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Development of a mathematics microteaching textbook integrating Islamic values and local wisdom oriented toward Ulul Albab

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Abstract

Existing microteaching textbooks focus on teaching skills, but examples of mathematics learning tools aligned with the Merdeka Curriculum, along with content on Islamic values and local wisdom, are still unavailable to prospective mathematics teachers. This study aims (1) to describe the development process of a mathematics microteaching textbook that integrates Islamic values and local wisdom oriented toward *Ulul Albab* character, and (2) to determine its validity and practicality. This research and development study employed the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). Participants included four expert validators (content, instruction, design, and Islamic and cultural integration), 35 students in the Mathematics Education study program who were taking or had taken the Basic Teaching Skills course, and one course lecturer. Data were collected through expert validation sheets and practicality questionnaires and analyzed descriptively and quantitatively as percentages. Expert validation yielded a mean validity of 93.80%, placing all aspects in the valid category. A small-scale trial was conducted with prospective mathematics teachers and the lecturer of the Basic Teaching Skills course. The questionnaires showed a practicality of 80% according to the students (practical) and 77.92% according to the lecturer (fairly practical). The textbook is designed to facilitate integrating Islamic values and local wisdom into teaching simulation activities. Its effectiveness on *Ulul Albab* character and teaching competence has not yet been tested and should be examined in future research. Thus, the textbook is valid and practical for use in the Basic Teaching Skills course.

Keywords: Textbook, Microteaching, Local Wisdom, *Ulul Albab*, Prospective Mathematics Teachers

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INTRODUCTION

Microteaching plays an important role in preparing prospective teachers to face the complexity of classroom learning. Through microteaching, prospective teachers practice teaching skills, receive feedback, and reflect on their practice before teaching in real classrooms (Iliasova et al., 2025; Vígh, 2024). Teacher education programs need to design learning that provides constructive feedback (Kurniawati et al., 2025), for example, through video-based evaluation, self-evaluation, and peer evaluation (Shirasaka & Imagawa, 2026). Such feedback fosters observation and reasoning skills (Franke et al., 2024), supports reflective practice (Asregid et al., 2023), and improves lesson-planning quality (Aitenova, 2025; Cavanagh et al., 2025). The skills practiced include lesson delivery, classroom management, communication, and teacher–student interaction (Iliasova et al., 2025; Rahma et al., 2024), beginning with preparing lesson plans based on instructional syntax and strategies (Erhan et al., 2024; Sulistyawati & Radite, 2024).

In addition to teaching skills, prospective teachers need to be equipped with *Ulul Albab* character, which encompasses spiritual depth, noble morals, breadth of knowledge, and professional maturity (Fitri et al., 2025). This character rests on three pillars, namely *dhikr*, *fikr*, and *amal*, which form a framework for developing prospective teachers with integrity (Basiroh et al., 2025; Wijaya, 2023). *Dhikr* represents spiritual capacity and moral awareness as an educator, *fikr* reflects scholarly mastery and pedagogical innovation, and *amal* embodies both in social responsibility. In this study, the three pillars were used as design principles for the textbook. *Dhikr* is realized through opening and closing lessons that evoke spiritual enthusiasm and relate the material to the greatness of the Creator. *Fikr* is realized through strengthening pedagogical competence and conceptual mastery, for example, by linking explanatory skills to hadith. *Amal* is realized through meaningful teaching simulations set in local cultural contexts. The three pillars of Ulul Albab provide an interpretive framework for examining how character-related values are integrated into the textbook. *Dhikr* is represented through selected spiritual practices and religious contexts, *fikr* through discussions of pedagogical competencies and mathematical reasoning, and *amal* through examples of lesson planning and instructional applications. These dimensions are not necessarily found in the same order in each of the teaching skills but are seen in various aspects of the textbook. Their integration is thus a textbook design in character, not an empirically

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tested model of character development.

Integrating Islamic values and local wisdom into teaching skills practice can strengthen Ulul Albab character (Hasnah et al., 2023; Mutijah, 2018). Integrating local wisdom connects morality, character, and culture in mathematics learning and helps prospective teachers relate mathematical concepts to students' experiences and culture (Nuraini, 2019; Paiza et al., 2022). Therefore, teaching materials with an *Ulul Albab* integration approach are needed (Sarkowi, 2024).

Integrating local wisdom and Islamic values complements each other. Local wisdom provides a context that connects mathematical concepts with real experiences, while Islamic values serve as the foundation for designing and implementing learning. Local culture, such as the traditional game *Dam-daman*, can be used as a context in mathematics learning (Rahmanto, 2022). This game embodies sportsmanship, cooperation, and patience (Ainin et al., 2025). In the microteaching textbook, these cultural contexts and values serve as materials for prospective teachers to design and simulate lessons, so that integration becomes a teaching practice experience.

A review of several microteaching textbooks shows that the existing literature remains fragmented. General microteaching textbooks such as Halder and Saha (2023) treat teaching skills as generic, cross-disciplinary competencies and do not address how mathematical concepts are explained, represented, or contextualized. Mathematics-specific microteaching books by Hariastuti and Yohannes (2023) and Netriwati (2018) address the subject's specific needs but treat teaching skills merely as pedagogical competencies. Netriwati (2018) is not yet aligned with the *Merdeka* Curriculum, whereas Hariastuti and Yohannes (2023) update the curricular framework but do not discuss Islamic values and culture in teaching. Conversely, studies on the integration of Islamic values in Hikmah and Haqiqi (2021) and Mulya and Faradiba (2025), and local culture or ethnomathematics in Annisa et al. (2023), Harefa (2025), and Serepinah et al. (2023), produce teaching materials or learning models for students as learners of mathematics, rather than learning resources that train prospective teachers to teach with these values and contexts. As a result, teaching skills, local cultural contexts, and Islamic values have developed as separate strands, leaving prospective teachers to combine them on their own, which can be confusing when integrating them into instruction. The distinctive contribution of this textbook lies in integrating these three strands within a single

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microteaching framework: basic teaching skills serve as the organizing unit; Islamic values are instilled through the *dhikr*, *fikr*, and *amal* cycle; and local cultural contexts serve as the mathematical situations in which prospective teachers design and simulate instruction aligned with the *Merdeka* Curriculum.

Observations in the Mathematics Education study program at UIN Maulana Malik Ibrahim Malang showed that the Faculty's textbook is used by all study programs, so its examples are general and do not include mathematics learning tools aligned with the *Merdeka* Curriculum. Interviews also showed that students had difficulty obtaining microteaching reading materials containing examples of mathematics lesson plans. Thus, there are three gaps: (1) a product gap, namely the absence of a *Merdeka* Curriculum-based mathematics microteaching book integrating Islamic values and local wisdom; (2) a practice gap, namely the lack of materials for students to practice teaching contextually and with *Ulul Albab* character; and (3) a theoretical gap, namely the absence of a framework that translates *dhikr*, *fikr*, *amal*, and local wisdom into microteaching activities. Previous books and the Faculty guidebook served as the basis for developing the textbook; the structure of basic teaching skills was retained and then enriched with Islamic values, local cultural contexts, and examples of mathematics learning.

To address these gaps, the study developed a microteaching textbook for prospective mathematics teachers that integrates Islamic values and local wisdom. The textbook contains examples of contextual lesson designs and Islamic values, so that prospective teachers gain knowledge in designing and simulating contextual learning that is directed toward developing *Ulul Albab* character. This study aims (1) to describe the development process of a mathematics microteaching textbook that integrates Islamic values and local wisdom oriented toward *Ulul Albab* character, and (2) to determine the validity and practicality of the microteaching textbook.

METHODS

Type of Research

This study is research and development (R&D) using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The ADDIE model was chosen because it provides systematic, sequential stages with revision activities at each stage, making it suitable for developing a textbook. These characteristics fit the problem this

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study addresses: the lack of a mathematics microteaching textbook that integrates Islamic values and local wisdom. The analysis stage ensures that the product is grounded in students' needs. The design and development stages explicitly design the concepts of dhikr, fikr, amal, and local wisdom before expert validation. In contrast, the implementation and evaluation stages generate practical data to revise the product. The model consists of five stages. The first stage, Analysis, is a needs analysis of the product to be developed. The second stage, Design, involves planning the product's model and content. The third stage, Development, involves developing the product and conducting expert validation. The fourth stage, Implementation, is a small-scale trial to assess the product's practicality. The fifth stage, Evaluation, involves interpreting and evaluating the development and trial results. This study did not test effectiveness in *Ulul Albab* character or teaching competence.

Research Subject

The research participants included four expert validators, 35 students in the Mathematics Education study program at UIN Maulana Malik Ibrahim Malang, and one lecturer of the Basic Teaching Skills course. All four validators were lecturers with at least a master's degree in mathematics education and at least three years of experience, selected based on the match between their expertise and the aspect they validated: content, instruction, design, and Islamic and cultural integration. The content validator is a mathematics education lecturer who teaches mathematics content courses. The instructional validator was a Mathematics Education lecturer with experience teaching Mathematics Microteaching and Mathematics Learning Strategies. The design validator was a lecturer specializing in mathematics learning resources and instructional media, with over five years of teaching experience and active experience designing instructional materials, such as textbooks. The Islamic and cultural integration validator was a lecturer with expertise in integrating Islamic values into an educational context, specifically the Islamic perspective in mathematics learning.

The students were selected purposively from the Basic Teaching Skills course classes, namely fifth-semester students in the 2024/2025 academic year who had practiced peer teaching (microteaching) and participated voluntarily. The students and the course lecturer participated in the textbook's practicality testing.

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Instruments and Data Collection Techniques

Two types of instruments were used in this study: expert validation sheets and practicality questionnaires. The expert validation sheets included four versions: subject matter, instructional, design, and Islamic values and cultural integration. The practicality questionnaire was administered to students and the course lecturer involved in the trial to assess the textbook's practicality in three aspects: format, content, and language. Both the expert validation sheets and the practicality questionnaire used a four-point scale (Table 1).

The expert validation sheets were developed based on textbook feasibility indicators adapted from the textbook assessment components of the National Education Standards Agency (*Badan Standar Nasional Pendidikan*, BSNP), namely content, presentation, language, and graphics, and adjusted to the characteristics of a microteaching textbook integrating Islamic values and local wisdom. The subject matter validation sheet comprised two components: content (10 items) and construction (11 items). The instructional validation sheet consisted of 8 items. The design validation sheet covered presentation techniques (5 items) and presentation feasibility (5 items). The Islamic values and cultural integration validation sheet consisted of 10 items. The practicality questionnaire covered format (5 items), content (5 items), and language (4 items). The indicators for each dimension were as follows: content covered the accuracy of mathematical concepts, alignment with learning outcomes, and the relevance of examples; construction covered the systematic organization of materials, clarity of instructions, and coherence between chapters; the instructional aspect covered alignment of the basic teaching skills and lesson designs with the *Merdeka* Curriculum; presentation techniques and presentation feasibility covered layout, illustrations, typography, and readability; and Islamic values and cultural integration covered the accuracy of Qur'anic and hadith references, the relevance of the values to the material, and the appropriateness of the local cultural contexts. The practicality indicators covered ease of use and attractiveness of the format, the usefulness of the content for practicing teaching skills, and the clarity and communicativeness of the language.

Both instruments were validated by an educational expert who assessed the alignment between indicators and items as well as the clarity of the wording. The content validity procedure consisted of three steps: (1) drafting an instrument grid that mapped

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each dimension to its indicators and items; (2) having the expert rate the instrument on a four-point scale, both through a general assessment of the instrument (clarity of instructions, construction, and language) and through a rating of the relevance of each item to its indicator; and (3) revising the items based on the ratings and suggestions. The validation covered a general assessment and the relevance of each item. The general assessment yielded a score of 79.79%, while the relevance of each item reached 72.50%. Both scores were calculated using Formula (1), namely the total score obtained divided by the maximum possible score and multiplied by 100%, and were interpreted using the criteria in Table 2. Both values fall within the range of 60% ≤ x < 80%, which corresponds to the fairly valid category; therefore, minor revisions to the item wording were made before the instruments were used. The instruments were not pilot-tested on a separate group of respondents, and their reliability was not statistically assessed; their quality was established only through expert content validation by a single validator. This is acknowledged as a study limitation.

Data collection techniques included expert validation and questionnaires. Expert validation assessed the textbook's validity, while the questionnaire assessed its practicality for learning. The practicality questionnaire was administered to students and the lecturer of the Basic Teaching Skills course. The small-scale trial focused on the book's readability and usability for its direct users.

Data Analysis

The scores from the expert validation sheets and the practicality questionnaires were based on the scoring guidelines presented in Table 1.

Table 1. Scoring Guidelines for Expert Validation and Practicality Questionnaires

Score	Response Rating
4	Very good
3	Good
2	Poor
1	Very poor

We determined the feasibility of each aspect using Formula (1), based on expert validation and practicality data.

$$x_i = \frac{\sum S}{S_{max}} \times 100\% \quad (1)$$

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where S_{max} is the maximum score, $\sum S$ is the total score, and x_i is the percentage for each item.

The average percentage of all respondents was calculated using Formula (2).

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n} \quad (2)$$

where $\bar{x}$ is the final average, x_i is the validity or practicality score of each instrument, and n is the number of respondents.

The percentages obtained were then interpreted to determine validity and practicality based on Table 2.

Table 2. Interpretation Criteria for Validity/Practicality

Percentage	Qualification	Remarks
$80\% \leq \bar{x} \leq 100\%$	Valid / Practical	No revision needed
$60\% \leq \bar{x} < 80\%$	Fairly Valid / Practical	No revision needed
$50\% \leq \bar{x} < 60\%$	Less Valid / Practical	Revision
$< 50\%$	Not Valid / Practical	Revision

Data were analyzed descriptively and quantitatively. The mean score of each validation sheet was divided by the maximum score (4) and expressed as a percentage using Formula (1); for example, a mean score of 3.86 corresponds to 96.43%. The four validators' percentages were averaged using Formula (2), while overall practicality was the mean of the three questionnaire aspects (format, content, and language). Based on Table 2, the textbook was declared valid and practical if it obtained at least 80%, and a percentage below 60% required revision.

RESULT AND DISCUSSION

Analysis stage

The researchers observed fifth-semester students in the Mathematics Education study program at UIN Maulana Malik Ibrahim Malang in the 2024/2025 academic year. Interviews with several students revealed that they had difficulty obtaining microteaching reading materials specific to mathematics learning. The textbook provided by the Faculty of Tarbiyah and Teacher Training did not include examples specific to mathematics learning. The examples in the book, particularly the teaching modules, still used the 2013 Curriculum. This analysis revealed three needs underlying the textbook's development. First, the need for a microteaching book specifically for mathematics learning, so the book was compiled with examples specific to mathematics learning.

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Second, the need for examples of learning tools, particularly teaching modules, aligned with the *Merdeka* Curriculum, so the textbook includes examples of tools aligned with that curriculum. Third, the institutional need to equip prospective teachers with *Ulul Albab* character, so the textbook includes a chapter on Islamic and cultural integration and embeds these values in each teaching skill. The textbook components developed to address these three needs are described in the design and development stages.

Design stage

The researchers determined the learning outcomes and study materials, compiled the content, planned the design, prepared supporting applications, and developed the validation instruments and practicality questionnaire. The learning outcomes were determined by reviewing the course learning outcomes (LO) of the Basic Teaching Skills course in the Mathematics Education study program. Based on these LOs, the researchers added two new LOs related to Islamic and cultural integration: (1) students can analyze examples of applying culture in mathematics learning; and (2) students can analyze examples of applying Islamic integration in mathematics learning. For the study materials, the researchers used the Faculty of Tarbiyah and Teacher Training's existing microteaching guidebook, along with other supporting reading materials. Based on the collected reading materials, the researchers determined that the study materials aligned with the LO. The content was then compiled.

The content was compiled from sources such as e-books, scholarly articles, and other supporting sources. The researchers designed the textbook based on the selected study materials and the compiled content. The textbook consists of three parts. The introductory part contains the cover and table of contents. The main part contains (1) Basic Concepts of Microteaching, (2) Basic Teaching Skills, and (3) Applications of Culture and Islamic Integration in Mathematics Learning. The closing part contains the references, author profiles, and back cover. After the content was compiled, supporting applications for producing the textbook, such as Canva and GeoGebra, were prepared. In addition, the validation instruments and practicality questionnaire were developed.

The design for integrating Islamic values and local wisdom was developed by mapping the three pillars of *Ulul Albab* onto activities in each basic teaching skill. The *dhikr* pillar was designed through activities that foster prospective teachers' spiritual awareness and moral responsibility, for example, spiritually oriented lesson openings

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and closings and relating mathematical material to the greatness of the Creator. The *fikr* pillar was designed to strengthen pedagogical competence and conceptual mastery, for example, by discussing and explaining skills in connection with hadith. The *amal* pillar was designed through teaching simulations that connect mathematical concepts with local cultural contexts, so that prospective teachers practice meaningful, character-based learning.

The alignment between the needs identified in the analysis stage and the textbook components produced in the design and development stages is as follows. First, the need for a microteaching book specific to mathematics learning was addressed in the design stage by selecting study materials and compiling content focused on mathematics learning, and in the development stage by presenting each basic teaching skill in Chapter 2 with mathematics examples, such as the discussion of explaining skills based on Figure 2 and student worksheet activities on angles based on Figure 3. Second, the need for examples of learning tools aligned with the *Merdeka* Curriculum was addressed in the design stage by compiling content on lesson planning based on the *Merdeka* Curriculum, and in the development stage by including examples of teaching modules and student worksheet activities that follow the *Merdeka* Curriculum format, replacing the 2013 Curriculum examples found in the Faculty guidebook. Third, the institutional need to equip prospective teachers with *Ulul Albab* character was addressed in the design stage by adding two new LO on cultural and Islamic integration and by mapping the *dhikr*, *fikr*, and *amal* pillars onto each basic teaching skill, and in the development stage by producing Chapter 3 on Applications of Culture and Islamic Integration in Mathematics Learning, whose introductory page states these two LO in Figure 1, linking explaining skills to hadith in Figure 2, using the *Dam-daman* game as a cultural context in Figure 3, and connecting the concept of sets with QS An-Nur verse 45 in Figure 4. In this way, every requirement from the analysis stage is traceable to specific design decisions and concrete textbook components.

Development stage

The researchers produced the designed product. For the introductory part, the researchers designed a cover representing the book's title and content. This part also includes the table of contents, preface, and an introductory page for each chapter. The introductory page of each chapter contains the LO related to the material. Figure 1 shows

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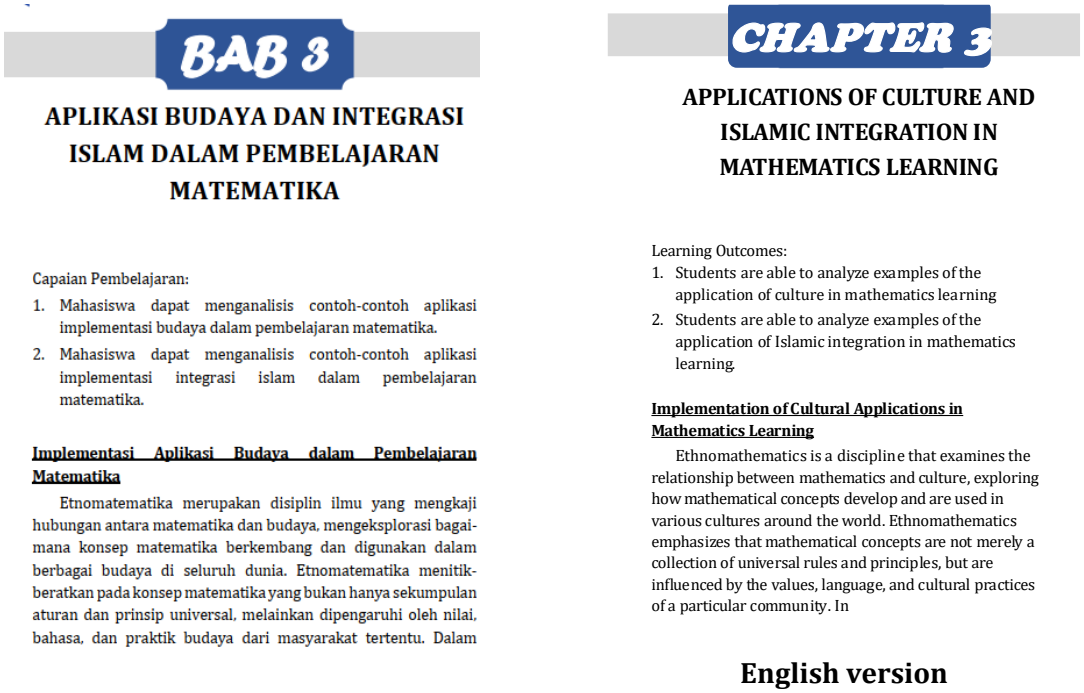
Chapter 3, Applications of Culture and Islamic Integration in Mathematics Learning, which includes two LOs related to Islamic and cultural integration.



BAB 3

APLIKASI BUDAYA DAN INTEGRASI ISLAM DALAM PEMBELAJARAN MATEMATIKA

Capaian Pembelajaran:

1. Mahasiswa dapat menganalisis contoh-contoh aplikasi implementasi budaya dalam pembelajaran matematika.
2. Mahasiswa dapat menganalisis contoh-contoh aplikasi implementasi integrasi islam dalam pembelajaran matematika.

Implementasi Aplikasi Budaya dalam Pembelajaran Matematika

Etnomatematika merupakan disiplin ilmu yang mengkaji hubungan antara matematika dan budaya, mengeksplorasi bagaimana konsep matematika berkembang dan digunakan dalam berbagai budaya di seluruh dunia. Etnomatematika menitikberatkan pada konsep matematika yang bukan hanya sekumpulan aturan dan prinsip universal, melainkan dipengaruhi oleh nilai, bahasa, dan praktik budaya dari masyarakat tertentu. Dalam

CHAPTER 3

APPLICATIONS OF CULTURE AND ISLAMIC INTEGRATION IN MATHEMATICS LEARNING

Learning Outcomes:

1. Students are able to analyze examples of the application of culture in mathematics learning
2. Students are able to analyze examples of the application of Islamic integration in mathematics learning.

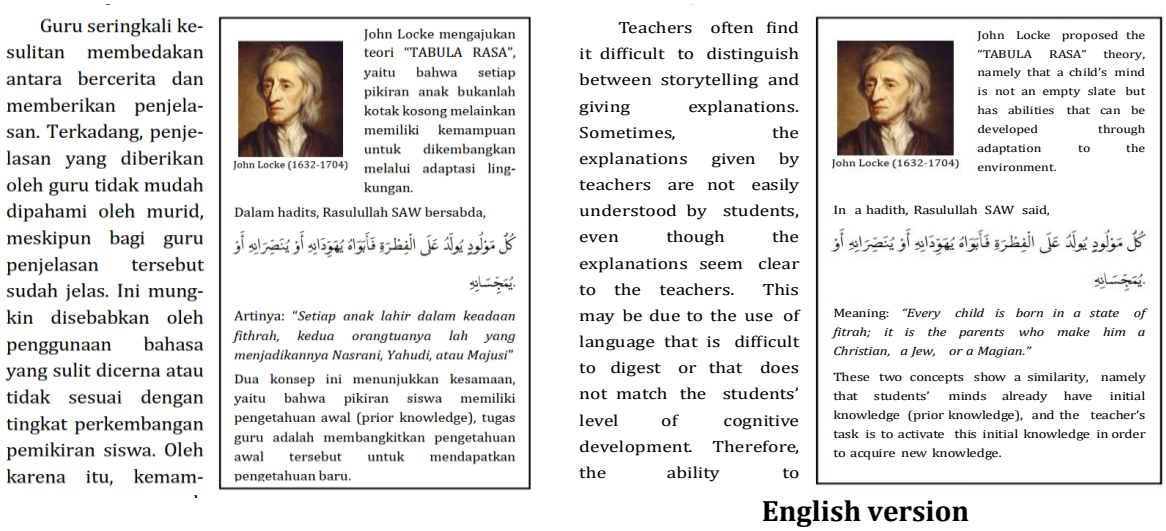
Implementation of Cultural Applications in Mathematics Learning

Ethnomathematics is a discipline that examines the relationship between mathematics and culture, exploring how mathematical concepts develop and are used in various cultures around the world. Ethnomathematics emphasizes that mathematical concepts are not merely a collection of universal rules and principles, but are influenced by the values, language, and cultural practices of a particular community. In

English version

Figure 1. Chapter 3: Applications of Culture and Islamic Integration in Mathematics Learning

Chapter 2 contains basic teaching skills that integrate Islamic values oriented toward *Ulul Albab* character. Figure 2 shows an example of a discussion of explaining skills oriented toward *Ulul Albab*.



Guru seringkali kesulitan membedakan antara bercerita dan memberikan penjelasan. Terkadang, penjelasan yang diberikan oleh guru tidak mudah dipahami oleh murid, meskipun bagi guru penjelasan tersebut sudah jelas. Ini mungkin disebabkan oleh penggunaan bahasa yang sulit dicerna atau tidak sesuai dengan tingkat perkembangan pemikiran siswa. Oleh karena itu, kemam-

John Locke (1632-1704)

John Locke mengajukan teori "TABULA RASA", yaitu bahwa setiap pikiran anak bukanlah kotak kosong melainkan memiliki kemampuan untuk dikembangkan melalui adaptasi lingkungan.

Dalam hadits, Rasulullah SAW bersabda,

كُلُّ مَوْلُودٍ يُولَدُ عَلَى الْفِطْرَةِ فَأَبَوَاهُ يُهَوِّدَانِهِ أَوْ يُنَصِّرَانِهِ أَوْ يُمَجِّسَانِهِ.

Artinya: "*Setiap anak lahir dalam keadaan fithrah, kedua orangtuanya lah yang menjadikannya Nasrani, Yahudi, atau Majusi*"

Dua konsep ini menunjukkan kesamaan, yaitu bahwa pikiran siswa memiliki pengetahuan awal (prior knowledge), tugas guru adalah membangkitkan pengetahuan awal tersebut untuk mendapatkan pengetahuan baru.

Teachers often find it difficult to distinguish between storytelling and giving explanations. Sometimes, the explanations given by teachers are not easily understood by students, even though the explanations seem clear to the teachers. This may be due to the use of language that is difficult to digest or that does not match the students' level of cognitive development. Therefore, the ability to

John Locke (1632-1704)

John Locke proposed the "TABULA RASA" theory, namely that a child's mind is not an empty slate but has abilities that can be developed through adaptation to the environment.

In a hadith, Rasulullah SAW said,

كُلُّ مَوْلُودٍ يُولَدُ عَلَى الْفِطْرَةِ فَأَبَوَاهُ يُهَوِّدَانِهِ أَوْ يُنَصِّرَانِهِ أَوْ يُمَجِّسَانِهِ.

Meaning: *"Every child is born in a state of fitrah; it is the parents who make him a Christian, a Jew, or a Magian."*

These two concepts show a similarity, namely that students' minds already have initial knowledge (prior knowledge), and the teacher's task is to activate this initial knowledge in order to acquire new knowledge.

English version

Figure 2. Discussion of Explaining Skills Linked to Hadith

Figure 3 shows an example activity in the worksheet on angles, set in the context of the *Dam-daman* game.

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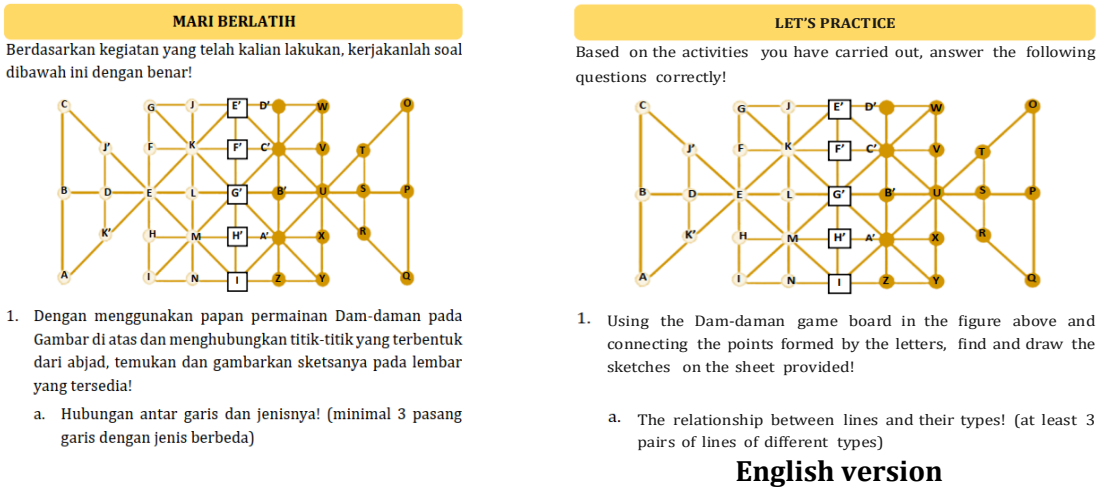


MARI BERLATIH

Berdasarkan kegiatan yang telah kalian lakukan, kerjakanlah soal dibawah ini dengan benar!

1. Dengan menggunakan papan permainan Dam-daman pada Gambar di atas dan menghubungkan titik-titik yang terbentuk dari abjad, temukan dan gambarkan sketsanya pada lembar yang tersedia!
   a. Hubungan antar garis dan jenisnya! (minimal 3 pasang garis dengan jenis berbeda)

LET'S PRACTICE

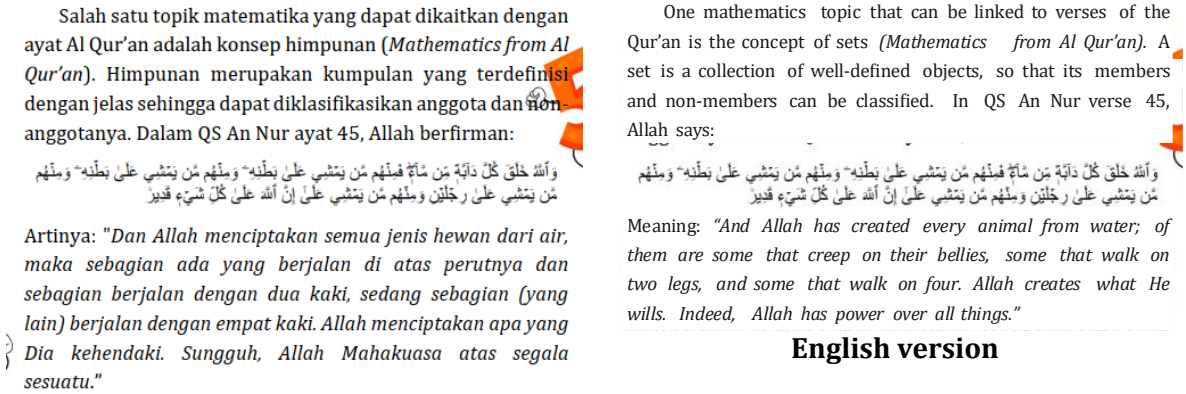
Based on the activities you have carried out, answer the following questions correctly!

1. Using the Dam-daman game board in the figure above and connecting the points formed by the letters, find and draw the sketches on the sheet provided!
   a. The relationship between lines and their types! (at least 3 pairs of lines of different types)

English version

Figure 3. Exploring Relationships Between Lines Using the Traditional *Dam-daman* Game

Figures 4 show the integration of Islamic values through the concept of sets in *QS An-Nur* verse 45.



Salah satu topik matematika yang dapat dikaitkan dengan ayat Al Qur'an adalah konsep himpunan (*Mathematics from Al Qur'an*). Himpunan merupakan kumpulan yang terdefinisi dengan jelas sehingga dapat diklasifikasikan anggota dan non-anggotanya. Dalam QS An Nur ayat 45, Allah berfirman:

وَٱللَّهُ خَلَقَ كُلَّ دَآبَّةٍ مِّن مَّآءٍ فَمِنْهُم مَّن يَمْشِي عَلَىٰ بَطْنِهِۦ وَمِنْهُم مَّن يَمْشِي عَلَىٰ رِجْلَيْنِ وَمِنْهُم مَّن يَمْشِي عَلَىٰ أَرْبَعٍ ۚ يَخْلُقُ ٱللَّهُ مَا يَشَآءُ ۚ إِنَّ ٱللَّهَ عَلَىٰ كُلِّ شَيْءٍ قَدِيرٌ

Artinya: "*Dan Allah menciptakan semua jenis hewan dari air, maka sebagian ada yang berjalan di atas perutnya dan sebagian berjalan dengan dua kaki, sedang sebagian (yang lain) berjalan dengan empat kaki. Allah menciptakan apa yang Dia kehendaki. Sungguh, Allah Mahakuasa atas segala sesuatu.*"

One mathematics topic that can be linked to verses of the Qur'an is the concept of sets *(Mathematics from Al Qur'an).* A set is a collection of well-defined objects, so that its members and non-members can be classified. In QS An Nur verse 45, Allah says:

وَٱللَّهُ خَلَقَ كُلَّ دَآبَّةٍ مِّن مَّآءٍ فَمِنْهُم مَّن يَمْشِي عَلَىٰ بَطْنِهِۦ وَمِنْهُم مَّن يَمْشِي عَلَىٰ رِجْلَيْنِ وَمِنْهُم مَّن يَمْشِي عَلَىٰ أَرْبَعٍ ۚ يَخْلُقُ ٱللَّهُ مَا يَشَآءُ ۚ إِنَّ ٱللَّهَ عَلَىٰ كُلِّ شَيْءٍ قَدِيرٌ

Meaning: *"And Allah has created every animal from water; of them are some that creep on their bellies, some that walk on two legs, and some that walk on four. Allah creates what He wills. Indeed, Allah has power over all things."*

English version

Figure 4. Example of the Concept of Sets in QS An-Nur Verse 45

After development was completed, the textbook was validated by experts in content, instruction, design, and Islamic and cultural integration. Table 3 presents the expert validation results.

Table 3. Expert Validation Results

Validation	Mean Score	Percentage	Remarks
Content Validation	3.86	96.43%	Valid
Instructional Validation	3.75	93.75%	Valid
Design Validation	3.70	92.50%	Valid
Islamic and Cultural Integration Validation	3.70	92.50%	Valid
Overall Mean	3.75	93.80%	Valid

All four validation aspects were in the valid category (above 80%). Content validation had the highest percentage (96.43%), while design validation and Islamic and cultural integration validation each had 92.50%. Content validation received the highest

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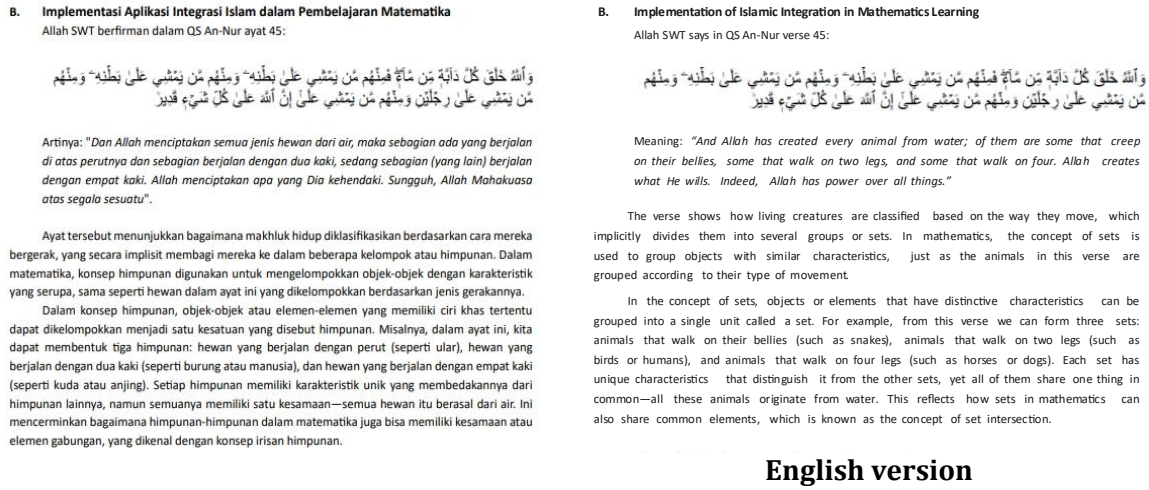
score because the content of the textbook is aligned with mathematics microteaching. Design validation and integration validation received the lowest scores because several parts still needed revision. In the design aspect, revisions were required for the cover page and the evaluation section. In contrast, the integration aspect also required revisions, including the integration of Islamic values.



B. Implementasi Aplikasi Integrasi Islam dalam Pembelajaran Matematika

Allah SWT berfirman dalam QS An-Nur ayat 45:

وَٱللَّهُ خَلَقَ كُلَّ دَآبَّةٍ مِّن مَّآءٍ ۖ فَمِنْهُم مَّن يَمْشِي عَلَىٰ بَطْنِهِۦ ۖ وَمِنْهُم مَّن يَمْشِي عَلَىٰ رِجْلَيْنِ ۖ وَمِنْهُم مَّن يَمْشِي عَلَىٰٓ أَرْبَعٍ ۚ يَخْلُقُ ٱللَّهُ مَا يَشَآءُ ۚ إِنَّ ٱللَّهَ عَلَىٰ كُلِّ شَيْءٍ قَدِيرٌ

Artinya: "*Dan Allah menciptakan semua jenis hewan dari air, maka sebagian ada yang berjalan di atas perutnya dan sebagian berjalan dengan dua kaki, sedang sebagian (yang lain) berjalan dengan empat kaki. Allah menciptakan apa yang Dia kehendaki. Sungguh, Allah Mahakuasa atas segala sesuatu*".

Ayat tersebut menunjukkan bagaimana makhluk hidup diklasifikasikan berdasarkan cara mereka bergerak, yang secara implisit membagi mereka ke dalam beberapa kelompok atau himpunan. Dalam matematika, konsep himpunan digunakan untuk mengelompokkan objek-objek dengan karakteristik yang serupa, sama seperti hewan dalam ayat ini yang dikelompokkan berdasarkan jenis gerakannya.

Dalam konsep himpunan, objek-objek atau elemen-elemen yang memiliki ciri khas tertentu dapat dikelompokkan menjadi satu kesatuan yang disebut himpunan. Misalnya, dalam ayat ini, kita dapat membentuk tiga himpunan: hewan yang berjalan dengan perut (seperti ular), hewan yang berjalan dengan dua kaki (seperti burung atau manusia), dan hewan yang berjalan dengan empat kaki (seperti kuda atau anjing). Setiap himpunan memiliki karakteristik unik yang membedakannya dari himpunan lainnya, namun semuanya memiliki satu kesamaan—semua hewan itu berasal dari air. Ini mencerminkan bagaimana himpunan-himpunan dalam matematika juga bisa memiliki kesamaan atau elemen gabungan, yang dikenal dengan konsep irisan himpunan.

B. Implementation of Islamic Integration in Mathematics Learning

Allah SWT says in QS An-Nur verse 45:

وَٱللَّهُ خَلَقَ كُلَّ دَآبَّةٍ مِّن مَّآءٍ ۖ فَمِنْهُم مَّن يَمْشِي عَلَىٰ بَطْنِهِۦ ۖ وَمِنْهُم مَّن يَمْشِي عَلَىٰ رِجْلَيْنِ ۖ وَمِنْهُم مَّن يَمْشِي عَلَىٰٓ أَرْبَعٍ ۚ يَخْلُقُ ٱللَّهُ مَا يَشَآءُ ۚ إِنَّ ٱللَّهَ عَلَىٰ كُلِّ شَيْءٍ قَدِيرٌ

Meaning: *"And Allah has created every animal from water; of them are some that creep on their bellies, some that walk on two legs, and some that walk on four. Allah creates what He wills. Indeed, Allah has power over all things."*

The verse shows how living creatures are classified based on the way they move, which implicitly divides them into several groups or sets. In mathematics, the concept of sets is used to group objects with similar characteristics, just as the animals in this verse are grouped according to their type of movement.

In the concept of sets, objects or elements that have distinctive characteristics can be grouped into a single unit called a set. For example, from this verse we can form three sets: animals that walk on their bellies (such as snakes), animals that walk on two legs (such as birds or humans), and animals that walk on four legs (such as horses or dogs). Each set has unique characteristics that distinguish it from the other sets, yet all of them share one thing in common—all these animals originate from water. This reflects how sets in mathematics can also share common elements, which is known as the concept of set intersection.

English version

Figure 5. Integration Discussion before Revision

One suggestion was given by the integration validator, namely that the discussion of integration at the beginning of Chapter 3 should refer to Islamic integration theory and explain the urgency of Islamic integration. Initially, the researchers drafted the beginning of Chapter 3 by presenting several examples of applying Islamic integration in mathematics learning. However, they did not explain the integration models that teachers or prospective teachers could use when applying Islamic integration in their teaching. The Islamic integration in this textbook refers to the model of integrating mathematics and the Qur'an proposed by Abdussakir and Rosmanidar (2017), which positions the Qur'an not merely as a source of illustrative examples but also as a source, a purpose, and a perspective of mathematical knowledge. The model comprises six forms of integration, ranging from mathematics from the *Qur'an* (mathematical concepts explored from Qur'anic verses), mathematics for the *Qur'an* (mathematics used to practice Qur'anic teachings, such as in worship), and mathematics to convey the *Qur'an* (mathematics as a means of deepening and delivering Qur'anic messages), to mathematics with the *Qur'an* (explaining mathematics from a Qur'anic perspective). Figure 5 shows the discussion before revision. Therefore, the researchers revised it as shown in Figure 6.

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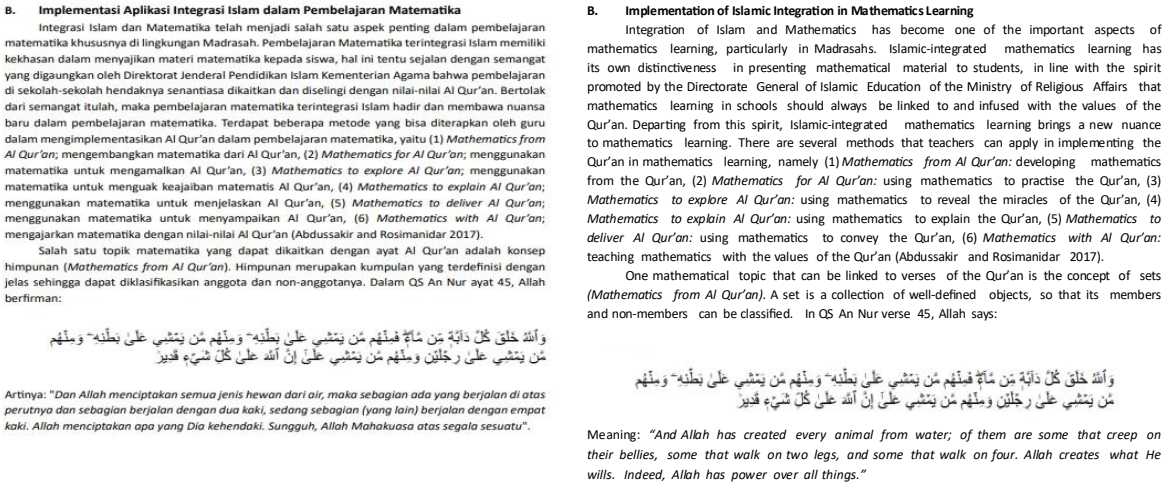

B. Implementasi Aplikasi Integrasi Islam dalam Pembelajaran Matematika

Integrasi Islam dan Matematika telah menjadi salah satu aspek penting dalam pembelajaran matematika khususnya di lingkungan Madrasah. Pembelajaran Matematika terintegrasi Islam memiliki kekhasan dalam menyajikan materi matematika kepada siswa, hal ini tentu sejalan dengan semangat yang digaungkan oleh Direktorat Jenderal Pendidikan Islam Kementerian Agama bahwa pembelajaran di sekolah-sekolah hendaknya senantiasa dikaitkan dan diselingi dengan nilai-nilai Al Qur'an. Bertolak dari semangat itulah, maka pembelajaran matematika terintegrasi Islam hadir dan membawa nuansa baru dalam pembelajaran matematika. Terdapat beberapa metode yang bisa diterapkan oleh guru dalam mengimplementasikan Al Qur'an dalam pembelajaran matematika, yaitu (1) *Mathematics from Al Qur'an*; mengembangkan matematika dari Al Qur'an, (2) *Mathematics for Al Qur'an*; menggunakan matematika untuk mengamalkan Al Qur'an, (3) *Mathematics to explore Al Qur'an*; menggunakan matematika untuk menguak keajaiban matematis Al Qur'an, (4) *Mathematics to explain Al Qur'an*; menggunakan matematika untuk menjelaskan Al Qur'an, (5) *Mathematics to deliver Al Qur'an*; menggunakan matematika untuk menyampaikan Al Qur'an, (6) *Mathematics with Al Qur'an*; mengajarkan matematika dengan nilai-nilai Al Qur'an (Abdussakir and Rosimanidar 2017).

Salah satu topik matematika yang dapat dikaitkan dengan ayat Al Qur'an adalah konsep himpunan (*Mathematics from Al Qur'an*). Himpunan merupakan kumpulan yang terdefinisi dengan jelas sehingga dapat diklasifikasikan anggota dan non-anggotanya. Dalam QS An Nur ayat 45, Allah berfirman:

وَٱللَّهُ خَلَقَ كُلَّ دَآبَّةٍ مِّن مَّآءٍ فَمِنْهُم مَّن يَمْشِي عَلَىٰ بَطْنِهِۦ ۖ وَمِنْهُم مَّن يَمْشِي عَلَىٰ رِجْلَيْنِ ۖ وَمِنْهُم مَّن يَمْشِي عَلَىٰٓ أَرْبَعٍ ۚ يَخْلُقُ ٱللَّهُ مَا يَشَآءُ ۚ إِنَّ ٱللَّهَ عَلَىٰ كُلِّ شَيْءٍ قَدِيرٌ

Artinya: "*Dan Allah menciptakan semua jenis hewan dari air, maka sebagian ada yang berjalan di atas perutnya dan sebagian berjalan dengan dua kaki, sedang sebagian (yang lain) berjalan dengan empat kaki. Allah menciptakan apa yang Dia kehendaki. Sungguh, Allah Mahakuasa atas segala sesuatu*".

B. Implementation of Islamic Integration in Mathematics Learning

Integration of Islam and Mathematics has become one of the important aspects of mathematics learning, particularly in Madrasahs. Islamic-integrated mathematics learning has its own distinctiveness in presenting mathematical material to students, in line with the spirit promoted by the Directorate General of Islamic Education of the Ministry of Religious Affairs that mathematics learning in schools should always be linked to and infused with the values of the Qur'an. Departing from this spirit, Islamic-integrated mathematics learning brings a new nuance to mathematics learning. There are several methods that teachers can apply in implementing the Qur'an in mathematics learning, namely (1) *Mathematics from Al Qur'an:* developing mathematics from the Qur'an, (2) *Mathematics for Al Qur'an:* using mathematics to practise the Qur'an, (3) *Mathematics to explore Al Qur'an:* using mathematics to reveal the miracles of the Qur'an, (4) *Mathematics to explain Al Qur'an:* using mathematics to explain the Qur'an, (5) *Mathematics to deliver Al Qur'an:* using mathematics to convey the Qur'an, (6) *Mathematics with Al Qur'an:* teaching mathematics with the values of the Qur'an (Abdussakir and Rosimanidar 2017).

One mathematical topic that can be linked to verses of the Qur'an is the concept of sets *(Mathematics from Al Qur'an)*. A set is a collection of well-defined objects, so that its members and non-members can be classified. In QS An Nur verse 45, Allah says:

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Meaning: *"And Allah has created every animal from water; of them are some that creep on their bellies, some that walk on two legs, and some that walk on four. Allah creates what He wills. Indeed, Allah has power over all things."*

English version

Figure 6. Integration Discussion after Revision

Implementation stage

In this stage, a small-scale trial was conducted with fifth-semester Mathematics Education students who were taking or had taken the Basic Teaching Skills course and with the course lecturer. The trial aimed to test the textbook's readability and practicality. The students were then asked to complete a practicality questionnaire covering three aspects: format, content, and language. Table 4 presents the practicality questionnaire results as percentages after the small-scale trial.

Table 4. Percentage Results of the Practicality Questionnaire According to Students

Aspect	Mean Percentage	Remarks
Format	73%	Fairly Practical
Content	92%	Practical
Language	75%	Fairly Practical
Final Mean	80%	Practical

Based on Table 4, every aspect of the practicality questionnaire scored above 70%, with an overall final mean of 80%, meaning that the textbook met the practicality criterion. Revisions made after the small-scale trial included correcting the writing format, paticularly italicizing foreign terms, and correcting several typographical errors. The content aspect obtained the highest percentage (92%), while the format (73%) and language (75%) aspects were in the fairly practical category. The practicality questionnaire consisted of closed-ended assessment items, and students did not provide open-ended comments. Consequently, the relatively lower scores in the areas of format

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and language can only be reported quantitatively, and the specific reasons underlying these student assessments cannot be identified from the available data.

Table 5 presents the percentage results of the practicality questionnaire according to the Basic Teaching Skills course lecturer.

Table 5. Percentage Results of the Practicality Questionnaire According to the Course Lecturer

Aspect	Mean Percentage	Remarks
Format	65%	Fairly Practical
Content	100%	Practical
Language	68.75%	Fairly Practical
Final Mean	77.92%	Fairly Practical

The practicality questionnaire of the Basic Teaching Skills course lecturer showed a practicality percentage of 77.92%, qualifying as fairly practical with no revision needed. The content aspect obtained the highest percentage (100%, practical), while the format (65%) and language (68.75%) aspects qualified as fairly practical. The lecturer noted that the discussion tended to be narrative, which might make it difficult for students to grasp. In addition, the lecturer suggested providing concrete examples of implementation in learning.

Evaluation stage

In this stage, the validity and practicality results of the developed textbook were obtained. Validity was obtained from each validator's assessment. Content validation yielded a final percentage of 96.43%, instructional validation 93.75%, design validation 92.50%, and Islamic and cultural integration validation 92.50%. Overall, each expert validation met the valid criterion, with a mean validity of 93.80% across the four validators. In terms of practicality, the student questionnaire achieved 80% (practical), and the lecturer questionnaire achieved 77.92% (fairly practical). The textbook thus met the validity and practicality criteria and can be used as a learning resource in the Basic Teaching Skills course.

Discussion

All aspects of expert validation fell within the valid category, with an overall mean of 93.80%: content 96.43%, instruction 93.75%, and design and Islamic and cultural integration 92.50% each. The highest content score likely reflects the development process, which was based on a review of the LO of the Basic Teaching Skills course and the existing guidebook. The Islamic and cultural integration score, equal to the design

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score, indicates that, according to the experts, Islamic values and local wisdom were adequately embedded in the textbook. However, expert validation assessed only the feasibility of the book's design and content, not its impact on students, so these results cannot be interpreted as evidence of Ulul Albab character formation.

The small-scale trial yielded a practicality of 80% (practical) according to the students. Content received the highest percentage (92%), while format (73%) and language (75%) were only fairly practical, well below the expert validation scores, all of which exceeded 90%. This difference may be related to the different roles of the respondents, as the experts assessed the feasibility of the design, whereas the students rated the book after using it in the trial. However, because no qualitative data were collected from students, the specific reasons for their lower ratings of the format and language aspects cannot be determined. This is consistent with the revisions after the trial, namely italicizing foreign terms and correcting typographical errors, which relate directly to the format and language aspects. The lecturer's assessment (77.92%, fairly practical), with the lowest scores for format (65%) and language (68.75%), supports this finding. These findings indicate the importance of user trials before a textbook is widely used.

The integration of Islamic values and local wisdom is intended to equip prospective teachers with character education integrated into teaching practice (Harahap et al., 2026; Rusminati et al., 2021). *Ulul Albab* character is understood as an educational model that balances intellectual, emotional, and spiritual intelligence (Basiroh et al., 2025). In this textbook, the character is not merely present as textual content but is operationalized in teaching simulation activities. In the skill of opening and closing lessons, students are trained to open the class in an atmosphere that evokes spiritual enthusiasm (*dhikr*) and to close it with a conclusion and by relating the mathematical material to the greatness of the Creator (Setiawan et al., 2025). In explaining skills, teachers link concept explanations to hadith (*fikr*), as shown in Figure 2. In teaching simulations, students design and practice contextual learning (*amal*). Teachers who instill religious values have also been reported to open lessons with prayer and reinforce discipline (Harahap et al., 2026).

Local wisdom and the position of the textbook relative to previous research. Local wisdom connects abstract mathematical concepts with everyday realities. Integrating

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culture into mathematics teaching materials, or ethnomathematics, can increase student engagement and strengthen students' cultural identity (Harefa, 2025). Annisa et al. (2023) likewise examined whether problem-based learning grounded in Islamic ethnomathematics helps students at Islamic higher education institutions understand mathematical concepts. In this textbook, local wisdom is integrated to provide real contexts in teaching simulations so that learning becomes more meaningful (Mulya & Faradiba, 2025). Unlike ethnomathematics studies that often stop at cultural exploration (Serepinah et al., 2023), this textbook uses cultural contexts as material for prospective teachers to practice designing and teaching lessons. Compared with previous mathematics microteaching books, namely one still based on the 2013 Curriculum in Netriwati (2018) and one based on the *Merdeka* Curriculum without Islamic and cultural integration in Hariastuti and Yohannes (2023), this textbook integrates Islamic values and local wisdom oriented toward *Ulul Albab*. This finding also addresses prospective teachers' confusion in initiating teaching that connects Islamic values and mathematics (Inganah et al., 2023) by providing examples of activities that can be put into practice directly. Islamic value-integrated mathematics materials have also been developed previously, for example, an e-module on algebraic expressions using a scientific approach (Hikmah & Haqiqi, 2021). However, such materials were designed for school learners rather than for prospective teachers in microteaching courses.

Theoretically, this study proposes a way to translate the three pillars of Ulul Albab and local wisdom into teaching practice activities in mathematics teacher education, so value integration does not stop at knowledge about integration. Practically, this study produces a valid and practical textbook for the Basic Teaching Skills course. The textbook is positioned before field practice, when students teach in real classrooms under the guidance of mentor teachers who provide feedback (Mishiwo, 2025). This study has limitations, namely the small-scale trial in a single study program, practicality measured through the perceptions of students and one lecturer, the absence of qualitative feedback from students to explain their practicality ratings, and the absence of data on changes in *Ulul Albab* character, teaching competence, or students' teaching performance. Therefore, the formation of *Ulul Albab* character is positioned as an expected pedagogical outcome rather than a proven impact.

Based on the results of this integrated textbook development study, further

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research is warranted. Possible further studies include experimental research to determine the effectiveness of the textbook in improving students' teaching skills, as well as research examining students' ability to design integrated lesson plans. Future research should use experimental or quasi-experimental designs with *Ulul Albab* character instruments (*dhikr*, *fikr*, *amal*) and teaching performance assessments, and should explore students' qualitative feedback.

CONCLUSION

A mathematics microteaching textbook integrating Islamic values and local wisdom oriented toward *Ulul Albab* character was developed using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The development process began with a needs analysis of Mathematics Education students, followed by designing the learning outcomes, study materials, and a book framework that maps *dhikr*, *fikr*, and *amal* onto microteaching activities, then product development and expert validation, a small-scale trial, and evaluation. The content, instructional, design, and Islamic and cultural integration validation results were 96.43%, 93.75%, 92.50%, and 92.50%, respectively (mean 93.80%), so the textbook was declared valid.

The small-scale trial with 35 students showed a practicality of 80% (practical), with the content aspect highest (92%) and the format (73%) and language (75%) aspects fairly practical; the course lecturer rated its practicality at 77.92% (fairly practical). Thus, the textbook is valid and practical for use in the Basic Teaching Skills course. This study has limitations, namely the small-scale trial in a single study program, practicality based on the perceptions of students and one lecturer, and the absence of data on the textbook's effectiveness on *Ulul Albab* character and teaching competence. Therefore, the formation of *Ulul Albab* character is positioned as an expected pedagogical outcome rather than a proven impact. Future research should test effectiveness using experimental or quasi-experimental designs, employ Ulul Albab character instruments and teaching performance assessments, involve more course lecturers, and explore students' qualitative feedback to improve the textbook's format and language.

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AUTHOR CONTRIBUTIONS

First Author: Focused on drafting the introduction, designing the methodology, reporting research findings, and contributing to textbook development.

Second Author: Focused on preparing literature reviews, data collection, data analysis, and textbook preparation.

Third Author: Focused on developing research instruments, collecting data, validating textbooks, and contributing to textbook development.

REFERENCES

Abdussakir, & Rosmanidar. (2017). Model integrasi matematika dan Al-Quran serta praktik pembelajarannya. *Seminar Nasional Integrasi Matematika di dalam Al-Quran*, 1–16. https://repository.uin-malang.ac.id/1934/2/1934.pdf

Ainin, A. H., Fauziah, C. A., & Fu'adi, E. A. (2025). Menghidupkan kembali permainan dam-daman sebagai sarana dan motivasi belajar yang menyenangkan di sekolah dasar. *Maliki Interdisciplinary Journal (MIJ)*, *3*(11), 2296–2305. https://urj.uin-malang.ac.id/index.php/mij/article/view/16739

Aitenova, E. (2025). Enhancing teaching skills through digital feedback in microteaching: A study with prospective primary teachers. *International Journal of Information and Education Technology*, *15*(9), 1820–1828. https://doi.org/10.18178/ijiet.2025.15.9.2383

Annisa, C., Triani, D. A., & Tanti, Y. K. (2023). Is it true that PBL based on Islamic ethnomathematics makes it easier for PTKIN students to understand mathematical concepts? *Journal Focus Action of Research Mathematic (Factor M)*, *6*(1), 82–98. https://doi.org/10.30762/factor_m.v6i1.1228

Asregid, D., Mihiretie, D. M., & Kassa, S. A. (2023). Teacher educators' use of feedback to facilitate reflective practice among pre-service teachers during microteaching. *Cogent Education*, *10*(2), Article 2257121. https://doi.org/10.1080/2331186X.2023.2257121

Basiroh, S., Yusgiantara, A., & Baidi, B. (2025). The Ulul Albab model by Prof. Imam Suprayogo: Merging science, faith, and character in Islamic education. *ALSYS: Jurnal Keislaman dan Ilmu Pendidikan*, *5*(4), 1185–1205. https://doi.org/10.58578/alsys.v5i4.6323

Cavanagh, M., & Tran, D. (2025). Pre-service teachers' feedback on their peers' lesson plans. *Asia-Pacific Journal of Teacher Education*, *53*(4), 464–478. https://doi.org/10.1080/1359866X.2025.2539240

Fitri, N. A. M., Zuhro, N. N., & Hasanah, R. M. (2025). Paradigma pendidikan berbasis Ulul Albab dalam perspektif Al-Quran dan Hadis. *Tadrisuna: Jurnal Pendidikan Islam dan Kajian Keislaman*, *8*(2), 15–30. https://doi.org/10.67114/Cavanahtadrisuna.v8i2.162

Franke, U., Backfisch, I., Scherzinger, L., & Tolou, A. (2024). Do prompts and strategy instruction contribute to pre-service teachers' peer-feedback on technology-integration? *Educational Technology Research and Development*, *72*(6), 3117–3138. https://doi.org/10.1007/s11423-024-10403-8

Erhan, G., Erdinç, Ç., & Çiğdem, H. (2024). Self-regulated learning strategies used by prospective mathematics teachers. *International Journal of Mathematical Education in Science and Technology*, *57*(1), 76-104. https://doi.org/10.1080/0020739X.2024.2427079

Halder, S., & Saha, S. (2023). *The Routledge handbook of education technology* (1st ed.). Routledge India. https://doi.org/10.4324/9781003293545

Harahap, Y. N., Sartikawati, S., & Efendi, K. (2026). Pengalaman guru dalam mengintegrasikan pendidikan karakter Islami pada pembelajaran matematika untuk pendidikan berkualitas dan berkelanjutan. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, *10*(2), 1120–1134. https://doi.org/10.31004/cendekia.v10i2.5047

Harefa, D. (2025). Local wisdom as a means to foster independence in mathematics learning. *AFORE: Jurnal Pendidikan Matematika*, *4*(2), 101–117. https://doi.org/10.57094/afore.v4i2.3852

Hariastuti, R. M., & Yohannes, B. (2023). *Matematika dalam pembelajaran micro* (A. Wahdi, Ed.; 1st ed.). Dewa Publishing.

Hasnah, S., Susanto, N., Syahrudin, S., Solehuddin, M., Yuniarti, E., & Irawan, I. (2023). Implementasi nilai-nilai Islam dalam pendidikan jasmani dan olahraga untuk membentuk karakter Ulul Albab. *At-Ta'dib*, *18*(1), 18–27. https://doi.org/10.21111/attadib.v18i1.9909

Hikmah, N., & Haqiqi, A. K. (2021). Pengembangan e-modul matematika terintegrasi nilai-nilai Islam berbasis pendekatan saintifik pada materi bentuk aljabar. *Journal Focus Action of Research Mathematic (Factor M)*, *4*(1), 125–140. https://doi.org/10.30762/factor-m.v4i1.3438

Iliasova, L., Nekrasova, I., Mena, J., & Estrada-Molina, O. (2025). Microteaching on pre-service teachers' education: Literature review. *Frontiers in Education*, *10*, Article 1562975. https://doi.org/10.3389/feduc.2025.1562975

Inganah, S., Choirudin, C., Rizki, N., Farood, S. M. Y., & Susanti, N. (2023). Integration of Islamic values, mathematics, and career readiness competencies of prospective teachers in Islamic universities. *Delta-Phi: Jurnal Pendidikan Matematika*, *1*(1), 11–14. https://doi.org/10.61650/dpjpm.v1i1.31

Kurniawati, A. D., Saputra, M. R., & Fiangga, S. (2025). A quantitative investigation of mathematical identity and its components in prospective mathematics teachers. *Journal Focus Action of Research Mathematic (Factor M)*, *8*(2), 262–287. https://doi.org/10.30762/f_m.v8i2.6373

Mishiwo, M. (2025). An evaluation of pre-service teachers' practical experience in teaching mathematics. *Journal Focus Action of Research Mathematic (Factor M)*, *8*(2), 288–304. https://doi.org/10.30762/f_m.v8i2.6602

Mulya, A., & Faradiba, S. (2025). Integration of Islamic values in mathematics learning. *Jurnal Pendidikan Sains*, *13*(4), 264–276. https://doi.org/10.17977/jps.v13i42025p264

Mutijah. (2018). Model integrasi matematika dengan nilai-nilai Islam dan kearifan lokal budaya dalam pembelajaran matematika. *Jurnal Pendidikan Matematika*, *1*(2), 163–190. https://doi.org/10.21043/jpm.v1i2.4878

Netriwati, N. (2018). *Microteaching matematika* (2nd ed.). CV. Gemilang.

Nuraini, L. (2019). Integrasi nilai kearifan lokal dalam pembelajaran matematika SD/MI Kurikulum 2013. *Jurnal Pendidikan Matematika (Kudus)*, *1*(2), 1–17. https://doi.org/10.21043/jpm.v1i2.4873

Paiza, P., Lusiana, L., & Syahbana, A. (2022). Pengembangan LKPD berbasis PMRI pada masa pandemi COVID-19. *Seminar Nasional PGRI Provinsi Sumsel dan Universitas PGRI Palembang*, *1*, 152–160. https://jurnal.univpgri-palembang.ac.id/index.php/Prosidingpps/article/view/8287

Rahma, M., Rosyid, A., Vonti, L. H., & Yani, I. (2024). Efektifitas pembelajaran microteaching terhadap kemampuan kompetensi calon guru. *JPD: Jurnal Pendidikan Dasar*, *15*(2), 316–323. https://doi.org/10.21009/jpd.v15i2.43088

Rahmanto, S. A. (2022). Pengembangan media pembelajaran dam-daman untuk materi teorema Pythagoras SMP kelas VII. *Pedagogy*, *9*(1), 145–154. https://doi.org/10.30605/pedagogy.v9i1.3768

Rusminati, S. H., Irianto, A., & Fanny, A. M. (2021). Penguatan pendidikan karakter dalam pembelajaran matematika. *Inventa: Jurnal Pendidikan Guru Sekolah Dasar*, *5*(2), 280–286. https://doi.org/10.36456/inventa.5.2.a5164

Sarkowi, S. (2024). Islamic education with Ulul Albab integration paradigm. *Halaqa: Islamic Education Journal*, *8*(1), 97–104. https://doi.org/10.21070/halaqa.v8i1.1682

Serepinah, M., Maksum, A., & Nurhasanah, N. (2023). Kajian etnomatematika berbasis budaya lokal tradisional ditinjau dari perspektif pendidikan multikultural. *Scholaria: Jurnal Pendidikan dan Kebudayaan*, *13*(2), 148–157. https://doi.org/10.24246/j.js.2023.v13.i2.p148-157

Setiawan, S., Walidin, W., & Siregar, A. B. (2025). Revitalization of Islamic values-based curriculum: Integration of religious education in mathematics learning. *Electronic Journal of Education, Social Economics and Technology*, *6*(2), 1–10. https://doi.org/10.33122/ejeset.v6i2.944

Shirasaka, S., & Imagawa, T. (2026). Exploring pre-service teachers' reflection on nonverbal behavior in microteaching through three-point comparison feedback. *Education Sciences*, *16*(5), Article 760. https://doi.org/10.3390/educsci16050760

Sulistyawati, E., & Radite, R. (2024). Exploring the quality of learning modules developed by preservice mathematics teacher based on the national (Merdeka) curriculum. *Journal Focus Action of Research Mathematic (Factor M)*, *7*(1), 156–172. https://doi.org/10.30762/f_m.v7i1.3317

Vígh, T. (2024). Development of research skills through research-focused microteaching lesson study in preservice teacher education. *Teaching and Teacher Education*, *145*, Article 104618. https://doi.org/10.1016/j.tate.2024.104618

Wijaya, A. (2023). Rekonstruksi pendidikan pesantren: Telaah konsep tarbiyah Ulul Albab pemikiran Imam Suprayogo. *Risalah: Jurnal Pendidikan dan Studi Islam*, *9*(4), 1414–1428. https://doi.org/10.31943/jurnal_risalah.v9i4.516

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