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Developing Learning Materials of Islamic Education Integrated with Mathematics and Sains for Junior High School

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Keywords:
Islamic Education; Mathematics; Science; Learning Materials.

Abstract

The design of learning materials and the learning process for Islamic Education subjects is ideally not only normative, but must also be combined with a scientific approach. An understanding of the concept of religion as a whole and integrated will cause students to have a complete world view of religion and science. Therefore, the purpose of this study is to develop learning materials of Islamic Education integrated with mathematics and science for junior high school. This study is research and development which consists of four stages, namely define, design, develop, and dissaminate. The data collecting techniques used are questionnaires to find out experts' assessment and students' respons. The results showed that the learning materials has fulfilled the requirements to be considered feasible to be used in the learning process.

Kata Kunci:
Pendidikan Agama Islam; Matematika; Sains; Bahan Ajar.

Abstrak:

Desain bahan ajar dan proses pembelajaran mata pelajaran Pendidikan Agama Islam idealnya tidak hanya bersifat normative, melainkan juga harus dikombinasikan atau diperkaya dengan pendekatan ilmiah/saintifik. Pemahaman terhadap konsep agama secara menyeluruh dan terintegrasi akan menyebabkan siswa memiliki pandangan yang lengkap terhadap agama dan sains. Oleh karenanya, penelitian ini bertujuan untuk mengembangkan bahan ajar mata pelajaran Pendidikan Agama Islam yang terintegrasi dengan matematika dan sains untuk siswa SMP. Penelitian ini adalah penelitian pengembangan yang terdiri dari empat tahapan yaitu mendefinisikan, merancang, mengembangkan dan menyebarkan. Data dikumpulkan dengan menggunakan angket untuk mengetahui penilaian ahli dan respon siswa. Hasil penelitian ini menunjukkan bahwa bahan ajar yang dikembangkan valid dan layak untuk digunakan dalam proses pembelajaran.

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1. Introduction

The design of teaching materials and the learning process for Islamic Education subjects is ideally not only normative, but must also be combined with a scientific approach. An understanding of a comprehensive and integrated concept of religion will cause students to have a complete world view of religion and science. Such a complete world view will be difficult to materialize if students' understanding is not connected with other sciences. Moreover, if students think that religion is only related to God and the hereafter, while science is only related to worldly life. According to Assegaf, this is what is known as the dichotomy of knowledge in Islam.[1] This must be overcome so as not to have a negative impact on the formation of an integrated Islamic worldview.

This integrative-interconnected concept is an effort to understand that the problems faced by humans are complex. Religious, scientific, social or humanities cannot stand alone, must work together, synergize and complement each other.[2] Integrative-Interconnected is based on the integrative-interconnected paradigm of religion and science or the paradigm of unity and integration/non-dichotomous between religion and science. And to make it happen by positioning and connecting religion and science firmly and clearly.[3] The Integrative-Interconnected Paradigm offered by Amin Abdullah is answers to these problems. With this paradigm, the three main areas of knowledge namely natural sciences, social sciences, and humanities will no longer stand alone but will be interrelated with one another.

The sources of all knowledge are the texts of the Qur'an (*kalamullah*) and the universe (*sunnatullah*), so that all knowledge is explored and developed from these two sources. This integration-interconnection paradigm is the answer or response to the difficulties so far due to the separation of knowledge. From this paradigm we can understand that any scientific building, be it religious, social, humanities, natural, psychology and so on cannot be a single entity. Each of these sciences need each other to help humans understand the complexities of life and solve existing problems.[4] Learning management and the 2013 curriculum policy are examples of good integration-interconnection practices, where the 2013 curriculum integrates three competency domains namely attitude, knowledge, knowledge which are implemented in KI-1 (spiritual), KI -2 (social), KI-3 (knowledge), and KI-4 (skills). These four aspects (Core Competencies) are (integration) requirements that must be met, achieved and implemented in the teaching and learning process.

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[1] Abdur Rachman Assegaf, *Filsafat Pendidikan Islam: Paradigm Baru Pendidikan Hadhari Berbasis Integratif-Interconnected* (Jakarta: PT Raja Grafindo Persada, 2014).

[2] Amin Abdullah, *Implementasi Pendekatan Integratif-Interkonektif Dalam Kajian Pendidikan Islam* (Yogyakarta: Pascasarjana UIN Sunan Kalijaga, 2014).

[3] Al Makin, *Sosialisasi Pembelajaran "Menjadi Mahasiswa Visioner Di UIN Sunan Kalijaga* (Yogyakarta: UIN Sunan Kalijaga, 2017).

[4] Fithria Rif'atul 'Azizah, "Mengembangkan Paradigma Integratif-Interkonektif Dalam Pendidikan Islam Di Perguruan Tinggi (Pendekatan Interdisipliner Dalam Studi Islam)," *Al-Tarbawi Al-Haditsah: Jurnal Pendidikan Islam* 4, no. 2 (2019): 18–34, http://dx.doi.org/10.24235/tarbawi.v4i2.5181.

In relation to the above condition, it is necessary to make some improvements in both the learning process and the availability of learning materials for students, which is intended to make the attitudes and results obtained are maximized. Learning materials are all materials that are arranged systematically, displaying competencies that will be mastered by students and used in the learning process. For example textbooks, modules, handouts, and student worksheets.[5] Learning materials are an important part of the implementation of education, teachers will find it easier to carry out learning and students will learn more easily. During the learning process, learning problems are often related to learning materials and learning resources. Students who have a good background experience of the subject matter to be studied, do not have many problems before and after learning. However, students who lack experience of the material to be studied will face problems in learning, especially with regard to their readiness to learn. This applies to all subjects including Islamic education.

Many Islamic Education learning materials are available on the market, both in the form of worksheets and textbooks compiled by the Ministry of Education and Culture or others. However, it have not been integrated with other subjects such as mathematics and science. For example, one of the Islamic Education materials at the junior high school level is about halal/haram food. In the student book published by the Ministry of Education and Culture, the arguments regarding the recommendation to consume halal food and the prohibition on consuming unclean food are mentioned, as well as the types and examples of halal/haram food, without relating it to mathematics or science. This discussion about halal/haram food will be more interesting if it is related to science. For example, the scientific reason why one should not consume haram or unclean food is seen from the content of the substances.

Several studies have been carried out to develop Islamic Education learning materials to facilitate the learning process (Mursyidah[6]; Syafei[7]; Mursyidah[8]; Mahmudin[9]; Usman et al.[10]; Amin & Rahayu[11]) and integrated learning in Islamic Education (Sabiq[12] and Sari[13]). However, no previous research has

[5] Andi Prastowo, *Panduan Kreatif Membuat Bahan Ajar Inovatif* (Yogyakarta: Diva Press, 2015).

[6] Roihana Waliyyul Mursyidah, *Pengembangan Materi Ajar PAI Berbasis Model Pemaknaan Untuk Meningkatkan Keterampilan Berpikir Kreatif Siswa Sekolah Dasar* (Surabaya: UIN Sunan Ampel, 2019).

[7] Imam Syafei, "Pengembangan Bahan Ajar Pendidikan Agama Islam Berbasis Problem-Based Learning Untuk Menangkal Radikalisme Pada Peserta Didik SMA Negeri Di Kota Bandar Lampung," *Jurnal Al-Tadzkiyyah* 10, no. 1 (2019): 137–58, https://doi.org/10.24042/atjpi.v10i1.3631.

[8] Roihana Waliyyul Mursyidah, "Analisis Kebutuhan Buku Ajar Mata Kuliah Pendidikan Agama Islam Berbasis Strategi Metakognitif," *JOIES (Journal of Islamic Education Studies)* 7, no. 1 (2022): 25–32, https://doi.org/10.15642/joies.2022.7.1.25-32.

[9] Afif Syaiful Mahmudin, "Pengembangan Bahan Ajar Mata Pelajaran Pendidikan Agama Islam Oleh Guru Tingkat Sekolah Dasar," *Journal of Primary Education* 2, no. 2 (2021): 95–106, https://doi.org/10.30762/sittah.v2i2.3396.

[10] Usman, Sabaruddin Garancang, and Bahraeni, "Pengembangan Bahan Ajar Mata Kuliah Pendidikan Agama Islam Berbasis Kisah," *Inspiratif Pendidikan* 8, no. 2 (2020): 301–15, https://doi.org/10.24252/ip.v8i2.11921.

[11] Shadiqul Amin and Nuranisa Rahayu, "Pengembangan Bahan Ajar PAI Berbasis Ensiklopedia Pada Materi Akhlak Di SMA Pancasila Kota Bengkulu," *Manhaj* 10, no. 2 (2021): 159–72, http://dx.doi.org/10.29300/mjppm.v10i2.4987.

[12] Ahmad Fikri Sabiq, "Pembelajaran PAI Dengan Pendekatan Integratif Pada Masa Pandemi Covid-19 Di SD PTQ Annida Salatiga," *Edutrained: Jurnal Pendidikan Dan Pelatihan* 5, no. 1 (2021): 50–58, https://doi.org/10.37730/edutrained.v5i1.132.

d eveloped Islamic Education learning materials integrated with mathematics and science. Therefore, it is important to develop Islamic Education learning materials integrated with mathematics and science to produce the formulations of Islamic Education learning materials in junior high schools.

2. Methods

The research method used in this study is research and development (R & D) which refers to the 4-D model (Define, Design, Develop and Disseminate)[14]. The defining stage is used to determine what is needed by the school and seek information related to the product to be developed in the learning process. Design means the activity of making a product plan to be made for a specific purpose. Develop means the activity of making products based on designs that have been made. Disseminate is the activity of testing and assessing how high the product meets the specified criteria. The model is presented in Figure 1.

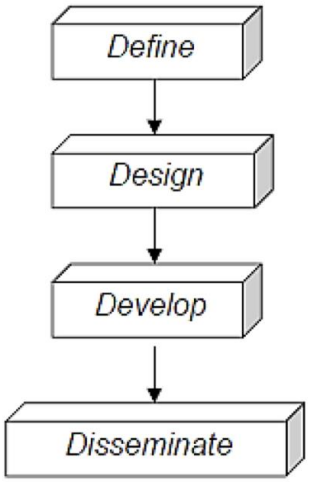

Figure 1. R & D model

The research subjects were students and Islamic Education teachers of Junior High Schools in Banyumas, who were randomly selected to serve as the research sample. Data was collected by tests and questionnaires and analyzed quantitatively using inferential statistics. The data obtained from the questionnaire is quantified for knowing the percentage of validity results of learning material experts.

Table 1 shows the percentage range value as a reference for evaluating the results of the experts' validation. To see an increase in students' understanding of learning before and after being given treatment is used N-gain.

Table 1. Validity Criteria of Learning Material

Interval (*i*)	Criteria
90 % ≤ *i* ≤ 100%	Valid of a very good predicate
80 % ≤ *i* < 90%	Valid of a good predicate
70 % ≤ *i* < 80%	Valid of an enough predicate
0 % ≤ *i* < 70%	Not valid

[13] Bitari Widia Sari and Dedih Surana, "Model Pembelajaran Integratif Untuk Mata Pelajaran Pendidikan Agama Islam Di Masa Pandemi Covid-19," *Jurnal Riset Pendidikan Agama Islam* 2, no. 1 (2022): 65–72, https://doi.org/10.29313/jrpai.v2i1.988.

[14] Sugiyono, *Metode Penelitian Pendidikan Kualitatif, Kuantitatif, Dan R & D* (Bandung: Alfabeta, 2021).

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Table 2 describes the N-Gain value criteria for students' understanding while using learning materials of Islamic Education integrated with mathematics and sains.

Table 2. N-Gain Value Criteria

Interval (g)	Criteria
$g > 0,7$	High
$0,3 \leq g \leq 0,7$	Moderate
$g < 0,3$	Low

3. Result and Discussion

3.1 The Stages of Developing Learning Materials

This research is Research and Development (R & D) type using 4-D model (Define, Design, Develop and Disseminate). It will be described the process of developing learning materials of Islamic Education integrated with mathematics and sains according to 4-D model.

The first stage is define. This stage begins with reviewing the material that will be developed in 7th grade learning materials of Islamic Education subject, namely the universe as a sign of the power of Allah SWT and glorifying Allah SWT by submitting to His commands. After the materials have been determined, the next step is to conduct a literature study to collect references of material, including from Islamic Education books, mathematics books and Natural Sciences books for 7th grade of junior high school. It is intended that the integrated materials remain in accordance with competency standards and basic competencies in the curriculum used.

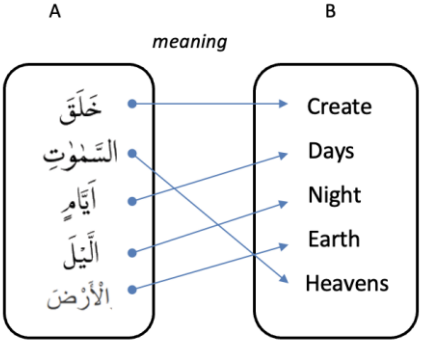

Figure 2. Islamic Education Materials integrated with mathematics

In Figure 2, it can be seen that Islamic Education material discussed is *Q.S. al-A'raaf*/ 21:54 regarding the word-by-word meaning of the verse. In this case, it is associated with mathematical material, namely relations and functions.

The second stage is design. This stage consists of making a research instrument which is the criterion for evaluating Islamic Education learning materials that are integrative- interconnected with mathematics and science. The research instruments used were validation sheets and observation sheets. The validation sheet consists of 12 items, including suitability of material to the curriculum, depth of material, accuracy of material, up-to-date material, adequacy of material, etc. In preparing this validation sheet, a literature review was first carried out related to learning material standards and learning material assessment indicators. The next stage is that this validation sheet is validated by experts who are experienced in the field of educational research. As a result of this validation, experts recommend adding a suggestion column to each item. These stages are also carried out on the observation sheet. Observation sheets are used to find out the responses of teachers and students regarding the use of

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Islamic Education learning materials that are integrative-interconnected with mathematics and science to determine readability, feasibility, attractiveness and so on.

The third stage is develop. At this stage, the creation of Islamic education learning materials that are integrative-interconnected with mathematics and science is carried out. The process in this development stage includes the development of content and components contained in learning materials consisting of text, images, sample questions and practice questions. The material presented is Islamic Education material for junior high school, namely the universe as a sign of Allah SWT's power and glorifying Allah SWT by submitting to His commands. Meanwhile, related mathematics and science materials are relations and functions, as well as the solar system. The material is presented using simple and clear language so that students can easily understand it. The presentation of the text is accompanied by pictures, the use of color, bold and italics to emphasize key words such as sub-chapter titles. The font size and typeface in this teaching material is Calibri with a font size of 14 pt. Image content is developed using software and application such as GeoGebra 5.0 and Canva to produce accurate and interesting image shapes. The use of color in image content is consistent and easy to read, because the background color used is white. Text and images are presented side by side on one page. Presentation of images serves to illustrate the material presented.

The Figure 3 is an example of the visual display of the developed learning materials. On the front page, there is a cover to draw the attention of potential readers namely junior high school students. The cover displays the identity of the learning material which includes the book title, for whom this book is intended, author's name, simple image and design.

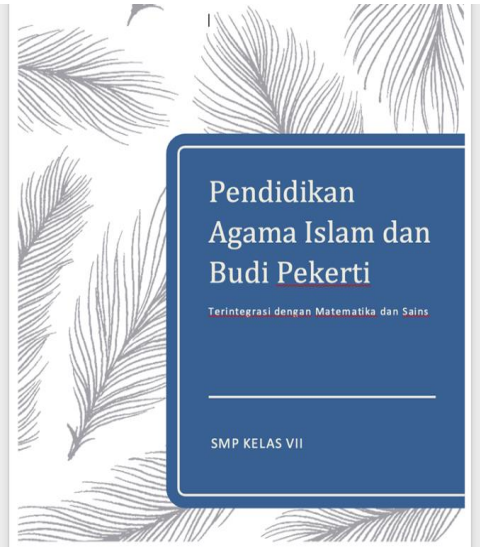

Figure 3. Learning Materials Cover View

In the content of learning materials, the material is presented in accordance with competency standards and basic competencies using simple and clear language, and is equipped with pictures and tables to make it easy to understand. Figure 4 is an example of content view of learning material.

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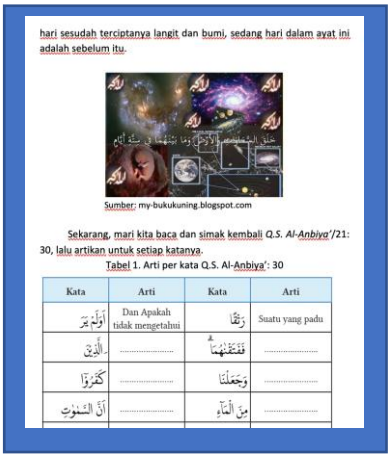

Figure 4. Content View of Learning Material

After the learning materials are developed, the validation stage is then carried out so that the validity of the developed learning materials can be determined based on expert judgment. The experts are lecturers who have the appropriate educational background. The experts of mathematics are lecturers who have a doctoral educational background in mathematics education, as well as science experts and Islamic Education experts. This is based on the consideration that lecturers with doctoral degrees have mastered their field of expertise. Validation was carried out on UIN Prof. K. H. Saifuddin Zuhri Purwokerto because the experts were the lecturers at that college. Learning materials are validated by the experts by filling out validation sheets and providing suggestions for improvement. This is done to see the adequacy of the material, the breadth of the material, the depth of the material, and so on. The learning material that have been validated are then revised according to expert suggestions and recommendations during the validation process.

The fourth stage is disseminate. After the learning materials have been validated by experts and revised, then a limited trial phase is carried out for the use of learning materials by teachers and students, which aims to determine the response of teachers and students to the learning materials being developed. After using the learning materials, teachers and students were asked to write down their suggestions and comments regarding the Islamic Education learning materials being developed. Learning materials that have gone through limited trials were then revised again based on suggestions and recommendations from teachers and students.

3.2 Validation of Learning Materials

The learning material was validated by lecturers who have an expert in Islamic Education, Mathematics and Science. Validation by experts aims to obtain information, criticism, and suggestions so that the developed learning materials become quality products in terms of materials and performances. The validation results can be seen in table 3. The maximum score for each statement item in the validation sheet is 4, while the minimum score is 1.

Table 3. Expert's Validation Results

Aspects	Islamic Education	Mathematics	Science
Average	3,375	3,313	3,25
Percentage	84,4%	82,8%	81,25%

Table 3 shows that an average score of Islamic Education expert is 3,375 with a percentage of 84.4%, average score of Mathematics expert is 3,313 with a percentage of 82,8%, average score of science expert is 3,25 with a percentage 81,25%. Those are in the "valid of a good predicate" category.

Furthermore, learning materials are given to the teachers to find out the teacher's assessments and suggestions. Tabel 4 shows the results of the assessment of 6 teachers:

Table 4. Teacher's Validation Results

Aspects	Score
Material	3,93
Appearance	3,46
Average	3,63
Percentage	90,9%

Based on Table 4, it can be seen that an average score of 3.63 and a percentage of 90.9% in the "valid of very good predicate" category. Apart from being tested on teachers, the learning materials were also tested on students to find out assessments and suggestions regarding the learning materials. Table 5 is the results of the assessment of 30 students on learning materials.

Table 5. Students' Response of Learning Materials

No.	Aspects	Average
1.	The presentation of the material is clear and easy to understand	3,8
2.	The language is simple and easy to understand	3,9
3.	There are pictures that make it more interesting	3,75
4.	This learning material makes me excited to learn	3,8
5.	This learning material helps me to understand Islamic Education materials, mathematics and science	3,6
6.	The instructions for the questions/assignments in this learning material are easy to understand	3,7
7.	The appearance of learning materials is interesting	3

Table 5 shows an average score of 3.69 and a percentage of 92.2% in the "valid of very good predicate" category. Based on this result, it can be concluded that the learning materials have a good quality and very feasible to use.

In addition to giving assessments, the experts, teachers and students also provide comments and suggestions regarding the learning materials being developed. The following are suggestions given by experts and improvements made:

1) Changing type and size of font

Initially, the font used was Bodoni MT Condensed with a size of 14 pt. This type of font is less attractive for this type of learning material and the size is too "thin". The typeface is replaced with Calibri with a size of 14 pt.

2) The suitability of the image with the context of the material

There are several pictures presented in learning materials, the aim is to make the appearance more attractive and clarify the subject matter. However, there are several images whose placement does not match the context of the material. Therefore, the placement of images is rearranged into one page with context. In addition, the images are adapted to the context of the material. For

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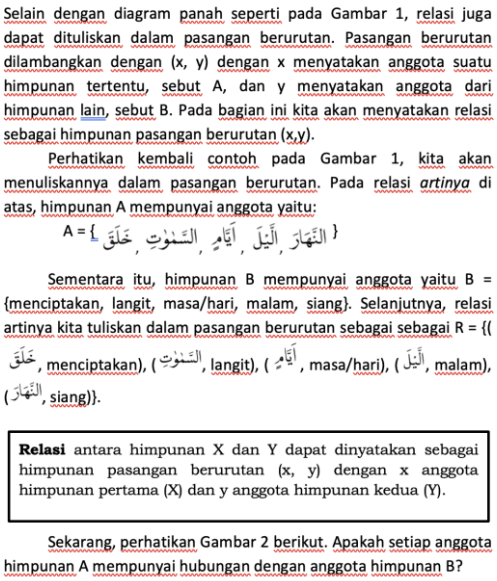
example, when telling the context of the solar system, the picture presented is also a picture of the solar system.

3) Provide information when integrating with other material (what subject material).

In teaching materials, the presentation of the material is not explained how it integrates with what subject matter, so there is additional information about the integration.

4) Adding illustrations

At first there were only 2 pictures for each chapter. To make it more attractive and lively, relevant images are added to each page.



Selain dengan diagram panah seperti pada Gambar 1, relasi juga dapat dituliskan dalam pasangan berurutan. Pasangan berurutan dilambangkan dengan (x, y) dengan x menyatakan anggota suatu himpunan tertentu, sebut A, dan y menyatakan anggota dari himpunan lain, sebut B. Pada bagian ini kita akan menyatakan relasi sebagai himpunan pasangan berurutan (x,y).

Perhatikan kembali contoh pada Gambar 1, kita akan menuliskannya dalam pasangan berurutan. Pada relasi *artinya* di atas, himpunan A mempunyai anggota yaitu:

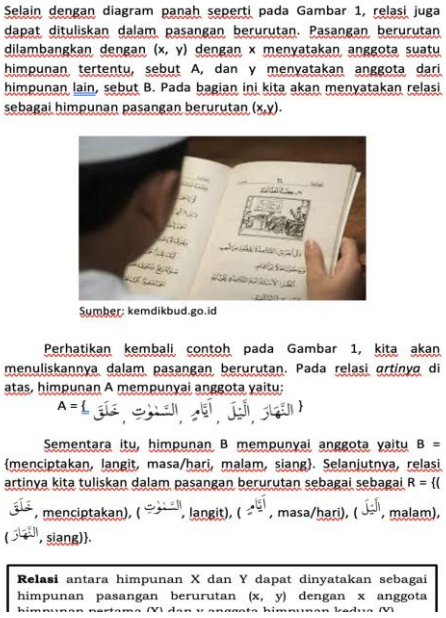
A = { خَلَقَ , السَّمٰوٰتِ , اَيَّامٍ , الَّيْلَ , النَّهَارَ }

Sementara itu, himpunan B mempunyai anggota yaitu B = {menciptakan, langit, masa/hari, malam, siang}. Selanjutnya, relasi artinya kita tuliskan dalam pasangan berurutan sebagai sebagai R = {(خَلَقَ, menciptakan), (السَّمٰوٰتِ, langit), (اَيَّامٍ , masa/hari), (الَّيْلَ, malam), (النَّهَارَ, siang)}.

Relasi antara himpunan X dan Y dapat dinyatakan sebagai himpunan pasangan berurutan (x, y) dengan x anggota himpunan pertama (X) dan y anggota himpunan kedua (Y).

Sekarang, perhatikan Gambar 2 berikut. Apakah setiap anggota himpunan A mempunyai hubungan dengan anggota himpunan B?

Figure 5. No Figure before Revision



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Sumber: kemdikbud.go.id

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Relasi antara himpunan X dan Y dapat dinyatakan sebagai himpunan pasangan berurutan (x, y) dengan x anggota

Figure 6. Adding Figure after Revision

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5) Reduce narratives that are too long and rambling

The narrative written, especially in the context section, is too long, causing readers to get bored. Therefore, the narrative is reduced and made shorter and more concise.

6) Increase the number of practice questions

There are too few practice questions at the end of the discussion, so several questions need to be added to make the evaluation more comprehensive. This has been done, initially the number of questions was only 5, then increased to 10. Apart from that, evaluations were also added not only for cognitive, but also affective and psychomotor.

7) Adding color

The illustrations were initially colorless. To make it more interesting, the image which was originally only black and white was colored with bright colors.

This research was conducted with the aim of developing integrative-interconnected science learning materials with mathematics and science. The learning materials developed contain Islamic Education material, namely the universe as a sign of the power of Allah SWT and Glorifying Allah SWT by submitting to His commands and some mathematics and science material such as relations and functions and the solar system. The development of learning materials at the beginning was designed to facilitate students and teachers in understanding the material in an integrative manner. Learning materials are developed using simple language and according to the age of students, as according to Ulpah & Novikasari that learning materials should use easy-to-understand language so that students gain experience from the language used[15]. After the material is developed then it is validated by experts. Experts provide assessments and comments/suggestions on the teaching materials developed. The results of the validation of Islamic Education experts obtained an average score of 3,375 and a percentage of 84.4% in the "valid" category, the validation results of Mathematics experts obtained a score of 3.3125 and a percentage of 82.85% in the "valid" category, the results of the validation of science experts obtained a score of 3.25 and a percentage of 81.25% in the "valid" category. The learning materials are also revised according to suggestions and input from experts such as changes in type and size of letters, suitability of images and clarity of sentences or language used.

After being validated by experts, then the learning materials were tested on teachers and students. The results of the teacher's assessment showed an average score of 3.63 and a percentage of 90.9% in the "very valid" category. The results of the student assessment showed an average score of 3.69 and a percentage of 92.2% in the "very valid" category. Based on the results of this assessment, it can be concluded that the Islamic Education learning materials that are integrative-interconnected with mathematics and science that are developed are of good quality, so they are very feasible to use. The learning materials were also revised according to suggestions and input from teachers and students such as adding colors and adding questions at the end of the discussion for students evaluation.

The learning materials developed are improved according to suggestions from experts, teachers and students. The improvements made support Novikasari & Ulpah opinion that teaching materials need to consider the opinions and needs

[15] Maria Ulpah and Ifada Novikasari, "Developing Islamic Context-Based Learning Materials in Increasing Students' Mathematical Understanding," *Al-Jabar : Jurnal Pendidikan Matematika* 11, no. 1 (June 24, 2020): 29–38, https://doi.org/10.24042/ajpm.v11i1.5432.

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of teachers and students.[16] Several improvements have been made related to the technical presentation of learning materials to make them neater. Additions to questions and material other than Islamic Education, namely mathematics and science.

The Islamic Education material developed is integrated with material on relations and functions in mathematics so that students have an overview of the connections between mathematics and everyday life. As according to Polman, Hornstra, and Volman that making meaningful mathematics learning carried out by teachers in class by making connections with mathematical concepts with students' daily activities.[17] This is confirmed by Adnan's study that the presentation of mathematics can be in accordance with the representational system which is a contextual problem available around students and can be solved by them.[18] As the results of previous studies show that learning materials based on Islamic contexts can support increased understanding of mathematics and motivate students to learn it more.[19]

Apart from being integrated with mathematics, this learning material also integrates Islamic Education materials with science. For example, in Q.S. al-Anbiya'/21: 30 explained with a scientific approach, namely the material of the solar system. According to Muhyi, science and religion are integrative-complementary.[20] Divine knowledge as stated in al-Quran is positioned as the grand theory of science or in other words the grand theory of divine science is taken from the *qauliyah* verse while the grand theory of science (human science) is taken from the *kauniyah* verse. From that opposite starting point, the two met at one point of truth. Between the two there is no conflict, if there is a real conflict it is not a conflict between science and religion, but a conflict of understanding between scientists and religionists.

This finding shows that integrative-interconnected Islamic Education learning materials with mathematics and science Teaching materials can be used in learning as an effort to provide comprehensive understanding to students. The results of discussions with experts on R & D suggest that the learning materials should be tested not only to find out student responses but also to find out how students understand. Therefore, the experiments can be conducted for larger groups and more students.

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[16] Ifada Novikasari and Maria Ulpah, "The Development of Islamic Context Learning Materials to Facilitate the Conceptual Understanding of Mathematics," *JTAM (Jurnal Teori Dan Aplikasi Matematika)* 6, no. 3 (July 16, 2022): 488, https://doi.org/10.31764/jtam.v6i3.8364.

[17] Judith Polman, Lisette Hornstra, and Monique Volman, "The Meaning of Meaningful Learning in Mathematics in Upper-Primary Education," *Learning Environments Research* 24, no. 3 (October 2021): 469–86, https://doi.org/10.1007/s10984-020-09337-8.

[18] S Adnan, Dwi Juniati, and Raden Sulaiman, "Student's Mathematical Representation in Solving Geometry Problems Based on Cognitive Style," *Journal of Physics: Conference Series* 1417, no. 1 (December 1, 2019): 012049, https://doi.org/10.1088/1742-6596/1417/1/012049.

[19] Yusrina Qotrun Nada and Maria Ulpah, "Pengembangan Bahan Ajar Matematika Berbasis Konteks Islami Untuk Meningkatkan Pemecahan Masalah Matematika Siswa Kelas VIII," *Polynom: Journal in Mathematics Education* 2, no. 1 (2022): 54–61, https://doi.org/10.14421/polynom.2022.021-04.

[20] Abdul Muhyi, "Paradigma Integrasi Ilmu Pengetahuan UIN Maulana Malik Ibrahim Malang," *Mutsaqqafin: Jurnal Pendidikan Islam Dan Bahasa Arab* 1, no. 1 (2018): 45–64, https://doi.org/10.46257/mutsaqqafin.v1i01.24.

4. Conclusion

This research and development produces products in the form of integrative-interconnected Islamic Education learning materials with mathematics and science. The stages carried out to produce these teaching materials are as follows: a) define stage; b) design stage; c) develop stage; and d) dissemination stage. Islamic Education expert validation results obtained an average score of 3,375 and a percentage of 84.4% in the "valid" category, Mathematics expert validation results obtained a score of 3.3125 and a percentage of 82.85% in the "valid" category, science expert validation results were obtained a score of 3.25 and a percentage of 81.25% in the "valid" category. The teacher assessment results show an average score of 3.63 and a percentage of 90.9% in the "very valid" category. Meanwhile, the student assessment results showed an average score of 3.69 and a percentage of 92.2% in the "very valid" category. This teaching material was also revised according to suggestions and input from experts, teachers and students. Based on the results of the assessment and revision, it can be concluded that the integrative-interconnected Islamic Education learning materials with mathematics and science are of good quality, so they are very suitable for use in learning.

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