produced a module, supporting tools, and research instruments. Validation tests confirmed the validity of the module based on expert evaluations.

Conclusion: The developed digital Islamic Religious Education module is a valid and potentially effective tool for promoting student learning independence. The structured design and integration with online platforms support interactive, flexible, and self-paced learning, which aligns with current educational demands.

Limitation: This research was limited to a single school context with a relatively small sample size of 70 students, which may affect the generalizability of the findings to other regions or educational settings. Furthermore, this study primarily measured short-term learning independence without assessing its long-term impact.

Contribution: This study contributes to the growing body of literature on digital learning in Islamic Religious Education by offering a validated and practical module design based on the ADDIE model. It provides a replicable framework for educators and policymakers seeking to enhance independent learning through technology-assisted instruction in similar educational contexts in the future.

Keywords: *Digital Module, Islamic Education Learning, Independent Learning*

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1. Introduction

Islamic religious education, as one of the subjects taught in schools, plays a very important strategic role in forming strong student characters in terms of ethics, science, and technology. However, currently, we see the reality that Islamic Religious Education (PAI) learning in schools has become the focus of education experts, and that Islamic Religious Education (PAI) learning is less successful in

instilling moral and religious values in students. Islamic Religious Education (PAI) is a lesson required to develop values and personality traits that can be internalized in each lesson to increase students' attitudes toward independence and responsibility in the learning process. Students no longer have an attitude of dependence or reliance on other people (teachers, friends, and parents) or even depend on their environment to carry out the learning process. The Islamic Religious Education (PAI) learning module is hoped to fully support the realization of students' independent attitudes in learning.

According to Hetsevich (2017), digital modules are an interesting alternative to teaching materials because they are not only materials and images that can be loaded, but also audio and video that are appropriate to the learning material. In addition, digital modules allow students to manage their study time effectively. Muhimatunnafingah, Herimanto, and Musadad (2018) stated that digital modules can be designed in such a way as to be attractive, and this is different from printed modules that are usually colorless, so the image is less clear (Caratiquit & Caratiquit, 2023; Lichauco, Molina, Tengco, & Vidallo, 2023; Muhimatunnafingah et al., 2018). Digital modules are designed to provide more interesting presentations and opportunities for students to learn easily, and can be accessed anytime and anywhere, so that each student can fulfill their responsibilities as an independent student. The 21st century is currently faced with digital transformation, and reflections on this transformation have been seen in various fields, including the book industry, which initially used many printed versions of books until they evolved into digital ones. Digital modules are the result of content collaboration between modules and digital devices, which makes it possible to create files in certain formats that are more effective, efficient, and attractive. The use of digital modules can make learning more interesting, easy to understand, practical, and easy to use, without being limited by space and time, and can reduce students' dependence on smartphones in learning (Muslim, 2023; Suaduon, Syarif, & Nugraha, 2020; Syarif & Riza, 2022).

Currently, digital modules are necessary for the learning process, which can occur anywhere and at any time. Apart from the development of increasingly sophisticated smartphones, students can quickly learn certain materials. Students also increasingly have more choices about when to study, determining study locations, and the content to be studied (Al Rawashdeh, Mohammed, Al Arab, Alara, & Al-Rawashdeh, 2021). This digital module for Islamic Religious Education is an effort to realize learning goals maximally and comprehensively so that national education goals are achieved, as stated in Article 3 of Law no. 20 of 2003. Based on the statements above, it is necessary to develop a digital module for Islamic Religious Education to increase student learning independence and help students develop insight, knowledge, attitudes, and skills in the material being studied. Previous research related to the development of digital modules to increase learning independence (Hadi & Hidayat, 2024) revealed that, based on the data obtained, 25.8% of students had learning independence to achieve learning goals. The results of the questionnaire given to students show that 67% of them want teaching materials in the form of modules that can be used as a guide for learning.

Furthermore, research by (Fazriani, Wulandari, & Frasida, 2024) revealed that independence also influences student learning outcomes. The results of her research revealed that an average pre-test score of 60 experienced an increase to an average score of 86.7. The use of Islamic Religious Education (PAI) learning modules influences learning outcomes by 85% in Madrasah Ibtidaiyah 3 Penatasewu, Indonesia. The results of the analysis show that clear, relevant Islamic Religious Education (PAI) learning modules have a significantly high influence on increasing students' learning independence. However, in reality, after observing and interviewing Islamic Religious Education teachers and students at the Insan Scholar Madani Middle School BSD Serpong, South Tangerang, Banten, the learning process in schools is currently less effective. This is because no modules are used in Islamic Religious Education. There is no digital module for Islamic Religious Education that can increase students independence. The teacher also explained that student learning independence was still relatively low, which was obtained from observations that showed that students were still highly dependent on teachers and peers in the learning process. In fact, quite a few students still depend on their parents to carry out the learning process; for example, some students still need to be reminded by their parents when completing their learning assignments (Longpoe & Adebisi, 2023; Parela, 2022; Quah, 2023; Yahya & Yani, 2023).

The Insan Scholar Madani Middle School, Serpong, South Tangerang, lacks Islamic Religious Education modules to support independent learning. Teachers provide materials or teaching materials to students referring only to the textbooks used, both textbooks that refer to the National Curriculum or the Madani Curriculum (typical of schools). Therefore, ongoing learning requires more effort to make it creative and enjoyable. The lack of presenting material such as digital modules used during learning, the use of broadcast material, and strategies that are still boring make students lazy and bored, thus affecting their learning independence. Based on the results of initial observations that have been carried out and interviews with teachers and students regarding the use of digital modules for Islamic Religious Education, that at the Insan Scholar Madani Junior High School (SMP) BSD Serpong, South Tangerang City, there are no digital modules for Islamic Religious Education and learning that uses them. Islamic Religious Education digital module to increase student learning independence (Anwar, 2023a, 2023b).

These empirical data support the need for further research to increase student learning independence and provide a strong foundation for this study. In this research and development, the Islamic Religious Education (PAI) digital module will be developed optimally, creatively, and innovatively by paying attention to its validity, practicality, and effectiveness, so that the results can increase students' learning independence.

1.1 Problem Formulation

Based on the background described above, this problem can be formulated as follows:

1. What is the need to develop digital modules for Islamic Religious Education to increase students' learning independence?
2. How is the Islamic Religious Education digital module designed to increase student learning independence?
3. How is the validity of the digital module for Islamic Religious Education developed to increase students' learning independence?
4. How practical is the Islamic Religious Education digital module in increasing students' learning independence?
5. How effective is the Islamic Religious Education digital module in increasing students' learning independence?

1.2 Research Objectives

The objectives of this study were as follows.

1. It is necessary to develop digital modules for Islamic Religious Education to increase students' learning independence.
2. The design of digital modules for Islamic Religious Education to increase students' learning independence.
3. The validity of the Islamic Religious Education digital module to increase student learning independence has been developed.
4. This study aims to determine the practicality of the Islamic Religious Education digital module in increasing student learning independence.
5. This study aims to determine the effectiveness of the Islamic Religious Education digital module in increasing students' learning independence.

2. Literature Review

2.1. Learning Module Development

Modules support and realize the development of learning materials. Currently, the development of learning materials in the form of modules is urgently required. This is a consequence of implementing a competency-based unit-level curriculum in schools. The competency approach requires the use of modules for learning implementation. Modules can help schools achieve quality learning outcomes. The application of modules can condition learning activities to be well-planned, independent, complete, and have clear results (output). The learning module developed is one way to construct students' knowledge in the teaching and learning process. Modules are an effective, efficient, and maximal way

to maximize the diversity of students' potential and provide unlimited time to explore information, deepen knowledge, and construct an understanding of the learning process.

Many principles of module development must be considered. Modules must be developed based on the results of the needs and condition analyses. You need to know exactly what learning materials should be organized into modules, how many modules are needed, who will use them, and what resources are required. Next, based on various objective data and information obtained from the analysis of needs and conditions, a module design that is considered the most appropriate is developed. What forms, structures, and component modules satisfy the various existing needs and conditions?

In accordance with the developed design, the required modules were arranged. The module development process consisted of three main phases. First, appropriate learning strategies and media were identified for each topic. At this stage, it is necessary to pay attention to the various characteristics of the competencies to be studied, the characteristics of the students, and the context and situation in which the modules will be used for the following reasons. Second, it produces or realizes physical modules. Module component content and others, including learning objectives, required learning prerequisites, content or substantive learning material, forms of learning activities, and supporting elements. Third, assessment tools were developed. It should be noted that all aspects of competence (knowledge, skills, and related attitudes) can be assessed using predetermined criteria.

2.2. Module Development as a Learning Resource

The rapid flow of information in society requires everyone to work hard to follow and understand; otherwise, they will be left behind. Likewise, in learning at school, to obtain optimal results, you are required not only to rely on what is in the classroom but also to be able and willing to explore the various learning resources that are needed. Teachers are required not only to utilize what is available at school but also to study various other learning sources such as magazines, newspapers, and the Internet. This is important so that what is learned is in accordance with the conditions and development of society, and does not create a gap in students' thinking patterns.

Module needs analysis is an activity of analyzing the syllabus and RPP to obtain module information that students need to learn the competencies that have been programmed. Based on the needs analysis, the module sections were developed, and the module names or titles were adjusted to the competencies contained in the syllabus and RPP. This is also done to identify and determine the number and title of modules that must be developed in a particular program unit that can be outlined in one academic year, one semester, and/or one lesson, namely, Islamic Religious Education. A module is a learning resource or material that can be used in teaching and learning. According to Suharjono (2001), teaching materials are used as textbooks in a particular field of study, which are standard books prepared by experts in the field for instructional purposes and objectives; they are equipped with teaching tools that are harmonious and easy to understand by users in schools and colleges, so that they can support a teaching program.

It is important for teachers to develop modules to improve the quality and efficiency of their learning processes. The developed modules play an important role for both teachers and students. When developing modules, teachers must pay attention to the procedures and components. These components included subject reviews, introductions, learning activities, exercises, summaries, formative tests, and answer keys for formative and follow-up tests. Modules can be used in the learning process of a class in individual or classical learning systems. According to Sungkono, Wirasti, Suyanto, Sofyan, and Karsimin (2009), if learning with a module system is applied to classical learning, students will learn simultaneously and proceed to the next module simultaneously. Students who finish faster than their friends will receive an enrichment module to study for the remaining time. Subsequently, an evaluation is carried out, which can be performed individually or in a group.

2.3. Islamic Religious Education Learning Media

The Islamic Religious Education digital module is needed to make it an interesting, creative, and innovative learning resource, which still pays attention to the integrity of the material in developing

students' academic aspects, attitudes, and skills, as well as an effort to increase students' independent learning attitudes in the teaching and learning process.

Digital modules are a form of independent learning material that are arranged systematically and displayed in electronic, audio, animation, and navigation formats (Abubakar, Ibrahim, Zakaria, & Kassim, 2023; Seruni, Munawaroh, Kurniadewi, & Nurjayadi, 2019). Digital modules can help students learn independently through the use of electronic media. Digital modules also play an important role in learning processes. The use of digital modules enables effective learning because they can help students who experience learning difficulties, make it easier for students to study subjects in a structured, systematic manner, and present the material in a sequential format. The digital module contains materials and practice questions that make it easier for students to learn the material (Herawati & Muhtadi, 2018; Juliyan, Noor, & Suharto, 2021; Putri, Mazni, & Suharto, 2021; Setiaji, Suharto, & Mazni, 2021).

A good digital module has several characteristics, namely, self-instruction, self-containment, stand-alone, adaptability, and user-friendliness. Digital learning modules are presented using electronic media, so that the characteristics of digital modules are the same as those of modules, namely, self-instruction, self-contained, stand-alone, adaptive, and user-friendly. Self-instruction is a crucial characteristic of digital modules and must be included. A digital module contains instructions that make it easy for students to use, and students also know the learning objectives, for example, what they must achieve to achieve a learning goal. Self-content is the teaching material contained in the module that allows students to thoroughly examine the material. A stand-alone digital learning module is one that does not depend on other teaching materials or require other supporting tools for its use. Adaptive learning is a digital learning module that can adapt to scientific and technological developments. A good electronic module must be able to adapt to developments in science and technology. A digital module is said to be adaptive if it is in accordance with developments in science and technology and is suitable for use in the field. A user-friendly digital module must be friendly or familiar to the user. Every description and instruction that is still in the digital module (Digital Module) is helpful and user-friendly. One example is said to be a friendly digital module that uses simple and easy-to-understand language and commonly used terms so that it is easy to understand (Baron, 2023; Baron & Robles, 2023; Herawati & Muhtadi, 2018).

2.4. Relevant Research

No other researchers have discussed the title of this paper. Several researchers have discussed the development of Islamic Religious Education Learning Modules.

1. **Muh. Iqbal** wrote about the development of science-based Islamic religious education (PAI) learning tools in junior high schools in 2021. The title of this dissertation describes how good and appropriate science-based Islamic religious education learning tools can be implemented by teachers in the classroom. The tools developed in this research are Learning Implementation Plans (RPP), Teaching Materials, and Student Worksheets (LKS).
2. **Moh. Assauqi (2020)** wrote about the development of digital-based PAI learning modules for early childhood. In the title of this paper, the author only describes how digital-based learning modules can be used in early childhood education. In this study, only teaching materials that can be used in the PAI learning process for early childhood were developed. The targets of this research are students in Early Childhood Education, which is carried out at preschool age (4-6 years old), by educational institutions called Kindergarten and Raudhatul Atfal.
3. **Eva Nurzaimi** wrote about the development of electronic-based learning modules to improve students' understanding of Islamic religious education (PAI) subject matter at SMP Negeri 43 Pekanbaru in 2022. In the title of this paper, the author describes how electronic-based learning modules can improve students' understanding of Islamic Religious Education.

Based on the relevant research above, researchers conducted this research and development titled "Development of Digital Modules for Islamic Religious Education (PAI) to Increase Student Learning Independence in Junior High Schools." This research prioritizes the development of digital modules for Islamic Religious Education to increase students' learning independence. The targets of this study were

junior high school (SMP) students in Indonesia. The digital modules developed for Islamic Religious Education include learning steps (RPP), teaching materials, and assessments).

3. Research Methodology

3.1. Research Approaches and Types

Research on developing digital modules for Islamic Religious Education to increase student learning independence was conducted from July to October 2023. This research was conducted at the Insan Scholar Madani BSD Junior High School (SMP) and other schools in the South Tangerang City area of Banten. This research method involves research and development (R&D), which produces a product in the form of a digital module for Islamic Religious Education to increase student learning independence in junior high school. The population used in this study was junior high school (SMP) students in South Tangerang City. The sample consisted of 70 students from Classes VIII and IX of Insan Scholar Madani Middle School, BSD Serpong, South Tangerang City.

3.2. Research Instrument

The data collection techniques used in this study consisted of the following:

a. Interview

Interview techniques were used to collect data on the importance of developing digital modules for teachers and students to obtain in-depth feedback on the use of Islamic Religious Education digital modules in increasing student learning independence and to evaluate Islamic Religious Education digital modules to increase learning independence for students who use them.

b. Questionnaire

A questionnaire is a data collection method, and the instrument is called according to the name of the method. The questionnaire was in the form of a sheet that contained questions answered by the respondents based on events that had occurred in the field. The questionnaire included the following items:

1. A questionnaire or validation questionnaire regarding the accuracy of the design and appropriateness of the material included in the development of the Islamic Religious Education digital module to increase student learning independence in its use; users are given during product trials to evaluate the product so that they can get a better one.
2. Questionnaires regarding student learning independence, such as independence in studying Islamic Religious Education books and preparing study plans, independence in finding solutions when facing difficulties in learning, taking notes, the ability to re-read material or make summaries, and independence in managing one's schedule.
3. A questionnaire or experience questionnaire using a digital module that contains questions about the user's experience in using the digital module, user involvement and satisfaction with the content and features of the digital module, and ease of use, clarity of instructions, and usefulness of the digital module.

The following is a grid of digital module development assessment instruments for expert use.

Table 1. Assessment instrument grid

No	Aspect	Indicator
1	Eligibility of Content / Material	Clarity of material
		Relevance of the material
		Material suitability
		Ease of understanding
		Systematic, coherent, clear logical flow
2	Language	Language Suitability
		Accuracy of language use
		Use of readability aids
3	Presentation and Graphics	Presentation of content
		Use of visual media
		Color and contrast

Data obtained from the results of the validation tests by material and media experts, as well as field tests by students and teachers, were calculated or opinionated using a Likert scale ranging from 1 (Strongly Agree) to 4 (Strongly Disagree). The success percentage was calculated as follows:

$$P = \left(\frac{S}{N} \right) \times 100\%$$

Note: P = Percentage of success (%)

S= Total value obtained

N= Maximum number of values

The Likert scale score was then used to explain the percentage of scores obtained, which was measured as follows:

Table 2. Likert Scale Interpretation

Percentage	Interpretation
0% - 25%	Very Not Good
26% - 50 %	Not good
51% - 75%	Good
76% - 100%	Very good

Source: Sugiyono (2011)

The research will be said to be successful if the questionnaire data that has been processed gets a score between 51% and 100%, or in the interpretation of "Good" and "Very Good."

As for the instrument grid for student learning independence, which is based on relevant theories and supported by empirical data, indicators of student learning independence can be formulated as follows: 1) motivation to learn, 2) initiative, 3) self-confidence, 3) discipline, and 5) sense of responsibility. The following is a grid of student learning independence instruments.

Table 3. Student Learning Independence Instrument Grid

No	Indicator	Question items
1	Have Motivation to Learn	1, 4, 7 dan 15
2	Have Initiative	2, 3, 5, 6 dan 11
3	Have self-confidence	8, 10, 14, 16 dan 17
4	Behave	12, 19 dan 20
5	Have a sense of responsibility	9, 13 dan 18

The prepared grid is presented in Table 3. The next step was to compile the instrument items for each indicator. In this study, the instrument for measuring student learning independence consisted of 20 statement items, with each item having four answer choices: Strongly Agree (SS), Agree (S), Disagree (TS), and Strongly Disagree (STS).

Percentage	Interpretation
81,25% - 100%	Very high
62,50% - 81,24%	Tall
43,75% - 62,49%	Currently
25% - 43,74%	Low

After the instrument was prepared, consultation was carried out with experts, and then a trial was conducted on students of Classes VIII and IX of the Insan Scholar Madani Middle School, Serpong, South Tangerang.

c. Validation

A good instrument must fulfill two important requirements: validity and reliability. A valid instrument indicates that the measuring instrument used to obtain data is valid. Validity means that the instrument

can be used to measure what it is supposed to measure. To determine the validity of this instrument, which is in the form of descriptive questions, the product moment correlation formula was used, as Arikunto (2002, p. 144) explains that validity is a measure that shows the levels of validity or authenticity of an instrument. A valid or authentic instrument has high validity. However, an instrument that is less valid has a low validity.

To determine the validity of the Islamic Religious Education digital module questionnaire and student learning independence, the product-moment correlation formula was used as follows:

$$r_{xy} = \frac{N \sum xy - \sum x \sum y}{\sqrt{(N \sum x^2 - (\sum x)^2)(N \sum y^2 - (\sum y)^2)}}$$

With:

r_{xy} = Correlation coefficient between instrument item scores and total score

X = Respondent's score on the instrument item

Y = Total score on instrument items

To interpret the level of validity, the correlation coefficient was categorized according to the following criteria:

Coefficient Interval	Criteria
Between 0.00 to 0.200	Very low
Between 0.200 to 0.400	Low
Between 0.400 to 0.600	Enough
Between 0.600 to 0.800	High
Between 0.800 to 1.00	Very high

3.3. Data analysis technique

3.3.1. Data Analysis Needs Analysis Stage

The data analysis technique used in the needs analysis stage was descriptive qualitative analysis using percentage techniques. Needs analysis was conducted to determine student or teacher responses regarding the need to develop digital modules for Islamic Religious Education to increase student learning independence. The percentage technique was used for the data provided in the questionnaire. The formula used is:

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

Information:

P= Percentage number

f= The frequency the percentage is being searched for

N= Number of frequencies

3.3.2. Development Stage Data Analysis

a. Digital Module Validity Test

Data from the expert validation of the Islamic Religious Education digital module were analyzed by considering the assessment results, comments, and suggestions of the validators. The results of this analysis were used as guidelines for revising the learning products. The activities carried out in the data analysis process to validate the Islamic Religious Education digital module to increase student learning independence were as follows:

- 1) Recapitulate the results of the expert assessment in a table that includes

Aspects (Ai), b) criteria (Ki), and c) validator assessment results (Vi)

The average expert assessment results for each criterion are determined using the following formula:

$$K_i = \frac{\sum_{j=1}^n A_{ij}}{n}$$

Information:

$\bar{K}_i$ = average of the i-th criterion

V_{ij} = score from the assessment of the I-th criterion by the J-th assessor

n = number of assessors

- b. Determine the validity category for each criterion $\bar{K}_i$ or aspect average $\bar{A}_i$ or total average $\bar{X}$ with the validity category used. The validity categories were as follows:**

Table 4. Digital Module Validity Level Interval

No	Score Range	Criteria
1	$3,5 \leq X \leq 4,0$	Valid
2	$2,5 \leq X < 3,5$	Valid
3	$1,5 \leq X < 2,5$	Fairly Valid
4	$X < 1,5$	Invalid

The criteria used to decide that the Islamic Religious Education digital module can increase student learning independence has an adequate level of validity, namely the $\bar{X}$ value for all aspects is at least in the valid category and the $\bar{A}_i$ value for each aspect is at least in the quite valid category. If this is not the case, at least for each aspect, it is in a valid category.

c. Test the Validity of the Learning Implementation Plan (RPP)

Data from the experts' validation of the Islamic Religious Education Learning Implementation Plan were analyzed by considering the assessment results, comments, and suggestions from the validators. The results of this analysis were used as guidelines for revising the learning products. The activities carried out in the process of analyzing data on the validity of the Islamic Religious Education Learning Implementation Plan (RPP) to increase student learning independence were as follows:

Table. 5. RPP Implementation Category

No	Achievement Level (%)	Category
1	85 - 100	Very well done
2	75 - 84	Well done
3	60 - 74	Well done
4	55 - 59	Not implemented enough
5	0 - 54	Not implemented

Source: (Widoyoko, 2014:115)

3.3.3 Digital Module Practicality Test

The practicality test in this research and development was carried out by analyzing data from teacher assessments, student assessments, and observations of learning implementation using the Islamic Religious Education digital module. Observations regarding the practicality of the Islamic Religious Education digital module to increase student learning independence were carried out through learning by following the module syntax, which uses learning tools to support the digital module. The practicality of digital modules is aimed at implementing their use of digital modules.

a. Teacher and Student Assessment

The practicality of teacher and student assessments is generally analyzed and grouped based on the product being developed. Teacher response data will be obtained from the results of the questionnaire administered to teachers after use. Teacher response data were analyzed by examining the average scores of the teacher responses.

Student response data were analyzed by examining the average score of student responses. This means that the student response level was calculated by adding the average score of each respondent and

dividing it by the number of respondents. Student response data will be obtained from the results of the questionnaire administered to the students after learning ends.

Next, the average score was converted into qualitative data using the following criteria:

Table 6. Aspect Categories of Teacher and Student Responses

No	Average Score	Category	Information
1	0 – 1,4	Negative	Less Practical
2	1,5 – 2,4	Tends to be Negative	Quite Practical
3	2,5 – 3,4	Tends to be Positive	Practical
4	3,5 – 4,0	Positive	Very Practical

Source: (Syarifuddin, 2020)

4. Results and Discussions

4.1. Overview of Needs Analysis for the Development of Digital Modules for Islamic Religious Education.

At this needs analysis stage, we determined the need for learning Islamic Religious Education (PAI) at Insan Scholar Madani Middle School, South Tangerang City. In the needs analysis regarding teaching tools at Insan Scholar Madani Middle School, South Tangerang City, students did not use digital modules. A digital module for Islamic Religious Education is not yet available in schools. Based on the results of the questionnaire distribution, it can be concluded that 33 people (45.8% of the 70 junior high school students) liked group learning, while only five students liked individual learning. Therefore, researchers in developing digital modules should adapt to the characteristics of Insan Scholar Madani BSD South Tangerang City Middle School students, who like and are more interested in group learning and the use of audio-visual media. In this research, the researcher also carried out material analysis, namely the material chosen in this development was the material Respect and Obedience to Parents and Teachers in Class 8 and Believing in the Last Days in Class 9.

4.2 Curriculum and RPP analysis

The curriculum comprises a set of plans and arrangements regarding objectives, content, and teaching materials, as well as methods used as guidelines for implementing learning activities to achieve national educational goals. "Curriculum is the intentions and hopes expressed in the form of educational plans and programs implemented by educators in schools. A curriculum is an intention and plan, whereas implementation is a teaching and learning process. Those involved in the process are educators and students." (Sudjana, 2005).

Based on a preliminary survey, the Insan Scholar Madani BSD Middle School and Middle School are located in the South Tangerang City area. The analyses were carried out in July 2023, namely at the beginning of the 1st semester of the 2023-2024 academic year, through documentation study activities called Curriculum Breakdown at Insan Scholar Madani Middle School, South Tangerang City. Material analysis was conducted by analyzing the curriculum to adapt the digital modules that will be implemented in learning and selecting Core Competencies (KI) and Basic Competencies (KD), indicators, and materials to be developed. The materials in Islamic Religious Education Lessons are seen as boring, monotonous, and not easy for students to understand, and can be identified and arranged systematically.

Based on the results of the documentation study, the researchers obtained information that classes VIII and IX still use and refer to the K13 Curriculum, so that the learning tools developed also refer to the 2013 curriculum. In terms of material, it is in accordance with the applicable curriculum; therefore, no changes have been made to either the Core or Competency competencies. Basics to be achieved. Meanwhile, for the Learning Implementation Plan (RPP), changes and simplifications need to be included and used as a reference in using the Islamic Religious Education digital module in the process of achieving learning objectives. Thus, the implementation of Islamic Religious Education has not been optimal because the characteristics of the students are not in accordance with the learning being

conducted. Based on these conditions, researchers feel that it is necessary to create a Learning Implementation Plan (RPP) that is appropriate for the digital module and student characteristics.

4.3 Textbook Analysis

Textbook analysis was conducted in July 2023 at the Insan Scholar Madani BSD Middle School and Middle School in the South Tangerang City Region. Researchers conducted interviews with three teachers and five students and distributed questionnaires to 70 students by asking questions related to the teaching materials used during the learning process.

The researcher conducted interviews with Islamic Religious Education teachers at the Insan Scholar Madani Middle School BSD by asking several related questions, including the following:

1. Textbooks are used in teaching and learning processes.
2. Problems encountered by teachers during learning, especially when using textbooks.
3. Teacher mastery of technology that supports teaching materials in the learning process.
4. Teachers' expectations regarding the preparation of teaching materials.

Meanwhile, researchers and students conducted interviews and distributed questionnaires related to teaching materials, including the following questions.

1. Are the textbooks used by all students provided in their entirety by the teacher?
2. How often do students study Islamic Religious Education textbooks?
3. What expectations do students have regarding the use of teaching materials?

Based on the results of the interviews with teachers and students and the distribution of questionnaires, it is necessary to develop a digital module for Islamic Religious Education to increase students' learning independence in junior high schools..

4.4 Analysis of Student Questionnaires

Analysis of student questionnaires is a stage used by researchers to determine the need to develop digital modules for Islamic Religious Education. In this case, the Islamic Religious Education digital module increased student learning independence in several junior high schools in the South Tangerang area. This was done by providing an instrument in the form of a questionnaire sheet (in the form of a G-Form link), consisting of 15 questions involving 70 student respondents.

The results of the needs analysis questionnaire for the Islamic Religious Education digital module can be described by displaying several items with a high frequency and percentage of student responses as a basis for developing the Islamic Religious Education digital module to increase student learning independence, as shown in the following table:

Table 7. Frequency and Percentage Distribution of Need for Digital Modules for Islamic Religious Education to Increase Student Learning Independence

No	Question	<i>f</i>	%	Criteria
1	To what extent do you feel confident in making decisions and involving yourself using textbooks in the learning process?	36	47,4	Sometimes
2	Do you tend to take the initiative together (in a group) rather than alone in the process of understanding the lesson material?	33	45,8	Often
3	How often do you look for additional sources of information outside the material provided by the teacher?	27	37,5	Sometimes
4	Do teachers often provide teaching materials in digital form?	28	37,8	Sometimes

5	How often do you ask teachers or peers questions if there is something you don't understand	27	37,5	Often
6	How often does the teacher give you space to convey your thoughts or ideas in learning?	29	38,7	Often
7	How often do you use and study Islamic Religious Education books and prepare your own study plans to achieve study goals?	34	46,6	Sometimes
8	How often do you study and search for Islamic Religious Education teaching materials digitally?	29	39,2	Often
9	I feel confident to take personal responsibility in my learning process	45	64,3	Agree
10	Digital-based Islamic Religious Education Teaching Materials will provide convenience and clear guidance in developing my independence	37	52,9	Agree
11	Electronic (digital) textbooks will provide assignments or activities that will encourage me to think and work independently	41	58,6	Agree
12	Do you think that presenting teaching materials digitally will make it easier to understand the material so that it can be completed independently?	47	67,1	Agree
13	Do you think electronic (digital) teaching materials are important to use in implementing Islamic Religious Education learning?	43	61,4	Agree
14	Do you think the electronic (digital) teaching materials delivered by the teacher make the process of learning Islam more interesting and enjoyable so that you can develop the ability to make decisions independently?	42	60	Agree
15	Do you think that by presenting teaching materials digitally it will be easy to provide access to learning (anytime and anywhere) thereby encouraging independence in learning about Islam?	42	60	Agree

Based on the results of the questionnaire analysis of the distribution of needs for digital modules for Islamic Religious Education to increase student learning independence, we can see that 67.1% of students in the agree category and 15.7% of students in the strongly agree category take part in Islamic Religious Education learning by presenting digital teaching materials, in this case, the digital module for Islamic Religious Education. This shows that students have a strong desire and motivation to improve their abilities and independence using digital modules because they make it easier to understand the material. Meanwhile, the percentage of students who need digital modules and consider them important things that need to be done in studying Islamic Religious Education lesson material is 61.4% of students in the agree category and 17.1% of students in the strongly agree category.

4.5 Content and Construct Validation Results of the Islamic Religious Education Digital Module

This research aims to produce a final product in the form of a digital module that can be used as support for Islamic Religious Education subjects. This digital module was considered suitable after going through the validation stage to ask for suggestions and opinions about the module. Feasibility data were obtained from the validation results by material and media experts.

The results of the assessment and analysis of the digital module of Islamic Religious Education are summarized in the following table:

Table 8. Summary of PAI Digital Module Validation results

No	Rated aspect	Average value ($\bar{x}$)	Information
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1	Cover	3,83	Valid
2	Learning objectives	3,83	Valid
3	Material	3,86	Valid
4	Picture	3,93	Valid
5	Presentation	3,83	Valid
6	Language	3,75	Valid
7	Evaluation	4,00	Valid
8	Reference	4.00	Valid
Total Average Value		3,88	Valid

Based on Table 8, a summary of the results of the validation analysis of the Islamic Religious Education digital module is as follows:

- 1) The average validity score of the Islamic Religious Education digital module in the cover aspect was $\bar{x} = 3.83$. If this value is confirmed by the validity criteria it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Therefore, based on the cover aspect, the Islamic Religious Education digital module met the validity criteria.
- 2) The average validity score of the Islamic Religious Education digital module in the Learning Objectives aspect was $\bar{x} = 3.83$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Thus, in terms of the Learning Objectives aspect, the Islamic Religious Education digital module meets the validity criteria.
- 3) The average validity score of the Islamic Religious Education digital module in the material aspect was $\bar{x} = 3.86$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Thus, from a material aspect, the Islamic Religious Education digital module met the validity criteria.
- 4) The average validity score of the Islamic Religious Education digital module in the image aspect was $\bar{x} = 3.93$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Therefore, judging from the image aspect, the Islamic Religious Education digital module met the validity criteria.
- 5) The average validity score of the Islamic Religious Education digital module in the presentation aspect is $\bar{x} = 3.83$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Thus, from the presentation aspect, the Islamic Religious Education digital module meets validity criteria.
- 6) The average validity score of the Islamic Religious Education digital module in the language aspect is $\bar{x} = 3.75$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Thus, from the language aspect, the Islamic Religious Education digital module meets the validity criteria for content.
- 7) The average validity score of the Islamic Religious Education digital module in the evaluation aspect is $\bar{x} = 4.00$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Thus, from the evaluation perspective, the Islamic Religious Education digital module meets the validity criteria.
- 8) The average validity score of the Islamic Religious Education digital module in the Referral aspect is $\bar{x} = 4.00$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Thus, from the reference aspect, the Islamic Religious Education digital module meets the validity criteria.

4.6 Results of Content Validation and Learning Implementation Plan Construct

The validation aimed to produce a final product in the form of a Learning Implementation Plan (RPP) to support the results of the Islamic Religious Education Digital Module. This validation sheet was given to two validators to assess the RPP and provide suggestions for improvement. The aspects assessed were a) RPP form, b) RPP content, and c) RPP materials used.

The results of the RPP assessment and analysis are summarized below.

Table. 9. Summary of PAI RPP Validation results

No	Rated aspect	Average value	Information
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1	Format	3,88	Valid
2	Contents	3,83	Valid
3	Language	3,83	Valid
Total Average Value		3,85	Valid

Based on Table 9, a summary of the results of the validation analysis of the Islamic Religious Education RPP is as follows:

- 1) The average validity score of the Islamic Religious Education Learning Implementation Plan (RPP) in the format aspect is $\bar{x} = 3.88$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Therefore, judging from the format aspect, the Islamic Religious Education RPP met the validity criteria.
- 2) The average validity score of the Islamic Religious Education Learning Implementation Plan (RPP) in the content aspect is $\bar{x} = 3.83$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Therefore, judging from the content aspect, the Islamic Religious Education RPP met the validity criteria.
- 3) The average validity score of the Islamic Religious Education Learning Implementation Plan (RPP) in the language aspect is $\bar{x} = 3.83$. If this value is confirmed by the validity criteria, then it is in the valid category ($3.5 \leq \bar{x} \leq 4.0$). Thus, from a language perspective, the RPP for Islamic Religious Education meets the validity criteria.

4.7 Practicality of Islamic Religious Education Digital Modules to Increase Student Learning Independence

The practicality test in this research and development was carried out by analyzing data from teacher assessments, student assessments, and observations of learning implementation using the Islamic Religious Education digital module. The practicality of the Islamic Religious Education digital module was tested after the digital education module was declared valid by a validator. This was done by carrying out the implementation stage in the form of a trial activity for the Islamic Religious Education Digital Module, which was carried out at Insan Scholar Madani Middle School, South Tangerang City. The implementation stage of the Islamic Religious Education digital module involved several people, including one Islamic Religious Education teacher and two observers. Researchers and Islamic Religious Education teachers communicate in advance regarding the learning that will be carried out using the prepared digital Islamic Religious Education module.

The names of the people involved in this study are as follows.

Table 10. Name of Model Teacher and Observer

No	Name/Position	Information
1	Muflihah, MA (Teacher of Islamic Religious Education at Middle School for Civil Scholars)	Model Teacher
2	Rahmat Dzufikry, M.Si (Headmaster)	Observer
3	Iffan Arzanulhaq, S.Pd. (Deputy Head of Curriculum Division)	Observer

The practicality test of the Islamic Religious Education digital module was conducted by analyzing the results of the observations of the learning implementation using the Islamic Religious Education digital module. The learning activity observed was the Islamic Religious Education learning process with the following learning stages (syntax): a) social system, b) reaction principle, c) support system, and d) instructional impact. The following is a summary of the results of observations on the implementation of learning using the Islamic Religious Education digital module, which took place as follows:

Table 11. Observation Results of Learning Implementation using the Islamic Religious Education Digital Module

No	Observed aspects	Meeting value results				Average	Category
		1	2	3	4		
1	Social system	3,83	3,67	3,83	4,00	3,83	Very Practical

2	Reaction Principles	3,67	3,83	3,83	3,83	3,83	Very Practical
3	Support System	4,00	3,75,	4,00	4,00	3,94	Very Practical
4	Instructional Impact	3,83	3,83	4,00	4,00	3,92	Very Practical
Average						3,88	Very Practical

Overall, the average score for implementing learning using the Islamic Religious Education digital module was 3.88, which falls in the practical category. This indicates that the learning activities using the Islamic Religious Education digital module were carried out very well and were practical.

4.8 Results of Student Learning Independence Questionnaire Analysis

A student learning independence questionnaire was used to determine student learning independence in learning groups using the Islamic Religious Education digital module. Student learning independence questionnaires were distributed after the Islamic Religious Education was completed. The distribution of the student learning independence questionnaire aimed to determine the increase in student learning independence during learning using the Islamic Religious Education digital module. The indicators in this student learning independence questionnaire consist of 5 (five) indicators: 1) motivation to learn, 2) initiative, 3) self-confidence, 4) behavior, and 5) Sense of Responsibility. The following is an explanation of the results of the student learning independence questionnaire analysis in the following table.

Table 12. Frequency Distribution Table of Student Learning Independence Questionnaire Results

Interval	Category	Control Class		Experimental Class	
		Frequency	Percentage	Frequency	Percentage
81,25 - 100	Very High	0	0	70	100
62,50 - 81,24	High	70	100	0	0
43,75 - 62,49	Currently	0	0	0	0
25 - 43,74	Low	0	0	0	0

Based on the analysis of the student learning independence questionnaire during the Islamic Religious Education learning process using the Islamic Religious Education digital module, it can be seen that the five indicators representing student learning independence have increased. This can be seen in the percentage of students learning independence questionnaire results between the control and experimental classes. In the control class, it was in the high category with a frequency of 70, while in the experimental class, it was in the very high category with a frequency of 70. Thus, it can be concluded that the use of Islamic Religious Education digital modules in learning Islamic Religious Education (PAI) is effective in increasing independent student learning by meeting the criteria of being very good.

5. Conclusion

5.1 Conclusions

Based on these results, it can be concluded that

1. It is necessary to develop digital modules for Islamic Religious Education to increase students' learning independence. Based on the information obtained from students and teachers, there is a need for a digital module for Islamic Religious Education that can increase student learning independence. The results of the student questionnaire show that there is a need for digital modules for Islamic Religious Education to increase student learning independence; as many as 47 students out of 70 or 67.1% of students say they agree (need it), and 11 students (15.7 %) say they strongly agree (really need it). in participating in Islamic Religious Education learning using the Islamic Religious Education Digital Module. Meanwhile, the percentage of students who need digital modules and think it is important thing that needs to be done in studying Islamic Religious Education lesson material is 43 students or 61.4% of students who said they agree (need it), and 12 students or 17.1% of students who said they really agree (really need).

2. The design of the Islamic Religious Education digital module to increase student learning independence was developed in the form of supporting tools and as a research instrument. The products to be developed are digital modules for Islamic Religious Education to increase student learning independence, instructions for using digital modules for Islamic Religious Education, Learning Implementation Plans (RPP), and Student Assessment Sheets.
3. An Islamic Religious Education Digital Module product has been produced on the material Respect and Obedience to Parents and Teachers in class VIII and Believing in the Last Day with Self-Awareness and Respect in class IX of SMP, which meets the valid category based on the validity criteria according to the assessment of the material expert validator (valid), expert in Islamic Religious Education (valid), and received a very good response from students and teachers (very positive).
4. The Islamic Religious Education Digital Module product that has been produced meets the practical category for use by both teachers and students. Thus, the digital module for Islamic Religious Education produced has good quality in terms of validity, practicality, and effectiveness, making it suitable for use in the learning process.
5. Learning Islamic Religious Education using the Islamic Religious Education digital module was found to be quite effective in increasing student learning independence, based on the N-Gain score test results. The N-Gain score test results showed that the average N-Gain score for the experimental class (use of digital modules) was 67.4899 or 67.49%, which is included in the most effective category. This means that the use of Islamic Religious Education digital modules is effective in improving learning outcomes in Islamic Religious Education. The effectiveness of this Islamic Religious Education digital module can also be seen from the results of the t-test, which was carried out from the analytical data that has been tested, namely the resulting significance value. (2-tailed) < 0.05 , indicating a significant difference in increasing student learning independence after implementing the Islamic Religious Education digital module. The Islamic Religious Education Digital Module product that has been produced meets the very effective category, both in increasing student learning independence, developing Islamic values for students, and implementing learning in the very good category..

5.2 Practical Implications

Based on the results of the discussion and conclusions of this study, this study has the following implications.

1. Learning using digital Islamic Religious Education modules can be used as an alternative to developing learning modules by compiling modules that are in accordance with the concept of Islamic Religious Education.
2. The development of digital modules for Islamic Religious Education that can be used as tools and media in the learning process to achieve the expected learning objectives and develop student learning independence by compiling modules that are adapted to Islamic Religious Education lessons and preparing Learning Implementation Plans (RPP) and learning evaluations/assessments that are appropriate to the established curriculum.
3. The digital module for Islamic Religious Education that is being developed can be prepared using various interactive, interesting, and fun online applications; thus, it is hoped that students can continue to learn and have a high attitude toward learning independence.

5.3 Suggestions

Based on the research results, the following suggestions are made.

1. It is hoped that teachers who provide Islamic Religious Education will always be able to carry out intensive, creative, interesting, interactive, and fun learning using Islamic Religious Education digital modules. We hope that this will be even more optimal in the future.
2. It is hoped that students who carry out the learning process will always improve their learning outcomes from various aspects, including cognitive, psychomotor, and affective ones. Using the Islamic Religious Education digital module, it is hoped that every student will be able to consistently increase their learning independence in the learning process at school.
3. Teachers should accustom students to learning in different conditions or by utilizing digital Islamic Religious Education modules so that students can express ideas/opinions, ask, and respond to

questions given by the teacher electronically so that discussions run smoothly, including familiarizing students to work on questions that challenge them to increase their learning independence.

4. It is hoped that the government and related policyholders can provide opportunities to facilitate the implementation of training in the use of Islamic Religious Education digital modules to obtain maximum results for students' learning achievement.
5. With the digital module for Islamic Religious Education being developed, it is recommended that students further improve their learning and work activities both individually and in groups, so that they can apply it in real life.

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