

DEVELOPMENT OF AN ENCYCLOPEDIA OF MATHEMATICS IN THE QUR'AN FOR ISLAMIC JUNIOR HIGH SCHOOL

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Abstract:

One of the core competencies expected from students at the Islamic Junior High School level is a spiritual attitude displayed in every subject, including mathematics. Spiritual competence in learning mathematics can be achieved by integrating mathematics with religion, so integrative teaching material references are needed. This research aims to develop an encyclopedia of mathematics in the Qur'an as a valid and practical reference for integrative teaching materials. The method used is research and development with a 4D model (define, design, develop, disseminate). The quality of the product being developed is measured from validity and practicality. The validity aspect is assessed by expert validators, including material, religious, media, and language experts. Meanwhile, the practical aspect is assessed by practitioners. The data collected includes the results of validity and practicality questionnaires and qualitative data in the form of suggestions from validators. The research instruments used were questionnaires of feasibility, practicality, and recommendations or input sheets. This study shows that the average questionnaire score from all experts shows valid criteria with a score of 84.10%. The average questionnaire score from teacher practitioners showed high criteria with a score of 84.37% and student responses showed very high criteria with a score of 85.41%. Based on these results, the developed encyclopedia of mathematics in the Qur'an is valid and practical.

Keywords: Encyclopedia, Mathematics Learning, Al-Qur'an

PENGEMBANGAN ENSIKLOPEDIA MATEMATIKA DALAM AL-QUR'AN UNTUK JENJANG MADRASAH TSANAWIYAH

Abstrak:

Salah satu kompetensi inti yang diharapkan dari peserta didik pada jenjang Madrasah Tsanawiyah adalah sikap spiritual yang dimunculkan di setiap mata pelajaran, termasuk matematika. Kompetensi spiritual dalam pembelajaran matematika dapat dilakukan dengan menerapkan integrasi matematika dengan agama, sehingga diperlukan referensi bahan ajar integratif. Tujuan penelitian ini

adalah untuk mengembangkan ensiklopedia matematika dalam al-Qur'an sebagai referensi bahan ajar integratif yang valid dan praktis. Metode penelitian yang digunakan adalah penelitian dan pengembangan dengan model 4D (define, design, develop, disseminate). Kualitas produk yang dikembangkan ini diukur dari aspek kevalidan dan kepraktisan. Aspek kevalidan dinilai oleh validator ahli di antaranya ahli materi, ahli agama, ahli media, dan ahli bahasa. Sedangkan aspek kepraktisan dinilai oleh praktisi. Data yang dikumpulkan meliputi hasil angket kevalidan dan kepraktisan serta data kualitatif berupa saran dari validator. Adapun instrumen penelitian yang digunakan adalah angket kelayakan, kepraktisan, dan lembar saran atau masukan. Penelitian ini menunjukkan bahwa rata-rata skor angket dari semua ahli menunjukkan kriteria valid dengan skor 84,10%. Sedangkan rata-rata skor angket dari praktisi guru menunjukkan kriteria tinggi dengan skor 84,37% dan dari respon siswa menunjukkan kriteria sangat tinggi dengan skor 85,41%. Berdasarkan hasil tersebut, ensiklopedia matematika dalam al-Qur'an yang dikembangkan terbukti valid dan praktis.

Kata Kunci: Ensiklopedia, Pembelajaran Matematika, Al-Qur'an

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INTRODUCTION

In accordance with Law Number 20 of 2003, national education aims to develop the potential of students to become human beings who have faith and devotion to God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. This goal covers the affective (attitude), cognitive (knowledge), and psychomotor (skill) domains (Magdalena, Islami, Rasid, & Diasty, 2020). What needs to be underlined from this goal is to produce people who believe and are devout (Noor, 2018; Bahri, 2021). So, one of education's main goals is to develop knowledge and increase students' faith and devotion.

Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 24 of 2016 presents the core competencies of spiritual attitudes, social attitudes, knowledge, and skills. At the Islamic Junior High school, it is emphasized that spiritual attitude competency for mathematics material is that students can appreciate their religion's teachings (Asmarawati, Riyadi, & Sujadi, 2016; Hartoyo, Nursangaji, & Suratman, 2019). This assertion aligns with the previously stated national education goals, so spiritual

competence is also expected to be developed through mathematics learning. Developing spiritual competence in mathematics learning can be done by integrating mathematics and religion (Safitri, Haryanto, & Rofiki, 2020).

In reality, based on research conducted by several previous researchers, the spiritual abilities of junior high school students still need to be improved. According to Susrizal (2017), the spiritual potential of students in one junior high school has not been maximized, with an indication that students have not shown their religious attitudes to students either through attitude, behavior, speech, or association. Meanwhile, according to Widiyawati, and Muhammad (2023), the cultivation of spiritual abilities in students in a junior high school is still hampered by rapid social change. As a result, poor cultivation of spiritual abilities causes irregularities in schools. Therefore, efforts are needed to improve students' spiritual abilities, one of which is using religiously integrated learning references.

Religious integrated mathematics learning from primary to secondary school levels has been carried out in various efforts, such as preparing teaching materials, learning media, and others. Religion-integrated mathematics learning is learning that is carried out using integrated learning tools (Syamsuar, Sulasteri, Suharti, & Nur, 2021). This is proven by previous research which developed integrated mathematics learning of the Qur'an at the Elementary School level in the form of preparing integrated religious teaching materials (Ihsan 2019; Rahmawati, Haryadi, & Yaumilia, 2020; Ulia, Sari, & Hariyono, 2020), learning media integrated religion (Laily, 2021), or implementation of integrative learning (Kurniasih 2016; Malasari, Atikoh, Kamilia, & Na'im, 2022). Furthermore, at the junior secondary level, teaching materials have been prepared (Maarif, 2021; Riana & Ibrahim, 2022; Yuniati & Sari, 2018), learning media (Damayanti, Putra, Farida, & Ambarwati, 2021; Syafitri, Huda, & Herlina, 2019), or learning implementation (Yuliani, Hartoyo, & Nursangaji, 2020). At the upper secondary level, there has also been the preparation of integrated religious teaching materials (Amir, Nari, & Huda, 2020; Fitriza, Putra, & Samad, 2020; Nirmalasari 2019), media (Ikhsan, 2020; Nugroho, 2021), and implementation of integrated religious learning (Fathani, 2019).

Another reference in developing the integration of mathematics and religion can be an encyclopedia. Encyclopedias can provide broad and basic knowledge about a topic (Muzakki, Yuniasih, & Sakdiyah, 2020). Apart from that, encyclopedias can also increase motivation and provide new

understanding for students (Erdawati 2018; Rochimah 2018; Romli, Sesanti, & Triwahyuningtyas, 2020). However, based on previous research studies conducted by Lestari (2019), it is stated that the use of encyclopedias for learning mathematics in Islamic boarding schools is still minimal.

The development of this encyclopedia is important because it is known that the learning resources used by teachers are generally less varied, namely using mathematics textbooks (Zhafirah & Aisiah, 2019). In addition, the limitations of developing a mathematics encyclopedia in the Qur'an lie in specific mathematical topics. This statement is strengthened based on the results of previous research, that the development carried out was limited only to flat building materials (Pratiwi, 2015), and spatial building materials (Lestari 2019; Romli, Sesanti, & Triwahyuningtyas, 2020). This means that there is still no development of a mathematics encyclopedia in the Qur'an that involves several topics at the Islamic Junior High School level. Thus, it is necessary to update the mathematics encyclopedia in the Qur'an for the Islamic Junior High School level.

METHODS

This research will develop a product in the form of an encyclopedia of mathematics in the Qur'an. Therefore, this research uses Research and Development. The development model chosen is a 4D model, which contains the stages of defining, designing, developing, and disseminating (Puspasari, 2019). At the definition stage, a needs analysis is carried out referring to the curriculum and various relevant sources. At the design stage, the design of the encyclopedia that will be developed includes the depth of the material that will be included. At the development stage, the development of the encyclopedia begins until a product called prototype one is obtained.

This prototype is then assessed by experts to determine the validity or suitability of the product. Based on the results of the assessment and expert input, prototype one was revised to produce prototype 2. In this way, the desired final encyclopedia product would be produced. To get a quality prototype, it is necessary to test quality aspects. Hamzah (2021) said that in developing a product, its quality can be tested through the validity and practicality values of the validator. Therefore, in this study, researchers used the validity and practicality scores of the selected validators to determine the quality of the encyclopedia developed. Next, at the dissemination stage, researchers disseminate the product through scientific seminar forums,

register the product on Intellectual Property Rights (IPR), and collaborate with book publishers.

The validity aspect is measured from assessments by expert validators. Expert validators in this research include (a) 1 material expert, (b) 1 religious expert, (c) 1 media expert, (d) 1 language expert, and (e) 6 practitioners. All experts come from the lecturer element, and practitioners come from the mathematics teacher and students in grades 7, 8, and 9. The criteria for each expert and practitioner are a minimum of a master's degree and experience in the field for at least five years. Then, the practical aspect is an assessment from the mathematics teacher and student response questionnaire after being given the Encyclopedia. Thus, the data collected includes the results of validity and practicality questionnaires as well as qualitative data in the form of suggestions or input from validators. Meanwhile, the research instruments are a feasibility, practicality questionnaire, and a suggestion or input sheet. The questionnaire uses a Likert scale with four scales: very good (4), good (3), not good (2), and very bad (1). Data in the form of questionnaire results were analyzed using simple quantitative techniques using the following formula.

$$N = \frac{\sum X}{\sum X_s} \times 100\% \quad (1)$$

(source: Widana, Juliawan, Jaya, & Juliana, 2022)

with

N : questionnaire score

$\sum X$: total score

$\sum X_s$: maximum score

Questionnaire assessment level qualifications refer to table 1.

Table 1. Validity Questionnaire Assessment Level Qualification

Number	Questionnaire Score	Qualification
1.	85% - 100%	Very valid
2.	70% - 84%	Valid
3.	50% - 69%	Not valid
4.	< 49%	Invalid

Practicality analysis follows the same steps as validity data analysis. The practical aspect refers to the category of validity assessment by expert validators in table 1. These criteria were adopted from research by Irawan and Hakim (2021).

Table 2. Practicality Questionnaire Assessment Level Qualifications

Number	Questionnaire Score	Qualification
1.	85% - 100%	Very High
2.	70% - 84%	High
3.	50% - 69%	Low
4.	< 49%	Very Low

Data in the form of suggestions or input, as well as the results of interviews with validators, will be analyzed qualitatively. Things that need to be improved in the encyclopedia according to suggestions or input are considered and adjusted to the developments carried out.

RESULTS AND DISCUSSION

The results and discussion of the research are presented based on the development model used, namely 4D. The description of the research results is as follows.

1. Description of The Defined Stage

a. Front-end Analysis

The data from this stage is the result of extracting information from several sources related to real problems that occur in learning. Some sources referred to include mathematics teachers and students at the Islamic boarding school level. Apart from exploring these sources, the author also obtained information through a preliminary survey at tsanawiyah madrasas.

Based on extracting information from mathematics teachers, several pieces of information were obtained. Mathematical material at the Islamic Junior High School level is adapted to the developmental stage of children who are starting to be able to think abstract concepts. Apart from that, the material for grades 7, 8, and 9 has continuity, so it requires a complete understanding of each material. The material taught in class refers to the independent curriculum. In learning, teachers use handbooks and teaching materials that they make themselves.

Based on school information, teachers only use limited teaching materials (Rahmadhani & Wahyuni, 2020). This makes students often feel bored with the learning resources used by teachers. Students tend to like reading books that present material concisely without being long-winded. Furthermore, students are often confused by the different concepts presented

from several sources, resulting in difficulty understanding the material independently.

In line with information from the school, researchers conducted preliminary observations to analyze learning needs. From the observation activities, researchers obtained information that student learning resources in the form of printed books were still lacking. Students only rely on references from the handbook as a learning resource in class. Moreover, in Islamic-based schools, there is still no reference for mathematics material integrated with religious values. With the existence of a mathematics encyclopedia in the Qur'an, it can be used by teachers as inspiration in conducting integrated mathematics learning. As for students, this encyclopedia is useful as an additional insight into the verses of the Qur'an that contain mathematical concepts. This encyclopedia can be utilized by teachers and students because it contains excerpts of Qur'anic verses, translations, and explanations. The coverage of the material contained is also mostly from grade 7, 8, and 9 material. This makes students unfamiliar with integrated mathematics material and questions.

b. Student Analysis

The students who are targeted for using this encyclopedia are all students who are currently studying at the Islamic Junior High School level of education. Students at Islamic Junior High School are expected to have more grades than other students. This is because more Islamic religious subjects are taught than students in schools in general so that students have broader and deeper religious knowledge. Knowledge about religion is the initial capital to study integrated mathematics material, especially mathematics in the Qur'an (Mahmudah, 2022). By incorporating religious values into mathematics material, students are expected to be able to master mathematics while also practicing religious values.

c. Material Analysis

The materials taught were obtained Based on the curriculum analysis and beginning-to-end analysis. The material taught to grade 7 students includes integers, rational numbers, ratios, algebraic forms, congruence, data, and diagrams. The material taught to grade 8 students includes simplifying algebraic forms, systems of linear equations in two variables, linear functions, investigating the properties of geometric figures, triangles and quadrilaterals, and probability. Meanwhile, the material taught to grade 9 students includes description and factoring, square roots, quadratic equations, quadratic

functions, congruence, circles, the Pythagorean theorem, and sample surveys. If you look at the pattern, the material in grades 7 to 9 is interconnected, and the higher the level, the higher the level of complexity.

2. Description of The Design Stage

At the design stage, researchers create a draft encyclopedia first. The draft contains content that will be included in the encyclopedia, namely the foreword, table of contents, content, and bibliography. In creating this draft, the researcher studied various references regarding verses related to mathematical concepts. After that, the researcher studied each verse to ensure there were mathematical concepts, especially material at the Islamic boarding school level. Some of the math materials at the junior high school level contained in the Qur'an are presented in table 3.

Table 3. The results of the analysis of math material contained in the Qur'an

Number	Math Material	Surah
1.	Numbers	al-Baqarah, Ali Imran, an-Nisa', al-Maidah, al-An'am, al-A'raf, al-Anfal, at-Taubah, Yunus, Hud, Yusuf, al-Hijr, an-Nahl, al-Isra', al-Kahfi, Maryam, Thaha, al-Anbiya', al-Mu'minin, an-Nuur, al-Furqon, an-Naml, al-Qashash, al-Ankabut, Luqman, as-Sajdah, Saba', Yasin, ash-Shaffat, Shad, az-Zumar, Ghafir, Fushshilat, asy-Syura, az-Zukhruf, al-Ahqaf, Qaf, al-Hadid, al-Mujadilah, al-Muzzammil, al-Muddassir, al-Mursalat, at-Thalaq, al-Mulk, al-Haqqah, al-Ma'arij, Nuh, an-Naba', al-Qadr
2.	Sets	Fathir, an-Nuur
3.	Algebraic Forms and Their Operations	al-Baqarah, al-Anfal
4.	Comparison	al-Anfal
5.	Social Arithmetic	Yusuf
6.	Functions	al-Anfal
7.	Circle	al-Hajj
8.	Opportunities	al-Anbiya'

9.	Statistics	Qaf, az-Zukhruf, al-Jatsiyah, al-Qamar, al-Mujadilah, al-Muthaffifin
10.	Ranked Numbers	al-Hadid
11.	One Variable Inequality	an-Nisa' Al-Mujadilah, ash-Shaffat, al-Muzzammil
12.	Geometric Transformations	an-Nuur, Ibrahim
13.	Curved-Sided Spaces	an-Nisa', Al-Anbiya', an-Nazi'at
14.	Straight Line Equation	al-Anfal
15.	Angles	al-Mujadilah

Then, the researcher briefly and clearly explained the mathematical concepts in each verse to make it easier for students to understand them. Researchers also explain the material discussed by referring to scientific references. Finally, the researcher sorted the verses containing mathematical concepts based on the order of the material in the existing curriculum.

After completing the encyclopedia draft, the researcher designed the front cover, contents, and back cover. This stage contains several stages of developing a draft encyclopedia, including:

a. Media Selection

The appropriate media for the study results from several articles, books, and references relevant to the topic of mathematics in the Qur'an is the printed media encyclopedia. Mathematics encyclopedia developed using Canva software. Canva is a graphic design application program. Researchers use this application to develop parts of editing the encyclopedia's front page cover, contents, and back cover. Figure 1 shows the front cover of the developed encyclopedia.



Figure 1. Front cover design of the Encyclopedia of Mathematics in the Qur'an

b. Format selection

The choice of format for a mathematics encyclopedia in the Qur'an is adapted to the rules for compiling encyclopedias in general. Based on the KBBI, encyclopedias can be arranged systematically alphabetically (A-Z) or thematically. In the development by researchers, the encyclopedia structure uses a thematic arrangement, namely sorting based on material from grade 7 to grade 9.

c. Initial design for a mathematical encyclopedia in the Qur'an

The initial design aims to determine the product's design concept. The initial draft of the mathematics encyclopedia in the Qur'an was as follows:

1) Initial cover design

The encyclopedia cover contains the title, author's name, and images relevant to the encyclopedia's contents. The results of the cover design can be seen in figure 1.

2) Initial draft of the foreword

The foreword contains the author's remarks. The preface begins with thanksgiving, thanks to various parties concerned, a brief description of the encyclopedia's contents, and a request for criticism and suggestions regarding the encyclopedia.

3) Initial design of the table of contents display

The table of contents contains the order of the contents of the encyclopedia. The contents are arranged based on chapters in the encyclopedia accompanied by the correct page order. Details of the encyclopedia's table of contents can be seen in figure 2.



The image shows a page titled "DAFTAR ISI" (Table of Contents) for an encyclopedia. The page is numbered "i" in the top left and "ii" in the bottom right. The table lists various mathematical topics and their corresponding page numbers.

Topic	Page Number
Cover	i
Kata Pengantar	ii
Daftar Isi	iii
Bilangan	1
Himpunan	5
Relasi, Fungsi dan Operasinya	9
Pembangunan	24
Aritmetika Sosial	25
Pada Bilangan	35
Fungsi	35
Ungkuran	33
Peluang	34
Statistika	35
Bilangan Berpangkat	36
Pertidaksamaan Satu Variabel	39
Transformasi Geometri	41
Bangun Ruang dan Luasnya	43
Pengukuran Data Lunak	45
Sudut	45
Daftar Pustaka	50

Figure 2. Initial Draft Table of Contents

4) Initial draft of the contents of the Mathematics Encyclopedia in the Qur'an

Each mathematical material in the encyclopedia contains a brief description and classification of each verse and its meaning, which has mathematical concepts. Then, the relationship is explained, namely, each material and verse of the Qur'an. More details can be seen in figure 3.



Figure 3. Initial Draft of the Contents an Encyclopedia

3. Description of The Development Stage

At the product development stage, researchers describe the results of developing the encyclopedia. The following describes the results of developing a mathematics encyclopedia for the Islamic Junior High School level.



Physical form	: Print media
Title	: Ensiklopedia Matematika dalam al-Qur'an untuk Jenjang Islamic Junior High School
Applications used	: Microsoft Office Word and Canva
Display size	: 126 × 250 mm
Many pages	: 51 pages

After designing the encyclopedia, the output of this stage is prototype one, which experts will validate. This encyclopedia was validated from several aspects, namely mathematical material, integration of the Qur'an, design, and language. The specifications of the validators are by the assessment aspect. The validator for mathematics material is a mathematics lecturer with a doctorate. The validator for integrating the Qur'an is a lecturer in Al-Qur'an science and tafsir with a doctorate. The validators for the design are professors in the field of computer science. Meanwhile, the validator for language is an Indonesian language lecturer. The validators carry out assessments using validation and suggestion sheets.

Several aspects of the feasibility of assessing the encyclopedia developed in this research include material aspects, verses from the Qur'an, design, and language. Arifin (2009) states that the appropriateness of teaching materials consists of material, presentation, language, and graphics. The Islamic component in verses from the Qur'an is an additional component because the encyclopedia in this research contains mathematical material from the Qur'an.



On the material aspect, the material validator provided several comments and suggestions. One of these suggestions is explaining the brief description of the number material. Researchers are not allowed to discuss or mention sets first because they have not previously discussed sets. Apart from that, in the collection material, a comment was made that the definition used needed to be completed. Furthermore, it is recommended to add explanations regarding number operations in the algebra material and its operations.

Table 4. Excerpts of Material Revision

Before Revision	After Revision
 <p>Sets can be defined</p>	 <p>The set is undefined</p>



On the design aspect, the design validator provided several comments and suggestions. The front cover already describes mathematics and the Qur'an, but there are no encyclopedia illustration elements. Then, the size of Arabic writing must be more significant than Latin writing. Apart from that, the contents of an encyclopedia are better if they are equipped with pictures, tables, or graphs.

Table 5. Excerpts of Design Revision

Before Revision	After Revision
	
The cover does not contain elements that describe an encyclopedia	The cover includes elements that depict an encyclopedia

In the integration aspect, the Integration validator provides comments and suggestions. The verse used in social arithmetic material is QS. Ali Imran verse 130 was changed to QS. Yusuf verse 20. Apart from that, the verse used in the one-variable linear equation material is QS. ar-Ra'du verse 16 was altered to QS. al-Mujadilah verse 7, QS. ash-Shaffat verse 147, al-Muzammil verse 20, and QS. an-Nisa' verses 11-12. The validator also commented on the verses that contain the concept of number, that it must be ensured that the number mentioned is not an ordinal number or expresses a level. This is because not all the numbers contained in the Qur'an mean numbers. For example, in QS. Al-Ikhlâs verse 1, $\text{أَحَدٌ اللّٰهُ هُوَ فَالْ}$, the word "أَحَدٌ" means one. However, it does not indicate a number, because the meaning of "one" in this verse is an attribute of Allah. Therefore, the researcher ensures that all the numbers listed in this encyclopedia contain the meaning of "number", not properties, ordinal numbers, or anything else.

Table 6. Excerpts of Integration Revision

Before	After
	
<p>The verse that contains the concept of social arithmetic is QS. Ali Imran, verse 130</p>	<p>The verse that includes the idea of social arithmetic is QS. Yusuf verse 20</p>

In the language aspect, the Language validator commented on the encyclopedia's writing. You need to pay attention to the use of punctuation, italics, capital letters, and the choice of diction. You also need to pay attention to the arrangement of sentences so that they are connected, making it easier for readers to understand them. To make it easier for readers to understand the suggestions given by each validator, the researchers made a recapitulation of each suggestion in table 7.

Table 7. Recapitulation of The Validators Suggestion

Validator	Suggestion
Material validator	<ul style="list-style-type: none"> • In defining the material "number" it is advisable not to mention the word "collection" because this word leads to set material, while the set has not been studied by students. • On the material "set" the definition displayed needs to be completed clearly. • And in the material "algebraic form" it is necessary to add an explanation of algebraic calculation operations (algebraic addition, division, multiplication, and division operations).
Design validator	<ul style="list-style-type: none"> • on the front cover, it is necessary to add image elements related to the "encyclopedia". • In the content of the encyclopedia, tables,

	<p>pictures, or graphs need to be reproduced.</p> <ul style="list-style-type: none"> the font size for Arabic writing must be larger than for Indonesian writing.
Integration validator	<ul style="list-style-type: none"> QS. Ali Imran verse 130 which contains the material "social arithmetic" needs to be replaced with QS. Yusuf verse 20, because it has more relevance to social arithmetic Furthermore, the verse written about the material "linear equation of one variable" is QS. ar-Ra'du verse 16 needs to be changed to QS. al-Mujadilah verse 7, QS. ash-Shaffat verse 147, al-Muzammil verse 20, and QS. an-Nisa' verse 11-12. The validator suggested that the researcher should ensure that the numbers mentioned were not ordinal numbers or expressed levels. This is because not all numbers found in the Qur'an are numbers.
Language Validator	<ul style="list-style-type: none"> The validator advised the researcher to correct in detail the use of italicized words, capital letters, and punctuation marks. The diction used should make it easier for students to understand the sentences.

all comments and suggestions given by the validators to make revisions to the developed math encyclopedia. Furthermore, all the values obtained from the validators were calculated by the formula determined in the research method to determine the validity of the product, more details can be seen in table 8.

Table 8. Recapitulation of Expert Validation

Validation Aspect	Questionnaire Score	Information
Material	81,25%	Valid
Design	85,41%	Very Valid
Religion	84,29%	Valid
Language	85,48%	Very Valid
Rata-rata	84,10%	Valid

From the average assessment from the validators in Table 8, the final score was 84.10%, so it can be said that the mathematics encyclopedia in the Qur'an is in the valid or suitable category for use. The validity results obtained by researchers are the same as the validation procedures carried out by Cahya (2020) the validity value is 98.67% which is obtained based on a questionnaire given to expert validators.

Furthermore, the practicality of this encyclopedia is based on the assessment of practitioners or mathematics teachers and students at the Islamic Junior High School level. The practitioners involved in this practicality assessment were three mathematics teachers at Islamic Junior High School Nurul Huda, Ngajum District, Malang Regency. The practitioners came from 7th, 8th, and 9th grade math teachers. The scores of the three practitioners are presented in the following table.

Table 9. Recapitulation of Assessments From Mathematics Teacher

Practitioner Name	Total score	Maximum Score	Questionnaire Score	Information
MR	30	32	93,75%	Very High
EA	24	32	75,00%	High
MAR	27	32	84,37%	High
Average			84,37%	High

The students involved in the encyclopedia practicality assessment are three students at Nurul Huda Junior High School consisting of a student from grade 7, a student from grade 8, and a student from grade 9. The scores of the three students are presented in the following table.

Table 10. Recapitulation of Assessments From Students

Students Name	Total score	Maximum Score	Questionnaire Score	Information
ARF	27	32	84,37%	High
ACP	29	32	90,62%	Very High
MAE	26	32	81,25%	High
Average			85,41%	Very High

Based on tables 9 and 10, the practicality score from teachers is 84.37% and from students, it is 85.41%. This value is obtained from assessments which

include the content components of the material in the encyclopedia and the attractiveness of the presentation of the material. So it can be said that the mathematics encyclopedia in the Qur'an is in the practical category. This practical result is in line with Lestari (2018) title development of a flat building encyclopedia for 5th grade students.

4. Description of The Disseminate Stage

The author carries out the dissemination stage by registering the product on Intellectual Property Rights (HaKI). This is done to avoid unwanted things, such as plagiarism. After that, this encyclopedia will be published as a book with ISBN. Efforts made by researchers are collaborating with one of the book publishers. After being published as a book, several copies will be donated to libraries, especially the central library of UIN Maulana Malik Ibrahim Malang.

CONCLUSION

Based on the presentation of the results and discussion, it can be concluded that the Encyclopedia of Mathematics in the Qur'an has been proven to be valid and feasible. The validity aspect based on expert assessment shows that the Encyclopedia developed is in the very valid category. The practical aspect based on the assessment of the mathematics teacher is high. The result of the development is a valid and practical Encyclopedia product of mathematics in the Qur'an so that it can be used as a reference source for students regarding integrative mathematics material at the Islamic Junior High School level.

Suggestions for further research are to continue by measuring the effect of using this Encyclopedia to improve students' mathematical literacy skills and religious values. Future researchers can also develop an Encyclopedia of mathematics in the Qur'an at a different level, namely for Islamic Senior High School.

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REFERENCES

- Adi Widana, I. N., Juliawan, I. N., Suardika Jaya, M., & Juliana, I. W. (2022). Pengembangan media pembelajaran interaktif berbasis adobe flash professional CS6 Pada program studi sastra agama dan pendidikan bahasa bali STAHN Mpu Kuturan Singaraja. *Cetta: Jurnal Ilmu Pendidikan*, 5(1), 30–42. <https://doi.org/10.37329/cetta.v5i1.1443>.
- Amir, U. S., Nari, N., & Huda, U. (2020). Pengembangan LKPD SPLTV terintegrasi islam dan budaya minangkabau di SMA/MA. *Proceeding IAIN Batusangkar*, 1(3), 267–280. Retrieved from <https://ojs.iainbatusangkar.ac.id/ojs/index.php/proceedings/article/view/2190>.
- Arifin, S., & K., A. (2009). *Sukses menulis buku ajar & referensi*. Jakarta: PT. Grasindo.
- Asmarawati, E., Riyadi, R., & Sujadi, I. (2016). Proses integrasi sikap sosial dan spiritual dalam pembelajaran matematika pada siswa kelas VII SMP Negeri di kecamatan Purwodadi. *Jurnal Pembelajaran Matematika*, 4(1). Retrieved from <https://jurnal.fkip.uns.ac.id/index.php/s2math/article/view/8014>.
- Bahri, S. (2021). Membumikan pendidikan nilai menghasilkan akhlakul karimah. *Al-Madaris Jurnal Pendidikan Dan Studi Keislaman*, 1(1), 57–63. <https://doi.org/10.47887/amd.v1i1.4>.
- Cahya, S. N. (2020). *Pengembangan media matiklopedia (matematika ensiklopedia) dengan pendekatan saintifik mata pelajaran matematika pada materi bangun datar siswa kelas III SDN 106158 Pematang Johar*. (Doctoral dissertation, UNIMED). Retrieved from <http://digilib.unimed.ac.id/id/eprint/40463>.
- Damayanti, E., Putra, R. W. Y., Farida, F., & Ambarwati, R. (2021). Pengembangan multimedia interaktif menggunakan adobe flash profesional CS6 berbasis RME bernuansa islami pada materi lingkaran SMP. *Prosiding Seminar Nasional Matematika Dan Pendidikan Matematika*, 4(1), 17–25. Retrieved from <https://proceedings.radenintan.ac.id/index.php/pspm/article/view/80>.
- Erdawati, S. (2018). Pengembangan ensiklopedia IPA berbasis integrasi islam sains untuk meningkatkan motivasi siswa kelas IV SD Negeri 003 Enok Kecamatan Enok. *Al-Aulia: Jurnal Pendidikan Dan Ilmu-Ilmu Keislaman*, 4(1), 40–57. Retrieved from <https://ejournal.stai-tbh.ac.id/al-aulia/article/view/srierda>.

- Fathani, A. H. (2019). Pembelajaran matematika bagi santri pondok pesantren berbasis kecerdasan majemuk. *ANARGYA: Jurnal Ilmiah Pendidikan Matematika*, 2(1), 46–53. Retrieved from <https://jurnal.umk.ac.id/index.php/anargya/article/view/3043>.
- Fitriza, R., Putra, M. S., & Samad, D. (2020). Pengembangan lembar kerja peserta didik berwawasan Al-Qur'an dan budaya Minangkabau dalam pembelajaran matematika kelas X. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 9(4), 1159–1171.
- Hamzah, A. (2021). *Metode penelitian & pengembangan (research & development) uji produk kuantitatif dan kualitatif proses dan hasil dilengkapi contoh proposal pengembangan desain uji kualitatif dan kuantitatif*. Malang: CV Literasi Nusantara Abadi.
- Hartoyo, A., Nursangaji, A., & Suratman, D. (2019). Pengembangan kompetensi sikap dalam pembelajaran matematika secara holistik bersumber Qur'an. *Jurnal Pendidikan Matematika Dan IPA*, 10(1), 149. <https://doi.org/10.26418/jpmipa.v10i1.30033>.
- Ihsan, M. (2019). Pengembangan bahan ajar matematika realistik berbasis Alquran pokok bahasan pecahan. *Suska Journal of Mathematics Education*, 5(1), 39–46. Retrieved from <http://ejournal.uin-suska.ac.id/index.php/SJME/article/view/6824>.
- Ikhsan, M. (2020). *Pengembangan media pembelajaran matematika berbasis videoscope pada materi baris dan deret secara daring saat social distancing di kelas XI MAN 4 Medan*. Universitas Islam Negeri Sumatera Utara.
- Irawan, A., & Hakim, M. A. R. (2021). Kepraktisan media pembelajaran komik matematika pada materi himpunan kelas VII SMP/MTs. *Pythagoras: Jurnal Program Studi Pendidikan Matematika*, 10(1), 91–100. <https://doi.org/10.33373/pythagoras.v10i1.2934>.
- Kurniasih, W. (2016). Implementasi integrasi agama dan sains dalam pembelajaran matematika di sekolah dasar Islam Terpadu Harapan Umat Brebes. *Jurnal Dialektika Program Studi Pendidikan Matematika*, 3(2), 20–29.
- Laily, A. (2021). *Pengembangan media pembelajaran corong berhitung terhadap hasil belajar matematika peserta didik kelas II SD/MI*. (Doctoral dissertation, UIN Raden Intan Lampung).
- Lestari, L. (2018). *Pengembangan Ensiklopedia pada Materi Bangun Ruang Kelas V SD/MI*. (Doctoral dissertation, UIN Raden Intan Lampung).

- Maarif, S. (2021). Pengembangan bahan ajar matematika berbasis konteks dunia islam pada materi aljabar siswa SMP IT/MTS Kelas VII. *Jurnal Pengembangan Pembelajaran Matematika (JPPM)*, 3(2), 101-111. Retrieved from <https://ejournal.uin-suka.ac.id/tarbiyah/jppm/article/view/032.101-111>.
- Magdalena, I., Islami, N. F., Rasid, E. A., & Diasty, N. T. (2020). Tiga ranah taksonomi bloom dalam pendidikan. *EDISI: Jurnal Edukasi Dan Sains*, 2(1), 132-139.
- Mahmudah, I. (2022). Integration of islamic values in mathematics learning in class IV students of madrasah ibtidaiyah. *Al-Madrasah: Jurnal Ilmiah Pendidikan Madrasah Ibtidaiyah*, 6(4), 1075-1087. <https://doi.org/10.35931/am.v6i4>.
- Malasari, P. N., Atikoh, A., Kamilia, U., & Na'im, C. (2022). Pendampingan belajar bernuansa islami melalui bimbingan belajar matematika di desa Ruwit Wedung Demak. *ABDIKARYA: Jurnal Pengabdian Dan Pemberdayaan Masyarakat*, 4(1), 11-20.
- Muzakki, A. ., Yuniasih, N. ., & Sakdiyah, S. H. (2020). Pengembangan ensiklopedia berbasis integrasi islam pada pembelajaran tematik materi lingkunganku kelas V MI darunnajah bakalan kabupaten Pasuruan. *Prosiding Seminar Nasional PGSD UNIKAMA*, 4, 542-549.
- Nirmalasari. (2019). *Pengembangan modul matematika berbasis islam pada materi himpunan kelas X SMA pesantren modern Datok Sulaiman (PMDS)*. (Doctoral dissertation, IAIN Palopo).
- Noor, T. (2018). Rumusan tujuan pendidikan nasional pasal 3 undang-undang sistem pendidikan nasional no 20 tahun 2013 melalui pendekatan nilai-nilai yang terkandung dalam ayat 30 surah ar-ruum dan ayat 172 surah al-'araaf. *Wahana Karya Ilmiah Pendidikan*, 3(01), 123-144. Retrieved from <https://journal.unsika.ac.id/index.php/pendidikan/article/view/1347>.
- Nugroho, W. (2021). Kesadaran siswa terhadap nilai-nilai karakter dalam pembelajaran virtual trigonometri. *Jurnal Pendidikan Karakter*, 12(2), 221-236.
- Pratiwi, R. D. (2015). *Pengembangan ensiklopedia bangun datar untuk meningkatkan hasil belajar siswa kelas V MI Irsyadut Tholibin*. (Doctoral dissertation, Universitas Islam Negeri Maulana Malik Malang).
- Puspasari, R. (2019). Pengembangan buku ajar kompilasi teori graf dengan

- model ADDIE. *Journal of Medives: Journal of Mathematics Education IKIP Veteran Semarang*, 3(1), 137. <https://doi.org/10.31331/medivesveteran.v3i1.702>.
- Rahmadhani, E., & Wahyuni, S. (2020). Integrasi pembelajaran matematika berbasis ICARE dan islam pada materi pecahan. *JNPM (Jurnal Nasional Pendidikan Matematika)*, 4(1), 110. <https://doi.org/10.33603/jnpm.v4i1.2874>.
- Rahmawati, S., Haryadi, S., & Yaumilia, T. A. (2020). Pengembangan lembar kerja siswa pada pembelajaran matematika berbasis kearifan lokal kodus. *Jurnal Analisis Ilmu Pendidikan Dasar*, 2(1), 28–33. Retrieved from <https://ejr.umku.ac.id/index.php/jaip/article/view/1372>.
- Riana, R., & Ibrahim, M. (2022). Desiminasi: Pelatihan penyusunan lembar kerja siswa berbasis matematika terintegrasi bagi guru SMP. *JMM (Jurnal Masyarakat Mandiri)*, 6(1), 771–779. Retrieved from <http://journal.ummat.ac.id/index.php/jmm/article/view/6680>.
- Rochimah, N. (2018). *Pengembangan bahan ajar berbasis ensiklopedia pada tema perkembangbiakan hewan dan tumbuhan subtema perkembangbiakan dan daur hidup hewan untuk meningkatkan pemahaman siswa kelas 3 di MI at Taqwa 01 Maarif NU Lamongan*. (Doctoral dissertation, Universitas Islam Negeri Maulana Malik Ibrahim Malang).
- Romli, A. A., Sesanti, N. R., & Triwahyuningtyas, D. (2020). Pengembangan ensiklopedia bangun ruang berbasis etnomatematika untuk siswa kelas V SDN 1 Tawangrejeni Seminar Nasional PGSD UNIKAMA. *Seminar Nasional PGSD UNIKAMA*, 4, 531–536.
- Safitri, W. Y., Haryanto, H., & Rofiki, I. (2020). Integrasi matematika, nilai-nilai keislaman, dan teknologi: Fenomena di madrasah tsanawiyah. *Jurnal Tadris Matematika*, 3(1), 89–104. Retrieved from <https://ejournal.uinsatu.ac.id/index.php/jtm/article/view/3035>.
- Susrizal, S. (2017). Islamic education teachers' efforts in developing students' spiritual potential in learning (a study at SMP N 29 Padang). *Ta'dib*, 20(2), 167. <https://doi.org/10.31958/jt.v20i2.716>.
- Syafitri, Y., Huda, U., & Herlina, E. (2019). Pengembangan media interaktif berbasis integrasi matematika islam pada materi himpunan kelas VII di SMP Negeri 2 Batipuh. *Proceeding IAIN Batusangkar*, 3(2), 104–112.
- Syamsuar, S., Sulasteri, S., Suharti, S., & Nur, F. (2021). Bahan ajar matematika

terintegrasi islam untuk meningkatkan religiusitas dan hasil belajar siswa. *Suska Journal of Mathematics Education*, 7(1), 13. <https://doi.org/10.24014/sjme.v7i1.10827>.

Ulita, N., Sari, Y., & Hariyono, M. (2020). Pengaruh bahan ajar konsep dasar matematika berbasis internalisasi nilai-nilai islam terhadap sikap religius. *Jurnal Studi Guru Dan Pembelajaran*, 3(1), 1-10. Retrieved from <https://ejournal.my.id/jsgp/article/view/154>.

Widiyawati, E., Muhammad, D. H., (2023). Pengembangan kecerdasan spiritual (SQ) melalui pembelajaran pendidikan agama islam di SMP Nurul Islam Kota Probolinggo. *Al-Afkar: Journal for Islamic Studies*, 6(1), 393-404. <https://doi.org/10.31943/afkarjournal.v6i1.584>.

Yuliani, W., Hartoyo, A., & Nursangaji, A. (2020). Implementasi bahan ajar persamaan garis lurus berintegrasi al-quran pada siswa kelas VIII SMP Punggur. *Jurnal Pendidikan Dan Pembelajaran Khatulistiwa*, 10(5), 1-11. Retrieved from <https://jurnal.untan.ac.id/index.php/jpdpb/article/view/46840>.

Yuniati, S., & Sari, A. (2018). Pengembangan modul matematika terintegrasi nilai-nilai keislaman melalui pendekatan realistic mathematics education (RME) di Provinsi Riau. *Jurnal Analisa*, 4(1), 157-165.

Zhafirah, E., & Aisiah. (2019). Pengembangan ensiklopedia kerajaan-kerajaan hindu-budha di nusantara sebagai sumber belajar di SMA. *Jurnal Halaqah*, 1(4), 469-484. <https://doi.org/10.5281/zenodo.3526769>.