



MATHEMATICS MODULE ON RELATIONS AND FUNCTION MATERIAL FOR MTS CLASS VIII STUDENTS BASED ON CONTEXTUAL AND INTEGRATED ISLAMIC VALUES**MODUL MATEMATIKA PADA MATERI RELASI DAN FUNGSI UNTUK SISWA MTS KELAS VIII BERBASIS KONTEKSTUAL DAN TERINTEGRASI NILAI-NILAI KEISLAMAN**Muh. Fajaruddin Atsnan^{1*}¹UIN Antasari Banjarmasin, Jl. A. Yani No.Km.4 5, RW.5, Kebun Bunga, Banjarmasin Timur, Banjarmasin, Kalimantan Selatan 70235, Indonesia¹fajaratsnan@uin-antasari.ac.id

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Abstract: This research aims to describe the development of mathematics teaching materials in the form of modules based on a contextual approach integrated with Islamic values for relationship and function material, and to obtain information on the quality of the modules created. This module covers Islamic values, such as prayer, almsgiving, the good qualities of the Prophet, as well as good habits dictated by religion. This research and development model follows the ADDIE reference. The research results explain that (1) the validity of the module is in the "Good" criteria according to the validation results from 2 expert lecturers (material experts and media experts), (2) the practicality of the module gets the "Good" criteria, with 50 out of 57 students or 87.72 % answered that they strongly agreed that the module was easy to understand in terms of material and its content had an Islamic content, (3) the effectiveness of the module based on the learning outcomes test showed that 52 out of 57 students achieved the minimum ability criteria (KKM) set by the school, namely 68, with a completion percentage of 91.23% and the average value is 81.04.

Keywords: mathematics module, relations and functions, contextual, Islamic values

Abstrak: Penelitian ini bertujuan demi menjabarkan pengembangan bahan ajar matematika dalam bentuk modul berbasis pendekatan kontekstual terintegrasi nilai-nilai keislaman untuk materi relasi dan fungsi, dan mendapatkan informasi kualitas modul yang dibuat. Modul ini mencakup nilai-nilai keislaman, seperti salat, sedekah, sifat baik Rasulullah, serta kebiasaan baik yang dituntunkan oleh agama. Model penelitian dan pengembangan ini mengikuti acuan ADDIE. Hasil penelitian menjelaskan bahwa (1) validitas modul berada pada kriteria "Baik" menurut hasil validasi dari 2 dosen ahli (ahli materi dan ahli media), (2) kepraktisan modul mendapat kriteria "Baik", dengan 50 dari 57 siswa atau 87,72% menjawab sangat setuju bahwa modul mudah dipahami secara materi dan isinya bermuatan keislaman, (3) efektivitas modul berdasarkan tes hasil belajar menunjukkan bahwa 52 dari 57 siswa mencapai kriteria kemampuan minimal (KKM) yang ditetapkan sekolah yaitu 68, dengan persentase ketuntasan 91,23 % dan nilai rata-rata 81,04.

Kata Kunci: modul matematika, relasi dan fungsi, kontekstual, nilai-nilai keislaman

Cara Sitasi: Atsnan, M. F. (2024). Mathematics module on relations and function material for MTs class VIII students based on contextual and integrated Islamic values. *Math Didactic: Jurnal Pendidikan Matematika*, 9(3), 568-575. <https://doi.org/10.33654/math.v9i3.2450>

Education is basically an effort to increase certain knowledge, insight, skills and expertise in humans in developing their talents and personalities (Woi & Prihatni, 2019). Law Number 20 of 2003 also explain that education is a mindful and designed effort to achieve a learning environment through the learning process. The aim is clear, that students can actively evolve their personal potency, for Islamic spiritual strength, self-restraint, intellect, honorable character and skills. Religion and learning are two of the many elements that support each other to get educational purposes (Mutijah, 2018). One lesson that is closely related to the Islamic religion is mathematics. Mathematics is one of the mandatory subjects given to primary school to secondary level students (Syafitri, 2020). Mathematics is in line with Islam. Whether we realize it or not, Islam values rational truth, logic, which is then symbolized in mathematical symbols and language. In the context of mathematics education, the fusion from mathematics with Islamic values is a unified model rule to instill in students a behavior to appreciate for the utility of mathematics through Islamic values. Therefore, it is important to start integrating every learning material with Islamic values from primary education to secondary and higher education.

There is mathematics learning build upon a situational approach that is integrated with Islamic values. Which will become a specialty of mathematics at the MTs level in the future. So that students not only learn about a mathematical concept, but are also reminded that mathematics is closely related to Islamic values, whether they realize it or not. According to Abdussakir (2018), there is an integration model between mathematics and Islamic values reflected in four activities, namely developing mathematics from the Al-Quran, using mathematics to implement the Al-Quran, utilizing mathematics to reveal the mathematical miracles of the Al-Quran, and lecturing mathematics with the values of the Koran. Thus, learning mathematics which contains Islamic values can be an alternative in realizing the quality of national education, which aims to promote the personality, abilities and society to make the life of the community intelligent and make people believe and faithful to God Almighty (Safitri et al., 2020).

The final goal of school mathematics learning, especially at the SMP/MTs level, is that students or students have a manner of appreciating the usefulness of mathematics in their daily life. Starting with this goal, it is necessary to develop various types of models, approaches, strategies, learning methods, and teaching materials, which can facilitate students to find a manner of appreciation for the utility of mathematics. Not only that, in the context of mathematics teaching materials, it would be even better if there was creation of modules. Moreover, so far in schools with an Islamic religious background, such as MAN, MTs, and MI Ibtidaiyah, the teaching materials used so far are still the same as those in public schools, SMA/SMK, SMP, and SD. In other words, the mathematics teaching materials currently used do not suit the needs and characteristics of MTs students (Astuti, 2017). Even if there is, it is still very minimal. In other words, the learning resources used are still very limited for both teachers and students (Rahim & Wahyuni, 2019). So, it is obligatory to create teaching materials as part of intellectual property, which can facilitate students to not only get to know mathematical concepts using horizontal mathematics, but also vertical mathematics. Simply put, it is obligatory to create teaching materials that have a double goal, teaching mathematical concepts while at the same time inserting Islamic values in children from an early age.

Starting from the desire for students to appreciate the usefulness of mathematics in life, the development of teaching materials cannot be developed haphazardly. The right approach is needed,

so that it can facilitate and integrate mathematical concepts and Islamic values in the same frame, namely mathematical modules. So, it is hoped that Islamic values in learning mathematics can form a strong person, imbuing *Imtaq* (faith and piety) towards Allah SWT (Sari, 2018).

Method

This research is an R & D type with ADDIE model (Branch, 2010) which is an abbreviation of Analysis, Design, Development, Implementation, and Evaluation. The development procedure includes four stages. First, the analysis stage. At this stage, needs analysis, student analysis, and materials are carried out. Second, the design stage. At this stage, a draft of the RPP, modules, and tests instruments are created. Third, the development stage. At this stage, the RPP, modules and tests that have been prepared are then assessed by experts and continued with revisions if any. Fourth, implementation stage. At this stage, limited trials are implemented in schools and revised in stage 2 if improvements are needed. Fifth, evaluation stage. At this stage, an analysis of practicality, validity and effectiveness is carried out to answer the problem formulation.

The test subjects for this research were class VIII students at MTs Negeri 1 Banjarmasin, even semester of the 2021/2022 academic year. There are a pair types of data for this research, which is quantitative and qualitative data. Quantitative data comes from expert validation results, teacher and student assessment results, observation results of learning implementation, and tests. Meanwhile, qualitative data comes from commentary, suggestions and the results of quantitative data conversion. Data collection method using tests and non-tests. The research instruments used include teacher assessment sheets, student assessment sheets, expert validation sheets, student response sheets, surveillance sheets, and tests for mathematics learning outcomes. The data analysis method used is quantitative data analysis in the Likert scale with 5 rating criteria and transformed into qualitative data using the Azwar (2002) formula. The effectiveness data analysis method is viewed from the outcome of mathematics learning tests, validity data analysis is based on the outcome of expert evaluations, minimum good criteria, and practicality analysis is viewed from the outcome of teacher, student evaluations, learning implementation, and student responses.

Result and Discussion

Result

This research refers to the ADDIE development model, with procedures carried out in research on modules covering five stages, that is: (1) Analysis, (2) Design, (3) Development, (4) Implementation, and (5) Evaluation.

The following is a description of each stage:

a. Analyze

At this stage the activity carried out is to answer the question whether the newly developed module is able to overcome the learning problems faced? Initial studies, especially at MTs test sites, are to specify the relevance of the modules to be created to needs in the field. It turned out that it was not possible to carry out research for the initial study at MTs N 3 Banjarmasin, for

reasons of not being able to confirm the children for limited trials, interviews, observations, etc. So, researchers did not force themselves to continue at MTs N 3 Banjarmasin and immediately looked for alternatives as a research location. Finally, the researcher was allowed by MTs N 1 Banjarmasin to carry out this research.

1. Analysis of the needs of class VIII students

At this stage, the researcher and the Class VIII mathematics teacher dissected the research proposal. Mathematics teachers appreciate the desire to develop mathematical modules that are contextually based and integrated with Islamic values because so far there have been no modules that are integrated with Islamic values, even though MTs is a religion-based school. However, one thing that needs to be corrected according to the mathematics teacher, Mr. Rahim Miftahuddin, S.Pd., is regarding the material. Initially what was written in the research title was Statistics material, but due to the application of the emergency curriculum during the Covid-19 pandemic, it could be Statistics in the even semester. So, after discussing various considerations, the material Relations and Functions was chosen, which will be covered in the mathematics module, because it is needed as material/resources for learning mathematics, as well as enriching the perspective in learning mathematics regarding the material Relations and Functions.

Based on the observations and interviews results with mathematics teachers, data was collected that learning resources were very limited, only from books from the Ministry of Education and Culture. There are no modules yet, especially those based on a situational approach that is integrated with Islamic values for Islamic schools like MTs. Based on the pre-research results, the researchers deemed it necessary to develop modules based on a situational approach that integrated Islamic values.

2. Curriculum analysis

During the pandemic, even though the Ministry of Education and Culture invited each school to implement the national curriculum or emergency curriculum, MTs N 1 Banjarmasin still chose the revised edition of the 2013 curriculum. However, mathematics subjects have experienced adjustments, due to the difficulty of teaching through an online system. The mathematical material presented is more about instilling concepts not in the depth and breadth of the material, but instilling a mathematical concept in children so that it becomes a prerequisite material for the next material. For odd semesters, mathematics material consists of: Chapter 1: Number Sequence Patterns, Chapter 2: Cartesian Coordinates, Chapter 3: Relations and Functions, Chapter 4: Straight Line Equations, Chapter 5: Systems of Linear Equations in Two Variables. The results of the curriculum analysis are needed to prepare a map/map of module teaching material requirements.

b. Design

The researcher designs the module that will be developed according to the learning process and the results of the needs analysis. The following is the structure of the module developed.

Other activities implemented at this stage include: designing a Learning Implementation Plan (RPP), designing observation sheets for learning implementation, designing learning outcomes tests, create a student response questionnaire, design validation sheets for material experts and media experts.

Table 1. Module Structure

Part of Module	Module
<i>Pendahuluan</i>	<ol style="list-style-type: none"> 1. <i>Halaman kover</i> 2. <i>Halaman Francis</i> 3. <i>Kata pengantar</i> 4. <i>Daftar isi</i> 5. <i>Deskripsi modul</i> 6. <i>Petunjuk penggunaan modul</i> 7. <i>Peta konsep</i>
<i>Isi</i>	<ol style="list-style-type: none"> 1. <i>Konsep</i> 2. <i>Materi</i> 3. <i>Lembar Kegiatan Siswa</i> 4. <i>Evaluasi</i>
<i>Penutup</i>	<ol style="list-style-type: none"> 1. <i>Tes Formatif</i> 2. <i>Rangkuman</i> 3. <i>Glosarium</i> 4. <i>Kunci Jawaban</i> 5. <i>Daftar Pustaka</i>

Each research instrument is assessed through expert validation, which specifically for the module is validated by material expert lecturer Rahmita Yuliana Gazali, M.Pd. (STKIP PGRI Banjarmasin) and media expert Ezi Apino, M.Pd. (UNY). The instrument used to assess the module, for material expert validators, is based on the components of appropriateness of content, appropriateness of language, appropriateness of presentation, and appropriateness of contextual assessment. Meanwhile, for media expert validators it is only a matter of graphic suitability.

c. Development

At this stage, researchers will realize concepts and ideas in the form of finished modules. At this stage the researcher has created the module in question and has validated it by material experts and media experts. Then, the results of the validation of the module teaching materials carried out by material experts and media experts are as follows.

Table 2. Material expert validation results and conversion

Aspects	Mean Score	Criteria
<i>Kelayakan isi</i>	4,21	Good
<i>Kelayakan bahasa</i>	4,18	Good
<i>Kelayakan penyajian</i>	4,32	Good
<i>Kelayakan penilaian kontekstual</i>	3,83	Good
<i>Average</i>	4,14	Good

d. Implementation

Activities at this stage are limited module trials/small trials, which are created and have been validated by experts and revised. On Friday, September 24 2021, limited trials and interviews were conducted with 3 students with high, medium and low cognitive abilities, with 1 person representing each ability level (Results in the attachment). As well as phase 1 field trials by testing the readability of the module and interviews (in the logbook). Meanwhile, the large trial was carried out in four classes, that is VIII A, VIII B, VIII C, and VIII D classes when limited

face-to-face learning was allowed. The following is a tabulation of students who were present during the big trial. Look at table 3 below.

Table 3. Tabulation of Number of Students in Large Trials

Class	Students
VIII A	15
VIII B	13
VIII C	15
VIII D	14
Total	57

e. Evaluation

Request feedback on the application of the modules developed, namely through student response questionnaires regarding the learning process using the modules and the modules developed themselves.

Then, based on the questionnaire results, can be resumed that the practicality of the module developed is included in the "Good" criteria, because as many as 50 students out of 57 students or 87.72% answered that they extremely agree that the developed module is convenient to comprehend in terms of material and its content is really related to Islamic values. Apart from distributing and calculating questionnaires regarding student responses to the learning process with modules and responses to the modules developed, researchers also conducted learning outcome tests to specify the effectiveness of the developed modules. The learning outcomes test results showed that 52 out of 57 students had reached the minimum ability criteria (KKM) set by the school, that is 68, with a completion percentage is 91.23% and average score of 81.04.

Discussion

Based on the research results, the quality of mathematical modules with situational approach that integrates Islamic values in relationship and function material, is valid, practical and effective. It is important to develop teaching materials so that learning does not continue to be teacher-centered (Soeyono, 2014). So, it is hoped that students will be more active in learning. Then, teaching materials with a situational approach means that learning will be brought in daily life, so it is expected that students capable to construct their knowledge, not just memorize it (Gazali & Atsnan, 2017). Then, teaching materials that are integrated to Islamic values will certainly have an impact on students' attitudes of respect as proven by the outcome of response questionnaires and also debriefing with students at various levels of high, medium or low cognitive ability.

Starting from the desire for students to appreciate the usefulness of mathematics in life, the development of teaching materials cannot be developed haphazardly. The right approach is needed, so that it can facilitate and integrate mathematical concepts and Islamic values in the same frame, namely mathematical modules. So, it is hoped that Islamic values in learning mathematics can form a strong person, imbuing *Imtaq* (faith and piety) towards Allah SWT (Sari, 2018). Now, all that remains is to explore other materials so that they become a complete learning resource.

Conclusion and Suggestion

Conclusion

Development of modules with situational approach that links Islamic values in relationship and function material, adopting the ADDIE model development procedure. The quality of the teaching materials developed: The validity of modules indicates the "Good" criteria based on the assessment of teaching materials results by 2 expert lecturers, namely material experts and media expert; The practicality of modules indicates the "Good" criteria, where 50 out of 57 students or 87.72% answered that they extremely agree were the modules developed are easy to comprehend in terms of material and the content is really related to Islamic values; The effectiveness of teaching materials is examined based on learning results tests which indicate that 52 out of 57 students have reached the minimum ability criteria (KKM) set by the school, that is 68, with a completion percentage is 91.23%, and average score is 81.04.

Suggestion

It would be interesting to do further research on the same topic, but on different math material in the same class. Thank you to LP2M UIN Antasari Banjarmasin who has fully facilitated this research.

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