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Development of Digital Interactive Modules Based on Al Islam and Muhammadiyah in Basic Mathematics Courses

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Abstrak

Penelitian ini bertujuan untuk mengembangkan modul digital interaktif yang menggabungkan konsep Al-Islam dan Kemuhammadiyahan dalam mata kuliah Matematika Dasar, guna meningkatkan pemahaman konsep matematika serta menanamkan nilai-nilai moral dan karakter kepada mahasiswa. Penelitian dilakukan pada Mahasiswa PGSD semester 2 FKIP UNAMIN pada mata kuliah matematika dasar. Metode penelitian dan pengembangan (R&D) ini menggunakan model ADDIE (Analisa, Desain, Pengembangan, Implementasi, dan Evaluasi). Pengumpulan data dilakukan melalui soal pretest-posttest, observasi, wawancara, dan kuesioner yang melibatkan mahasiswa dan dosen pengampu mata kuliah Matematika Dasar. Validasi modul dilakukan oleh ahli materi, ahli media, dan ahli bahasa. Hasil penelitian menunjukkan bahwa modul digital interaktif yang dikembangkan efektif dalam meningkatkan pemahaman mahasiswa terhadap konsep-konsep dasar matematika. Penilaian oleh dosen dan mahasiswa menunjukkan tingkat kepuasan yang tinggi, dengan integrasi nilai-nilai Al-Islam dan Kemuhammadiyahan yang baik. Modul ini memberikan solusi inovatif dalam pembelajaran matematika yang relevan dengan kebutuhan pendidikan modern dan tuntutan moral. Pengembangan lebih lanjut dan implementasi secara luas dapat meningkatkan kualitas pendidikan matematika di lingkungan perguruan tinggi Muhammadiyah.
Kata Kunci: Al Islam dan Kemuhammadiyahan; Digital Modul Interaktif; Matematika Dasar

Abstract

This research aims to develop an interactive digital module that combines the concepts of Al-Islam and Muhammadiyah in Basic Mathematics courses, to increase understanding of mathematical concepts and instill moral values and character in students. The research was conducted on 2nd semester PGSD students of FKIP UNAMIN in the basic mathematics course. This research uses the Research and Development (R&D) method with the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model. Data collection was carried out through pretest-posttest questions, observations, interviews and questionnaires involving students and lecturers teaching Basic Mathematics courses. Module validation is carried out by material experts, media experts and language experts. The research results show that the interactive digital module developed is effective in increasing students' understanding of basic mathematical concepts. Assessments by lecturers and students show a high level of satisfaction, with good integration of Al-Islam and Muhammadiyah values. This module provides innovative solutions in mathematics learning that are relevant to modern educational needs and moral demands. Further development and widespread implementation can improve the quality of mathematics education in Muhammadiyah higher education institutions.
Keywords: Al Islam and Muhammadiyah; Digital Interactive Module; Basic mathematic

I. INTRODUCTION

The COVID-19 pandemic has been a paradigm-changing event in Indonesian society. For almost two years, its impact has been felt in various aspects of life, and the education sector is one of those that has been seriously affected. In this pandemic situation, schools are implementing online education. When education is conducted online, many students have difficulty in socializing physically. Socialization is an important part of students' social and emotional development, and when students are limited in direct social interactions, this can affect their behavior (Darna, 2021).

One of the observed impacts is a decrease in the level of polite and well-behaved behavior towards parents or educators (Nika Fetria Trisnawati & Sundari, 2021). In addition, there are also moral problems faced by some students. Factors such as economic recession and the lack of religious values in modern education can contribute to the decline in moral values among students. Therefore, educational reform in Indonesia aims to address these moral problems and build students' character with strong values, including religious values (N F Trisnawati & Sundari, 2020); (Tampubolon et al., 2022); and (Fauzi & Fhilrizki, 2022).

One of the proposed approaches is to link the values of Al-Islam Kemuhammadiyahan with learning. In this way, education can be a means to build religious and moral character in students. Designing learning that combines religious values with science and technology is a big challenge, but it is also very important to create students who are morally and intellectually balanced (Dinihari et al., 2023); and (Sundari & Purwanto, 2022).

In this context, the concept of Faith and Piety (IMTAQ) is introduced which is integrated with Science and Technology (IPTEK) as one of the efforts to bring religious values into learning. This is a complex and not easy step, but is considered important in the effort to create a young generation of Indonesia who have high moral and intellectual integrity. Mathematics is one of the subjects that has a strategic role in the education process, because it not only functions as basic knowledge, but also forms logical thinking patterns and problem-solving abilities (Musa'ad et al., 2023).

Therefore, the development of digital interactive modules based on AIK in Basic Mathematics courses is relevant to be used as an innovation in education. Interactive modules based on AIK can help students to better understand basic mathematical concepts while maintaining and fostering religious and cultural values embedded in AIK (Ariyanti et al., 2023).

In addition, changes in the era and the development of information technology have also influenced the way students learn and interact with subject matter (Arsyad et al., 2022). In this digital era, the use of technology in education is becoming increasingly important, because it can improve the quality of learning and prepare students to face the demands of an increasingly digital global society (Putra & Salsabila, 2023); (Nurhairunnisah & Sujarwo, 2018); (Florentina Turnip & Karyono, 2021); & (Irwandani et al., 2017).

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Several studies have been conducted related to interactive modules, namely by Zainal, Abidin, and Walida (2017) Development that produces interactive e-modules based on CASE (Creative, Active, Systematic, Effective) as an alternative learning media for Transformation geometry is able to support independent learning and student competence.

Research results by Khoiriyah and Rizki (2017) which produced teaching materials for mathematical sets associated with Islamic values with an average expert validation of 81.48% (very feasible), with the results of small group practicality of 82% while the results of large group trials were 66.67%. This study also integrates Islamic values, with the novelty of the research that the researcher conducted, namely that it is also related to Muhammadiyah.

Rodiawati and Komarudin (2018) produced teaching materials in the form of e-learning with interactive modules based on learning content development systems on flat-sided spatial geometry material which made students very interested and involved in using this module as a learning tool.

Munandar and Rizki (2019) who successfully developed a flipbook accompanied by Islamic values on the material of valid opportunities from material experts, media and Islamic values with a very feasible category (89.33%) and stated as very practical based on the results of the student response questionnaire (89%).

Hendri et al. (2021) successfully developed a digital module on STEM-based lower grade mathematics learning for prospective elementary school teachers that was valid.

Ammy (2021) produced an interactive digital module based on Articulate Studio'13 in learning mathematics on the material of sets that was very feasible, very interesting and effective in learning.

However, previous studies have several weaknesses. The main weaknesses are the lack of integration of Islamic and Muhammadiyah characters in the learning module, as well as limitations in technology and effectiveness testing.

This research is important to do because it presents solutions to today's educational challenges, especially in integrating religious and moral values into digital technology-based learning. Amid the weakening of social interaction due to the pandemic and the declining morality of some students, education needs to transform not only to improve cognitive achievement, but also to form noble characters. The development of interactive digital modules based on Al-Islam and Kemuhammadiyahan (AIK) in Basic Mathematics learning is a strategic effort to realize learning that is not only effective and adaptive to the development of the times, but also contains values. With this approach, it is hoped that a more meaningful, enjoyable learning process will be created, and will be able to foster students' moral and intellectual integrity in a balanced way.

Therefore, in this study, an interactive digital module based on Al-Islam and Kemuhammadiyahan was developed that uses more modern and flexible technology,

and its validity, practicality, and effectiveness were tested. So this research is expected to provide a positive contribution in improving the quality of basic mathematics education while maintaining AIK values.

II. METHOD

The type of Research and Development (R&D) research uses the ADDIE (Analyze, Design, Development, Implementation, Evaluation) development model. Each stage is evaluated and revised from the stages passed until the product is said to be valid.

The subjects in this study were Mathematics Education Students of the 2023/2024 academic year at UNAMIN Sorong City with a small class trial of 10 4th semester students majoring in Mathematics Education. The students used in the small class trial were students who had received the Set material, while the large class trial was for 2nd semester PGSD students of the Faculty of Teacher Training and Education which started from November 29 to December 7, 2023, which was held 4 times.

Data Analysis by:

1) Validity of e-module

Validity analysis aims to obtain valid qualifications from the developed learning devices. Validity data analysis techniques of material and media experts.

2) Practicality of the module

The analysis of the practicality of the e-module in this study was assessed based on a questionnaire of student responses to the use of the module given to students.

3) Effectiveness of e-module

By comparing the Average Using Paired Sample T-Test. Before conducting the t-test, the test previously conducted a normality test and then a paired sample t-test.

a) Normality Test

This test was conducted on 2 groups, namely the pre-test and post-test results. To test normality, the Kolmogorov Smirnov test and the Shapiro-Wilk test were used. The hypothesis test for normality is as follows:

H_0: Pretest and posttest value data are normally distributed.

H_1: Pretest and posttest value data are not normally distributed.

Basis for decision making:

If sig>0.05 then H0 is accepted and H1 is rejected

If sig <0.05 then H0 is rejected and H1 is accepted

b) Paired Sample t Test

Paired sample t test to determine the difference in the results of the mathematics literacy test before and after being given the e-module. Analysis using paired sample t-test is a procedure in comparing the average of two variables, namely pretest and posttest from the same group.

c) N-Gain Score Test

N-Gain Score Test to test the level of effectiveness of using interactive modules.

Table 1.
Categorization of N-Gain Effectiveness

N-Gain Score	Interpretation
$0{,}7 < Gain$	High
$0{,}3 \leq Gain \leq 0{,}7$	Medium
$Gain < 0{,}3$	Low

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The module is effective if the gain value based on Table 1 meets the "Medium" category.

III. RESULT AND DISCUSSION

A. Result

1) Analyze

At the beginning of the study, the researcher conducted a needs analysis of the material, conditions and situations and characteristics of students. The analysis will be discussed as follows.

a) Material

The researcher interviewed about the extent to which the lecturers of the PGSD study program mathematics course provided set material. The results of the interview were the set material taught by the lecturer during the learning process, namely sets, relations between sets, operations on sets, and mathematical problems of set material. The learning process was carried out with a time allocation of 1 hour 30 minutes for each meeting and the meeting time for the learning process was carried out every 1 meeting a week.

b) Analysis of conditions and situations

The researcher conducted interviews with PGSD lecturers at Muhammadiyah University of Sorong regarding the learning models used. The results showed that lecturers still use conventional strategies. Students are also less than optimal in learning because they do not have practical teaching materials that focus on learning materials and improving mathematical literacy. Semester 2 students are able to use Android, laptops, and computers well and prefer learning using these devices compared to textbooks.

Initial analysis showed the use of teaching materials in class such as ppt (28.3%), internet (29.9%), PDF/printed books (21.9%), flipbooks (8.8%), and other sources (11.1%). The needs analysis showed that teaching materials had not accommodated Al Islam & Muhammadiyah, with 88.1% stating rarely, 11.3% often, and 0.6% always. These findings indicate the need for changes in learning strategies to improve students' mathematical literacy skills and the character of Al Islam & Kemuhammadiyah more effectively.

Based on this analysis, the researcher decided to develop teaching materials in the form of interactive digital modules based on Al Islam & Kemuhammadiyah which contain 5 syntaxes, namely orientation, organization, investigation, presentation, evaluation.

c) Analysis of Student Characteristics

To determine the characteristics of students, the actions taken by the researcher were to conduct interviews about students' initial knowledge related to the material on sets and written tests aimed at determining the mathematical literacy skills that would be achieved in compiling digital mathematics modules. The results of interviews conducted with mathematics lecturers showed that students still had difficulty understanding contextual problems. Students were also less able to create mathematical models from the contextual problems given, in addition, students had difficulty in making the

right problem-solving steps to solve problems and evaluating the results of their work.

Then the researcher gave a written test containing indicators of mathematical literacy skills. From the results of the test, it can be seen that students' mathematical literacy skills are still relatively low, this can be seen in Figure 1.

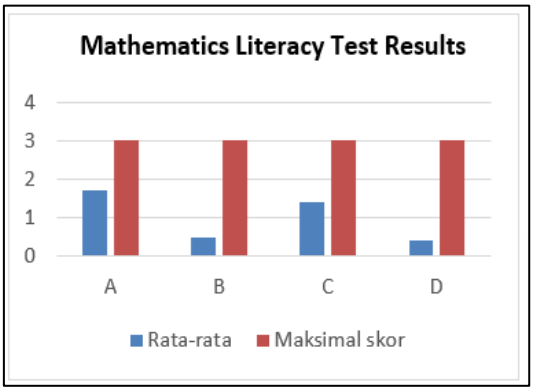

Figure 1. Percentage of Test Results According to Mathematical Literacy Indicators

Description

A = Creating a mathematical model of the problem

B = Writing down the steps to solve the problem

C = Determining the correct formula for the problem

D = Evaluating the work in writing

Based on the results of the test, it can be seen that mathematical literacy skills are still relatively low, this is because students are not used to questions that contain indicators of mathematical literacy in solving mathematical problems. In addition, the lack of teaching materials that do not support students in the learning process, resulting in low mathematical literacy skills. Students' interest in using Android is one of the supporting factors for lecturers to be able to create practical teaching materials that refer to students' mathematical literacy skills, so that the learning process becomes more interesting.

d) Work Plan Analysis

The following is a series of work carried out by researchers to develop digital modules to achieve students' mathematical literacy skills:

1. Determining development objectives: The purpose of the development is so that lecturers can create a learning atmosphere that is oriented towards mathematical literacy and helps students improve their knowledge of Al Islam and Muhammadiyah, especially on the material on sets, by using Android.
2. Developing a digital design for an interactive module: The interactive module is designed using proven PBL.
3. Developing validation instruments and conducting validation.
4. Testing the validity of the e-module.
5. Implementing.
6. Testing the practicality and effectiveness of the module.
7. Evaluation: Evaluation is carried out with improvements based on the findings of problems during the learning process in the classroom.

2) Design

a) Components of the developed teaching material design

At the design stage, the researcher designed a digital product of an interactive module according to the data from the needs analysis conducted at the PGSD Study Program,

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Muhammadiyah University of Sorong. An interactive module based on Al Islam & Muhammadiyah with Set material and the ability to be achieved, namely mathematical literacy in semester 2 students.

Al Islam and Muhammadiyah are integrated in the introduction which inserts verses from the Qur'an about sets, then in each example of questions and set material that allows Al Islam and Muhammadiyah are also integrated. This can be seen in Figure 2.

Figure 2. Integration of Al Islam and Muhammadiyah in Digital Modules.

In addition to Figure 2, Al Islam and Muhammadiyah are also found in the given practice questions. The given practice questions have the nuances of Al Islam and Muhammadiyah. This can be seen in Figure 3.

Figure 3. Integration of Al Islam and Muhammadiyah in Practice Questions.

Each material is equipped with an integrated explanatory video with YouTube and audio features on each page, as well as interactive practice questions using Quizizz and assignment submission links. The e-module is designed with problem-based learning steps. To achieve mathematical literacy skills, the e-module includes ability indicators such as creating mathematical models, solving contextual problems, and written evaluations. The set material includes basic set material, relations between sets, operations on sets, and mathematical problems related to sets.

b) Design

Next, the researcher carried out the design stage of the e-module based on

Al Islam & Kemuhammadiyahan to achieve mathematical literacy skills.

3) Development

At this stage, the researcher developed an e-module created in Microsoft Word which then used the Canva application for the cover and background design, after which it was converted into a PDF format to be further developed using the Heyzine application to make the product more interactive.

In making revisions, the researcher refers to the suggestions and input provided by the validator. This validity is carried out by 3 validators, namely a media expert validator, a material expert validator, and a language expert validator.

Based on data obtained from validators who are experts in the fields of media, materials, and language, it shows that the average assessment or validation results from experts on interactive digital modules show the results in Table 2.

Table 2.
Expert Validation Results

Validation	Results Validation	Category
Media	0,91	High
Language	0,58	Medium
Material	0,89	High

4) Implementation

a) Practicality of digital interactive modules

After the digital interactive module is declared suitable for use or is in the valid criteria. The next stage is to implement it in small classes or small class trials. Furthermore, the digital interactive module is applied to large classes to test the practicality of the digital interactive module used. The product trial was carried out 4 times offline, the researcher provided a link that students could use to be used online via mobile phones in utilizing digital interactive modules based on Al Islam and Muhammadiyah and also assignments that could be sent via WA lecturers. Furthermore, the researcher provided a student response questionnaire after using the digital interactive module based on Al Islam & Muhammadiyah in improving mathematical literacy skills.

b) Small Class Trial

Next is the trial of the digital practicality of the interactive module in small classes:

1. Small class practicality trial

The small group trial was conducted by 10 5th semester students majoring in Mathematics Education. The students used in the small class trial were students who had received Set material. The students were given a digital interactive module to use and assess. Based on the results of student responses in the small class, there were 9 students in the very good criteria and 1 student in the good criteria and the average response of small group students reached 84% with Practical.

2. Learning process

The learning process is carried out in the 2nd semester students of PGSD, Faculty of Teacher Training and Education with the material of Himpunan. The learning process is carried out using the syntax of the PBL learning model based on Al Islam & Kemuhammadiyahan. Students are

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directed to understand the problem, the problem can be seen in Figure 4.

Figure 4. Orientation Towards the Problem.

The second syntax is organizing the problem, at this stage students discuss in groups what is known, what must be done to solve the problem to determine the right formula for the problem being done.

Next is the third syntax guiding group investigation. At this stage, students discuss in groups what is known, what must be done to solve the problem until determining the right formula for the problem being carried out. syntax guiding investigation.

The fourth syntax is developing and presenting the results of the work. At this stage, students and their groups complete their work results until evaluating the results of the work. The syntax for presenting the results of the work can be seen in Figure 5.

Figure 5. Developing and Presenting the Results of the Work.

The fifth syntax is evaluation. In the evaluation syntax, students and lecturers evaluate the results of the work.

c) Large Class Practicality Test

The large class practicality test aims to assess the practicality of the interactive e-module that has been validated by a team of experts and has been tested in small classes. The large class trial was conducted on 32 2nd semester students majoring in Elementary School Teacher Education who had used the interactive e-module on the set material. The practicality test was conducted using a student response questionnaire with the aim of students being able to assess the interactive e-module that had been used. Based on the calculation results, it is known that the student response after using the interactive e-module based on the Al

Islam and Kemuhammadiyahan to achieve mathematical literacy skills, there were 29 students in the very good category and 3 students in the good category and the average obtained was 92.5% and was in the "very practical" category.

5) Evaluation

At this stage, the researcher identified the shortcomings of the interactive e-module implementation process and made improvements. This is done so that the interactive e-module that is implemented is getting better and more suitable for use in the learning process. The pretest was given to determine students' mathematical literacy skills before the implementation of interactive e-modules in the classroom. Furthermore, the posttest was given as a test of students' mathematical literacy skills after the implementation of interactive e-modules.

The results of the calculation of 32 students who were given a pretest were that there were no students who completed it. The percentage of pretest completion was 0% while students who did not complete it was 100%. Incompleteness was because students were not used to using contextual problems in set material, the learning process using interactive e-modules.

Furthermore, the results of the posttest, the posttest was given after the implementation of the e-module on set material. Based on the results of the posttest calculation, 29 students completed it and 3 students were in the incomplete category. Based on the results, the percentage of student completion reached 92.8% while students who did not complete 7.2%. The next step is to calculate the average using the paired sample t-test.

a) Comparison of Averages Using the Paired Sample T-Test

The test begins with a normality test as a prerequisite using the SPSS 22 application.

1. Normality Test

Shapiro-Wilk is used because the sample used by the researcher is under 50 students. If the significance value is higher than 0.05, the data is considered normal. (Afifah, E. P., Wahyudi, W., & Setiawan, Y. (2019). Table 3 displays the findings of the normalcy test.

Table 3.
Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.123	32	.200*	.956	32	.212
Posttest	.118	32	.200*	.972	32	.568

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Based on the results of the normality test calculation using SPSS 22, it can be seen that the significance results of 0.212 and the posttest of 0.568 are greater than the decision-making standard of 0.05, so it can be concluded that the data is normally distributed.

2. Paired Sample T-Test

The aim is to determine the difference in the results of the mathematical literacy test after using interactive e-modules based on Al Islam & Kemuhammadiyahan in improving mathematical literacy skills. The results

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were tested using SPSS 22 with the results in Table 4.

Table 4.
Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	-29.75000	10.99853	1.94428	-33.71539	-25.78461	-15.301	31	.000

The results of the paired sample t-test were assisted by using SPSS 22 software. The sample t-test test to test the hypothesis and see the differences before and after using the interactive module based on Al Islam & Kemuhammadiyahan showed an increase in the value of student learning outcomes. Based on the table, using the testing criteria, namely rejecting H_0 if the significance value is <0.05 and the significance value (2-tailed) for the paired sample t-test test is 0.000 <0.05. This means that H_0 is rejected and H_1 is accepted.

3. N-Gain Test

The N-gain test was conducted to determine the increase in mathematical literacy skills as seen from the results of the students' pretest and posttest. The N-gain test can be seen in Table 5.

Table 5.
Descriptive Statistics

N	Minimum	Max	Mean	Std. Deviation
32 32	.17	.83	.5982	.13166

The N-Gain Test was used to evaluate the students' pretest and posttest results. With an average gain score of 0.5982, students' proficiency in mathematics fell into the moderate range. After employing the interactive e-module based on Al Islam & Kemuhammadiyahan, it was determined that the e-module was effective in terms of students' mathematical literacy skills

B. Discussion

Based on the results of the development with the ADDIE model, it was obtained that an interactive e-module met the valid criteria both in terms of the material presented, in terms of media, and in terms of language. The validity of the material expert was reviewed in terms of the appropriateness of the content, language, and presentation. The validity of the media expert was reviewed in terms of the use of fonts, layout, e-module design and illustrations. While the language expert was reviewed from the use of language in the interactive digital module. In developing the e-module, the researcher developed a product based on the characteristics of students who have relatively low mathematical literacy skills with an average of 35% or less of mathematical literacy

skills. Because the development of this e-module is oriented towards students' mathematical literacy skills as evidenced by the content of mathematical literacy indicators.

The lack of students' ability to solve contextual problems can be helped by the stages of problem solving contained in the interactive e-module starting from making a mathematical model, making steps to solve it, determining the right formula and solving the problem to making conclusions. These stages are inseparable from the syntax of the learning model that directs students in the process of solving the problem as contained in the interactive e-module.

This e-module also contains interesting interactive features that increase the enthusiasm for learning of students who are accustomed to using Android in their daily lives and during learning. And supported by Octavianis dan Subroto, (2022) who stated that e-modules presented with structured syntax can support the learning process.

On the first day of implementing the e-module based on Al Islam & Kemuhammadiyahan, students were very enthusiastic about the learning process and students were still guided in the process of solving contextual problems with indicators of mathematical literacy and the use of interactive e-modules, even during the learning process, students seemed very active and had a much higher interest in learning than usual. This is in line with what was expressed by Ariyani & Kristin (2021) that students' interest in learning will increase if the learning style applied is increasingly attractive to students.

Then on the second day, students seemed to have started to get used to the learning model using Android, students were so enthusiastic about the features contained in the interactive e-module. With the syntax content in the interactive digital module, students can discuss with friends in solving problems on the set material so that the learning process is more conducive. Suryandari (2016) said that the learning process carried out in groups can support the enthusiasm of students in learning and the learning process becomes less boring.

Furthermore, on the third and fourth days, students began to be independent in solving contextual problems and several indicators of mathematical literacy, their achievements have been seen. The use of interactive e-modules independently by students is supported by the features contained in the interactive e-module. To see the achievement of mathematical literacy indicators and present the syntax content of learning that opens opportunities for direct experience and student activity through independent solving activities. In this case, students are more active in solving problems from lecturers without having to make lecturers the only source of learning, so that during the learning process students look happy. Nurkhasanah, (2019) said that PBL can make students more independent in solving problems. Husnidar (2021) argues that the learning process carried out in a fun way can make the learning process more effective so that it can increase student knowledge and achieve learning goals.

The practicality of the developed e-module can also be seen from the results of filling out the questionnaire after students used the interactive e-module with a score of 4.65, which means that the e-module is in the good category. According to Sumaryani (2019), the good category has entered the very practical category. E-modules are also effectively applied during the learning process, in this case it can be seen from the results of the post-test of mathematical literacy skills which are higher than the pre-test results. Based on the N-gain results, it can be seen from the average n-gain, which is 0.58 or is in the moderate category. The improvement of mathematical literacy skills is supported by the selection of the right learning model and e-modules containing materials so that they can stimulate students' mathematical literacy skills as conveyed by S.Sirate & Ramadhana (2017) that interactive e-modules with good design will maximize student learning outcomes. The improvement of students' mathematical literacy skills is in accordance with the purpose of creating interactive e-modules. This can be seen from students' answers to changes in students in working on pretest and posttest questions using mathematical literacy indicators. By looking at the pretest results, students have not been able to solve contextual problems using mathematical literacy indicators.

IV. CONCLUSION

Based on the results and discussions, it can be concluded that the development of a digital interactive module based on Al-Islam and Kemuhammadiyahan achieved a validity rating in the "very valid" category, a practicality level categorized as "very practical", and an effectiveness score that indicates the module is effectively used for enhancing students' mathematical literacy, with a gain score of 0.5982 in the moderate category. This module has proven to improve students' understanding of basic mathematical concepts while simultaneously instilling religious and moral values aligned with Muhammadiyah character. Therefore, it is recommended that future research expand the implementation of this module to different educational levels and other mathematical topics to ensure its consistent effectiveness across various contexts. This study contributes significantly to educational innovation by offering a learning tool that not only enhances cognitive abilities but also promotes character building through the integration of Al-Islam and Kemuhammadiyahan values within a digital and interactive learning environment suited to the demands of the digital age.

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