

Multisensory Interactive Media as Menstrual Fiqh Education for Children of Concrete Operational Age

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ABSTRACT

This study aims to investigate the actual conditions of menstrual fiqh education for children at the concrete operational stage and to develop an interactive multisensory product based on Islamic values as a learning medium that is appropriate to the characteristics of children's cognitive development. This study uses a Research and Development (R&D) methodology by adapting the three initial stages of the 4D model developed by Thiagarajan and Semmel, namely the Definition, Design, and Development stages. The results of the study indicate that the developed product is able to meet the targeted learning outcomes and obtain a very high level of validity, with a score of 96.42% from fiqh experts, 91.07% from media experts, and 88.89% from limited users. These findings indicate that interactive multisensory media based on Islamic values has significant potential as an effective, contextual, and developmentally friendly educational tool in helping children understand the concept of menstrual fiqh appropriately, positively, and directed from an early age. The implications of the study emphasize the importance of integrating a multisensory approach and Islamic values in children's reproductive health education to build a correct religious understanding, psychological readiness, and a positive attitude towards biological changes.

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1. INTRODUCTION

Menstrual jurisprudence education is a crucial part of developing religious understanding and biological readiness in girls from an early age. However, in practice, education about menstruation is often considered taboo, preventing girls from gaining adequate understanding before menarche. This situation has the potential to lead to confusion, anxiety, and negative attitudes toward the biological

changes they experience (Sirajulhuda, 2017). Proper education from elementary school age is very important, especially in the concrete operational stage, which is the phase of cognitive development when children more easily understand concepts through direct experience, visuals, and concrete activities (Nurhasnawati, Sawaluddin, 2025).

The view of the Shafi'i school is that menstruation is one of the signs that a woman has entered puberty, so she is burdened with carrying out Islamic law (Yusuf Al-Qaradawi, 2022). Therefore, early menstruation education is necessary to prepare girls to face menstruation without confusion, considering that the average age of menarche (first menstruation) in Indonesia occurs between 9 and 12 years of age (Harahap, 2023). This means that before entering menarche, girls need to understand the concept and laws of menstruation. Based on Piaget's developmental theory, this age coincides with the concrete operational development stage—namely, 7-11 years of age (J. and BW Piaget, 2000), where children need visual and interactive stimulation to understand abstract concepts such as menstrual laws (April Yanti Rizki Hasanah, Lela Hartini, 2024).

Menstrual education significantly impacts children's knowledge, psychological readiness, and reproductive health behaviors. Health education has been shown to improve understanding and behavior regarding personal hygiene during menstruation (Ningsih Fadhilah, Mulawarman, 2024). Furthermore, providing menstrual education also influences children's readiness for menarche and reduces anxiety arising from a lack of understanding. Other research shows that health education significantly improves knowledge and behaviors regarding menstrual hygiene in adolescent girls (Fitri, Putra, & Anggraini, 2022).

Not only the knowledge aspect, the use of educational media has also been proven to improve adolescents' attitudes and understanding of genital hygiene during menstruation (Nurkasanah & Fathurahman, 2023). This suggests that appropriate learning approaches, including the use of media, play a crucial role in the effectiveness of menstrual education. Other research even found that health education can significantly improve knowledge and menstrual hygiene practices among school-aged adolescents (Silviyanti et al., 2020).

Menstruation education at a child's concrete developmental stage is an urgent need in Islamic education. Data shows that 57% of elementary school (MI/SD) students in Central Java do not understand the concept of *istihadhah* (blood from disease) and consider it the same as menstruation (Central Java Education Office, 2023). As many as 48% of sixth grade female students in Central Java experience errors in post-menstrual cleansing practices. (Walisongo State Islamic University Research Team, 2022). Meanwhile, in East Java, 55% of students do not understand the difference between menstruation and *istihadlah* even though they have graduated from MI, because the Fiqh teacher has difficulty explaining the difference between the two in an interesting way (East Java Education Office, 2023). Apart from that, menstrual jurisprudence learning services in elementary schools are also inadequate because they are only taught in class VI in the realm of science subject reproduction. In fact, Al-Qaradawi in *Fiqh*

al-Thaharah emphasizes that menstrual education must be provided proportionally, scientifically, and accompanied by an empathetic approach (Al-Qaradawi, 2001). There are also traditions related to menstruation that are not in line with Islamic law, such as the prohibition on washing hair during menstruation. Traditions should be used as educational tools because children are directly involved in these activities (Yusrina, Niswah, & Rubai, 2024).

Developing interactive learning media for children at the concrete development stage is a strategic solution. Mayer (2021) In the Cognitive Theory of Multimedia Learning (CTML), it is stated that learning through interactive multimedia can improve understanding by utilizing visual and auditory channels simultaneously. (RE Mayer, 2021). Manipulation of interactive visual objects in the form of images and videos can facilitate understanding through sensorimotor experiences. (J. Piaget, 1954a) (Cerovac &

Keane, 2025) This approach not only meets children's cognitive needs to learn about menstruation through sensorimotor exploration but also designs the learning into an interactive adventure (Sawaluddin, et.al, 2024). On the other hand, human working memory can only hold a small amount of information at a time, so learning methods must be tailored to the child's developmental stage. (Sweller, 2204). In the context of learning menstrual jurisprudence, interactive media can concretize concepts through multisensory interactive media as an interactive learning medium for menstrual jurisprudence that combines pedagogical principles, child-friendly design, and Islamic content (Sawaluddin, Koiy Sahbudin Harahap, Imran Rido, 2022).

This approach is strengthened by the application of cognitive scaffolding which structures content in stages, from basic concepts to the implications of worship, accompanied by videos and images to prevent cognitive overload (Sweller, 2204). Scaffolding helps children reach their maximum potential that they cannot achieve alone (Vygotsky, 1978), but rather through the provision of temporary support by teachers, parents, or learning media to help children achieve higher levels of understanding. This support is adaptive and is gradually reduced as the child's independence increases (Bruner, 1960).

Research on Islamic values-based menstruation education for young children has grown in recent years, but there are still gaps that need to be filled. Several studies have focused on menstruation from a health and Islamic perspective (Alifvia Nurkasanah & M. Fathurahman, 2023; Andriyani, nd; Fatimah & Nurhayati, 2022) However, the media developed is still textual in nature and pays little attention to aspects of children's cognitive development. Meanwhile, a study by Chen and Wang (2022) examined menstruation education in children using cognitive load theory. However, this study did not use interactive media or integrate Islamic values. Interactive media such as books and visual media (animation and video) have proven effective in improving students' understanding of menstruation (Agustina, Setianto, Syafiuddin, & Ibad, 2023; Indahsari, Wicaksono, & Adriana, 2023; Malinda, Damajanti, & Muljosumarto, 2017). Interactive media ensures that children are actively involved in learning so that it is easier to understand the material (Hanikah, Faiz, Nurhabibah, & Wardani, 2022), including menstrual jurisprudence, which tends to be highly complex. Therefore, this research will develop interactive, multisensory media for menstrual education tailored to the cognitive developmental stages of children at the concrete operational age.

This research shows novelty in several aspects, including (1) the lack of integration of Piaget's cognitive development theory, particularly the concrete operational stage, in the design of Islamic menstrual education media; and (2) the limited availability of interactive media that simultaneously integrates fiqh, psychological, and emotional aspects. This research aims to fill this gap by developing an interactive book that combines physical activities and psycho-religious modules equipped with Augmented Reality (AR) via QR Code. This novelty not only enriches the academic treasury but also addresses the practical need for menstrual education media that is holistic, age-appropriate, and based on Islamic values.

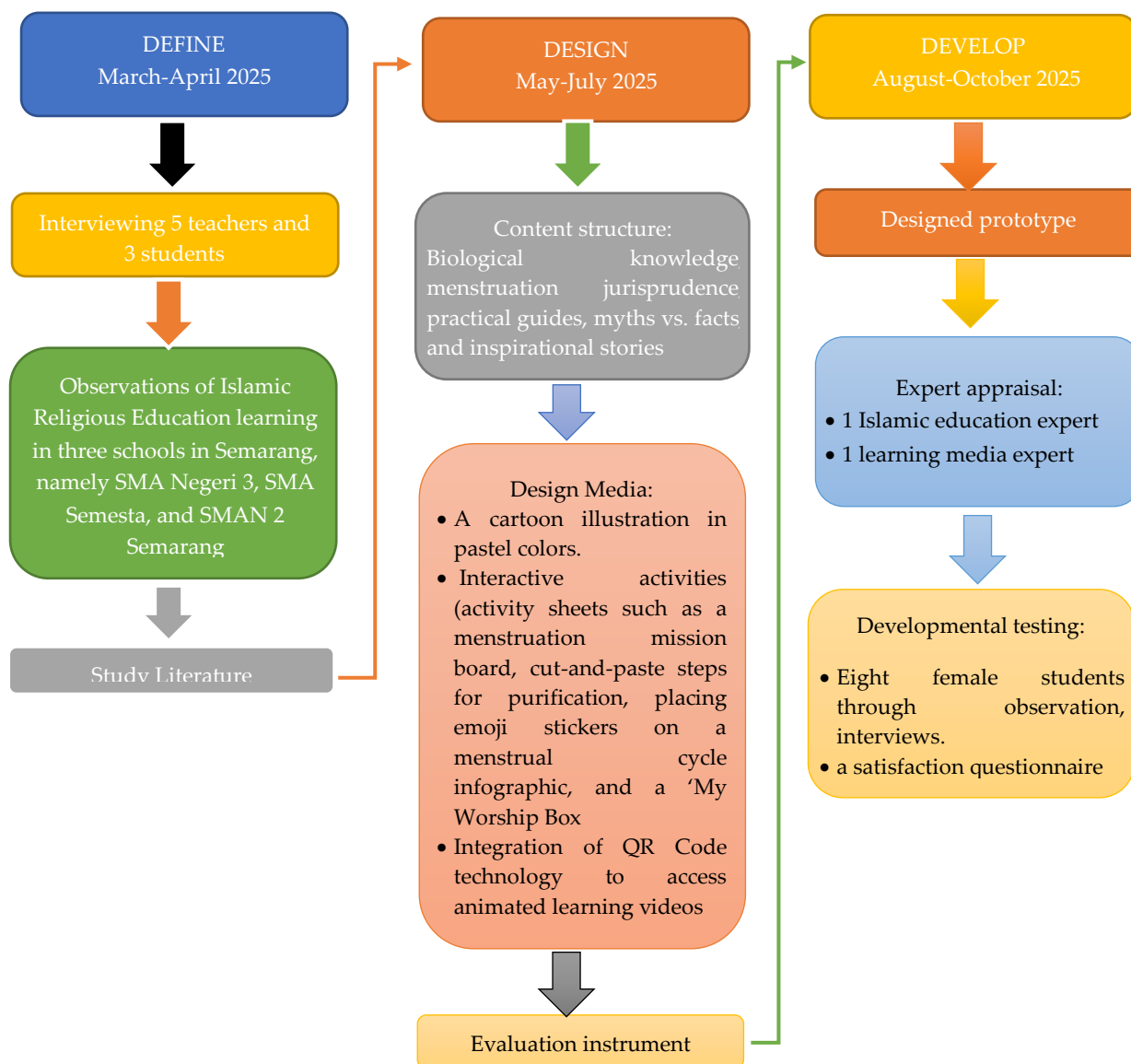
Based on the objectives of this study are: 1) what are the factual conditions of implementing menstrual education for children at concrete operational age?; and 2) how can multisensory interactive media based on Islamic values be used as a medium for menstrual education for children at concrete operational age?

2. METHODS

This research uses a research and development method by adopting the first three stages of 4D development design, namely the define, design, and develop stages (Thiagarajan, Semmel, & Semmel, 1974, Zamsiswaya, Sawaluddin, 2024). This research focuses on the development of multisensory interactive media for menstrual fiqh education for children of concrete operational age by analyzing

field needs, developing a prototype, and developing the media with validation by fiqh experts and media experts, along with user trials. The stages of this research are listed in more detail in Figure 1.

Picture1. Research Roadmap



1. Define Stage

The initial stage of this research will be conducted through a comprehensive study to identify media development needs. At this stage, the researcher conducted (1) a needs analysis by interviewing 5 teachers and 3 students to understand the challenges of menstruation education in Islamic religious education, (2) observations of Islamic Religious Education learning in three schools in Semarang, namely SMA Negeri 3, SMA Semesta, and SMAN 2 Semarang, and (3) a literature study of similar existing media. The collected data will be analyzed thematically to formulate product specifications, including aspects of content, design, and target groups. The results of this stage will form the basis for developing media that is appropriate to the characteristics of children of concrete operational age (7-11 years) and Islamic norms.

2. Design Stage

The design stage aims to prepare a prototype of a multisensory interactive media model about menstruation education in Islamic education. The features in this prototype consist of: (1) content structure (biological knowledge, menstruation jurisprudence, practical guides, myths vs. facts, and inspirational stories), (2) integration of QR Code technology to access animated learning videos, and (3) interactive activities in the form of activity sheets.

3. Develop Stage

The development phase consists of expert appraisal and developmental testing. During the expert appraisal phase, the designed prototype will be validated by one Islamic education expert and one learning media expert. Validation results will be assessed using a Likert scale of 1-4. The validation test uses descriptive percentage and category techniques to illustrate the model's feasibility. The expert assessment scores are then expressed as a percentage using the following formula:

$$P = \frac{\text{Skor Aktual}}{\text{Skor Ideal}} \times 100\%$$

Information:

P : Percentage

Actual score: Score given by expert validator

Ideal score : The maximum score is the result of multiplying the number of items by the maximum score for each item.

Table1. Category Percentage Expert Validator Assessment

No	Interval	Category
1	75% - 100%	Very good
2	50% - 74%	Good
3	25% - 49%	Pretty good
4	0% - 24%	Not good

Following this, a limited trial was conducted on eight female students through observation, interviews, and a satisfaction questionnaire. Product revisions were then made based on feedback. Product eligibility criteria were determined by achieving a minimum score of 80% in expert validation and 75% approval from users in the limited trial. This stage was conducted to ensure the product met the validity, practicality, and attractiveness aspects before dissemination.

3. FINDINGS AND DISCUSSION

Factual Conditions of Menstrual Education Implementation in Children of Concrete Operational Age

Menstrual education for children at concrete operational age (7-11 years old) ideally aims to enable children to understand menstrual jurisprudence correctly and simply, in accordance with their cognitive development, namely by understanding real and concrete objects. However, in reality, the conditions in the research subjects, namely Sh1, Sh2, and Sh3, indicate that children's understanding of menstruation is still lacking. This is due to several factors, including: first, the menstruation material presented by the teacher is still abstract and uses language that is difficult for children to understand. This makes it difficult for them to understand the material. Whereas children at concrete operational age emphasize understanding information through manipulation of real objects and situational simulations (J. Piaget, 1954b). Al-Qaradawi in Fiqh al-Thaharah emphasized that menstrual education

must be provided proportionally, scientifically, and accompanied by an empathetic approach (Yusuf al-Qardawi, 2001).

Second, The methods and media used to teach Islamic jurisprudence (fiqh) on menstruation are still monotonous and limited. The methods used are still limited to lectures and memorization. Meanwhile, the media used is limited to texts/books without sufficient visualization or multisensory experiences. This condition makes children passive, easily bored, and difficult to focus. Therefore, learning methods and media must be adapted to their developmental stage (11). Mayer (2021) in the Cognitive Theory of Multimedia Learning (CTML) states that learning through interactive multimedia can improve understanding by utilizing visual and auditory channels simultaneously (10). As stated by teacher GR1, "Students usually get bored quickly and take a long time to learn if the learning media is not varied enough." Third, child readiness. The topic of menstruation is still considered taboo, so many children are uncomfortable asking or discussing it. As a result, many children are unprepared for menarche (first menstruation), both emotionally and practically. Many children panic, are confused, or feel afraid when they first menstruate.

Given the above issues, interactive, concrete, and multisensory learning media are essential to ensure children's understanding of menstrual jurisprudence. GR1 explained that developing learning media is absolutely essential, given the importance of developing an understanding of menstruation from an early age.

Development of Islamic Value-Based Multisensory Interactive Media for Menstrual Education for Children of Concrete Operational Age

Learning media development is the process of developing a learning media program focused on media planning. The media to be used in the learning process is compiled and designed according to field needs, student characteristics, and learning materials. Based on the field conditions above, researchers will develop media in the form of an interactive multisensory menstrual book. This type of media has been proven effective in improving students' understanding of menstruation (18–20). Interactive media ensures that children are actively involved in learning, making it easier to understand the material (21).

This study used a research and development method with a 4D design consisting of the define, design, develop, and disseminate stages. Based on the results of learning observations and interviews conducted with teachers and students, the following data were obtained.

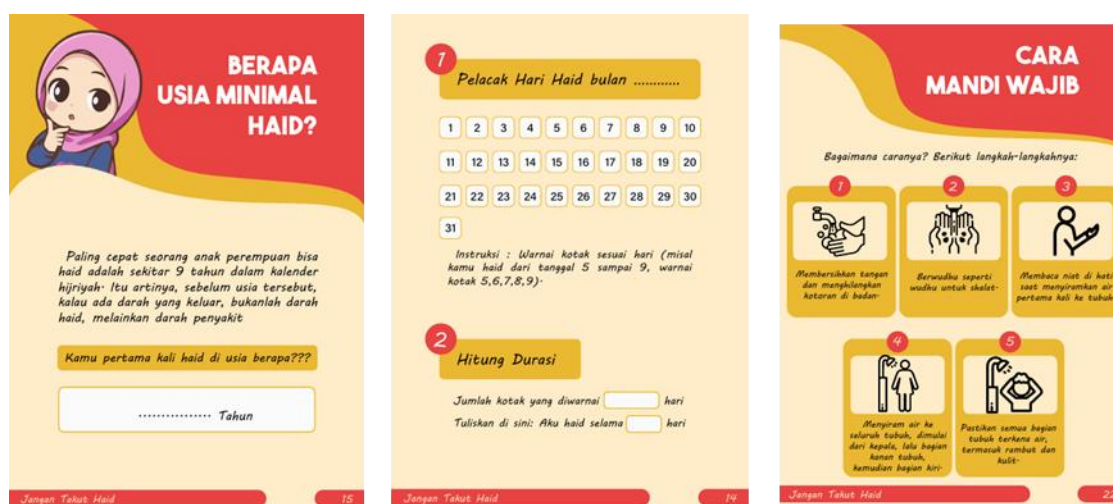
Table 2. Define and design stage of interactive multisensory media on menstrual jurisprudence for children of concrete operational age

Aspect	Define	Design
Cognitive Fit	The material must be appropriate to the concrete operational stage (real, simple, logical)	Simple menstrual cycle animation with pictures instead of long text
Multisensory	Involving more than one sense (visual, auditory, kinesthetic)	Animated video with voice narration + drag-and-drop activity for menstrual cycle sequence
Material	Delivering material in accordance with Islamic law, maintaining	Interactive module about worship that is allowed/not allowed during menstruation, complete with short prayers

Interactivity	politeness, and being culturally sensitive Children are actively involved through learning activities	Interactive quiz, educational game “choose the correct answer” about menstrual etiquette
Psychological and Emotional Aspects	The material should foster self-confidence, reduce stigma/fear	Digital storytelling with a girl character facing her first period
Language and Presentation	Use simple, communicative, systematic language	Explanation: “Menstruation is the discharge of blood from a woman's body every month, this is natural and healthy.”
Attractive Design	The design must be child-friendly, colorful, fun, and engaging.	Cartoon display with Muslim teenage characters, bright colors, easy-to-understand icons

From the data above, a multisensory interactive media was created as an education on menstrual jurisprudence with the following concept:

Picture2. Multisensory Interactive Media Prototype for Menstrual Fiqh Education for Children of Concrete Operational Age



The multisensory interactive media prototype above was then validated by experts, namely a menstrual jurisprudence expert and a media expert. The results of this validation are as follows:

Table3. Assessment of Multisensory Interactive Media for Menstrual Fiqh Education for Children of Concrete Operational Age by a Fiqh Expert Validator

No	Assessment Aspects	Evaluation			
		1	2	3	4
A. Conformity of Fiqh Content					
1.	Definition of menstruation according to relevant fiqh references				√
2.	The explanation of the signs of menstruation (color, duration) is clear and does not cause confusion.				√

3. Instructions for worship during menstruation (prayer, fasting, reading the Qur'an, dhikr) are accurate				√
4. Explanation of the correct and practical procedure for ghusl/purification				√
5. Information on age of menarche and variations is presented accurately and in a non-stigmatizing manner.				√
6. Fiqh terms (Arabic/translation) are precise and simplified for children				√
7. Fiqh references are listed or available when needed.		√		
8. Content maintains protection, respect, does not cause excessive embarrassment				√
B. Educational Approach for Concrete Operational Children				
9. Building positive perceptions about menstruation				√
10. Empathetic and non-judgmental delivery				√
11. Comprehensive coverage of menstruation material for children's level				√
12. Legal language/sentences are adapted to the cognition of 7–11 year olds (using real and concrete objects)				√
13. Examples/illustrations of everyday practice are appropriate and easy to understand.				√
14. Clearly distinguish between cultural customs and religious laws				√
Total of each score	0	2	0	52
Total number	54			

The table above shows the average score for interactive media, assessed by Islamic jurisprudence experts, at 54. Based on this score, the average percentage is 96.42%. When grouped into categories, this multisensory interactive media falls into the "very good" category, with a range of 75% to 100%.

This finding is in line with Jean Piaget's cognitive development theory which explains that children at the concrete operational stage understand concepts more effectively through direct experience, visual representations, and observable activities (J. and BW Piaget, 2000). Therefore, presenting menstrual jurisprudence material through a multisensory approach allows abstract concepts to become more concrete and easier to understand. High validity from jurisprudence experts indicates that the process of concretizing the material does not reduce the accuracy of the scientific substance, but rather strengthens understanding through learning experiences appropriate to the child's developmental stage.(Aini, 2022).

Next, expert validation was conducted by a media expert validator. The assessment results are as follows:

Table4. Assessment of Multisensory Interactive Media for Menstrual Fiqh Education for Children of Concrete Operational Age by Media Expert Validators

No	Assessment Aspects	Evaluation			
		1	2	3	4
A. Media Eligibility & Visual Design					
1.	Illustrations are age appropriate (non-sexual, child friendly) and aid understanding.			√	
2.	Layout & typography supports readability for children aged 7–11 years				√
3.	Colors, icons, and symbols are used consistently and without confusion.				√
4.	Multisensory elements (video and audio via QR, simple games) are relevant and practical.			√	
5.	Illustrations reflect diversity without stigmatization				√
B. Interactivity & QR Code / Video					
6.	QR placement is easy to scan and does not interfere with important elements.			√	
7.	Video quality (narration, duration, language) is suitable for children			√	
8.	Clear QR usage instructions for children & caregivers				√
9.	Link security (safe, free from inappropriate ads, relevant) is maintained				√
10.	Alternatives available if QR/video is not accessible (summary, offline files)				√
C. Pedagogical & Suitability to Concrete Operational Age					
11.	Activities according to the concrete operational stage (use of real and concrete objects)				√
12.	Learning objectives are stated clearly and can be measured.				√
D. Readability, Language & Ethics					
13.	Easy to understand language (simple sentences, familiar words)			√	
14.	There is no content that violates children's book ethics (images/text)				√
Total of each score		0	0	15	36
Total number		51			

Based on the assessment results conducted by media experts, the developed interactive media obtained a total score of 51. This score was then converted into a percentage to determine the level of product feasibility quantitatively. The conversion results showed an average percentage value of 91.07%. This percentage was then interpreted based on the previously established assessment category criteria. Within this category range, a value between 75% and 100% is included in the "very good" category. Therefore, the developed multisensory interactive media can be classified as media with very good quality.

With a high percentage of success, these results indicate that the developed media is considered highly suitable in terms of appearance, design, interactivity, and suitability for learning objectives. This assessment also indicates that the multisensory interactive media has sufficient quality for use as a

learning tool and has the potential to effectively support the educational process according to expected standards (Sawaluddin, Koisyahbudin, Imran Rido, 2022).

These findings align with Richard E. Mayer's multimedia learning theory, which asserts that learning is more effective when information is presented through an integrated combination of visual and verbal elements. Good media design can reduce cognitive load, improve information processing, and strengthen students' conceptual understanding (Richard E Mayer, 2021). The high validation score of media experts indicates that the principles of multimedia design have been applied appropriately, so that the media is able to facilitate an optimal learning process.

Table5. Validation Results from Islamic Jurisprudence Material Experts, Media Experts, and User Trials

Validation Results	Validator Score	Ideal Score	Percentage	Category
Validation of Fiqh Subject Matter Experts	52	54	96.42%	Very good
Media Expert Validation	51	54	91.07%	Very good
User Trial	48	54	88.89%	Very good

From the results of the validation by the fiqh expert, a percentage score of 96.42% was obtained with a very good category. The results of this expert validation also produced several notes such as (1) including a summary table of things that are allowed and not allowed to be done during menstruation; (2) things that can still be done during menstruation, such as praying, dhikr, or reading religious books, along with their pronunciation; and (3) adding material on the qodlo' prayer of women who are pure after menstruation. Meanwhile, the results of the media expert validation obtained a presentation score of 91.07% with a very good category. The notes from the media validator include (1) consistency of illustrations, images, and icons in each chapter; (2) use of more varied colors; (3) adding white space so that the display is not too crowded; and (4) using real examples and close to children's lives, for example school, home, playing. Meanwhile, the results of the user trial limited to eight students (4 menstruating, 4 not menstruating) obtained a percentage of 88.89%, or in the very good category. Thus, the average percentage score for media suitability was 92.16%, which is included in the very good category.

Furthermore, the results of the media suitability assessment by material experts, media experts and users in each aspect can be seen in the table below.

Table6. Feasibility Assessment by Fiqh Material Experts

Aspect	Final Presentation	Category
Conformity of fiqh content	96.8%	Very good
Educational approaches for children of concrete operational age	100%	Very good

The results of the assessment of the quality of interactive multisensory media as menstrual education by Islamic jurisprudence experts, reviewed in terms of the suitability of the content of menstrual jurisprudence, were 96.8%, categorized as very good. Meanwhile, in terms of the aspect of the menstrual education approach that is appropriate for children of concrete operational age, the percentage was 100%, categorized as very good.

These findings indicate that the media is not only accurate in terms of the substance of Islamic jurisprudence but also pedagogically appropriate in adapting the delivery method to the child's cognitive developmental stage (Winnuly, Ida Latifatul Umroh, 2026). The high validity of the appropriateness of Islamic jurisprudence content confirms that the material presented meets scientific

standards that are correct, systematic, and applicable. In Islamic education, material accuracy is a fundamental aspect because it is directly related to understanding the laws of worship, which must be practiced correctly (Fikri & Soraya, 2024). Accurate and operational presentation of material helps students understand Islamic jurisprudence concepts not only theoretically but also practically in everyday life. This principle aligns with learning design theory, which emphasizes that material quality and clarity of conceptual structure are key factors in successful learning (Rahmawati & Mayar, 2023)..

Meanwhile, the 100% achievement in terms of the suitability of the educational approach to the concrete operational stage indicates that the media has been optimally designed to suit the characteristics of children's cognitive development (Us, Afandi, & Z, 2023). This aligns with Jean Piaget's cognitive development theory, which states that children at the concrete operational stage understand concepts through direct experience, visualization, object manipulation, and observable activities (Firdaus & Prasetyo, 2025). Therefore, presenting menstrual jurisprudence material through multisensory media allows abstract concepts to become more concrete, making them easier for children to understand and internalize (J. and BW Piaget, 2000).

Table7. Feasibility Assessment by Media Experts

Aspect	Final Presentation	Category
Media suitability and visual design	90%	Very good
Interactivity and QR codes	90%	Very good
Pedagogical and content suitability	100%	Very good
Readability, language, and ethics	87.5%	Very good

The media quality assessment by media experts, based on media suitability and visual design, was 90%. Interactivity and QR codes scored 90%, pedagogical aspects and content suitability for children of concrete operational age scored 100%, and readability, language, and ethics scored 87.5%, categorized as very good.

The high scores for visual design and media suitability indicate that the presentation, structure, and organization of the information have been optimally designed. This aligns with Richard E. Mayer's multimedia learning theory, which emphasizes that clear, organized, and unobtrusive visual design can enhance comprehension and reduce cognitive load for students (Faqihuddin, Firmansyah, & Muflih, 2024). Principles such as visual consistency, spatial organization, and clarity of presentation contribute to more efficient information processing, resulting in more effective learning (Richard E Mayer, 2021).

The findings of this study also align with various empirical studies showing that interactive and multisensory learning media can increase student engagement, conceptual understanding, and information retention (Bangkit Gigih Prayoga*, Sri Wardani, Harniangsih, Bambang Subali, 2025). The integration of various sensory stimuli and interactive technology has been shown to enhance the learning process, particularly for complex or sensitive material (Shams & Seitz, 2008). In addition, the use of digital educational media in reproductive health education has been shown to increase students' knowledge, psychological readiness, and positive attitudes toward biological changes (April Yanti Rizki Hasanah, Lela Hartini, 2024).

Table 8. Results of Limited Trial of Multisensory Interactive Media Quality by 8 students at SMA Semesta

Aspect	Final Presentation	Category
Learning materials	89.6%	Very good
Appearance	89.2%	Very good
Interactive activities	91.6%	Very good

The results of the multisensory interactive media quality assessment by 8 students reviewed from the learning material aspect of 89.6% with a very good category, the display aspect of 89.2% with a very good category, and the interactive activity aspect of 91.6% with a very good category. With the results of expert validation and limited trials, this interactive media was then declared suitable for use and met the targeted results.

The high scores for visual design and media suitability indicate that the presentation, structure, and organization of the information have been optimally designed. This aligns with Richard E. Mayer's multimedia learning theory, which emphasizes that clear, organized, and unobtrusive visual design can enhance comprehension and reduce cognitive load for students (Handoyo & Waluyo, 2026). Principles such as visual consistency, spatial organization, and clarity of presentation contribute to more efficient information processing, resulting in more effective learning (Richard E Mayer, 2021).

The findings of this study are also supported by empirical research showing that the use of interactive and multisensory media can increase student learning engagement, information retention, and conceptual understanding (Daryati, 2025). The integration of various sensory stimuli has been shown to strengthen the learning process because students receive information through more than one sensory channel simultaneously (Shams & Seitz, 2008). In addition, research on the use of educational media in reproductive health learning shows that interactive media can improve students' knowledge and psychological readiness for the material being studied.

4. CONCLUSION

The results of the study indicate that the developed product was able to meet the targeted learning outcomes and achieved a very high level of validity, with scores of 96.42% from fiqh experts, 91.07% from media experts, and 88.89% from limited users. These findings indicate that interactive multisensory media based on Islamic values has significant potential as an effective, contextual, and developmentally friendly educational tool in helping children understand the concept of menstrual fiqh accurately, positively, and directed from an early age. The implications of this study demonstrate the importance of integrating a multisensory approach and Islamic values in children's reproductive health education, particularly in building correct religious understanding, psychological readiness, and positive attitudes toward biological changes. This study still has limitations in the limited scope of the trial. Therefore, further research is recommended to conduct longitudinal effectiveness tests with a broader and more demographically diverse sample, examine the impact of learning on changes in understanding and attitudes in the long term, and develop media adaptations for various formal and non-formal educational contexts to increase external validity and generalizability of the findings.

REFERENCES

- Agustina, A. N. ., Setianto, B., Syafiuddin, A., & Ibad, M. (2023). Pengembangan Media Edukasi Menggunakan Video Animasi Mengenai Pengetahuan Menstrual Personal Hygiene (Studi pada Siswi Kelas X di MAN Kota Surabaya). *Jurnal Promotif Prefentif*, 6(5). <https://doi.org/https://doi.org/10.47650/jpp.v6i5.947>
- Aini, W. (2022). Pengaruh Pendekatan Active Learning Terhadap Pembelajaran Pendidikan Agama

- Islam Dalam Membentuk Karakter Islami Siswa Smpn 4 Tanjungpinang-Kepulauan Riau. *TANJAK: Journal of Education and Teaching*, 3(1), 7–18. <https://doi.org/10.35961/tanjak.v3i1.381>
- Al-Qaradawi, Y. (2001). *Fiqh al-Thaharah: Ahkam al-Haid wa al-Nifas*. Kairo: Maktabah Wahbah.
- Alifvia Nurkasanah, & M. Fathurahman. (2023). Upaya Guru dalam Meningkatkan Pemahaman Fiqih Wanita pada Materi Haid bagi Siswi Kelas 4 MI Bahrul Ulum Buluh Krandegan Kebonsari Madiun. *AL-THIFL: Jurnal Ilmiah Pendidikan Guru Madrasah Ibtidaiyah*, 2(2), 142–151. <https://doi.org/10.21154/thifl.v2i2.1241>
- Andriyani, A. (n.d.). *Haid Pertamaku*. Bandung: Assalam Kids Publishing.
- April Yanti Rizki Hasanah, Lela Hartini, R. E. (2024). The Influence Of Educational Media On The Knowledge And Attitudes Of Young Women About Genital Hygiene During Menstruation At SMP Negeri 2 Bengkulu City. *Journal of Nursing and Public Health*, 12(1), 61–71.
- Bangkit Gigih Prayoga*, Sri Wardani, Harniangsih, Bambang Subali, N. W. (2025). Literature Review on the Application of Interactive Media in Science Learning in Elementary Schools for the Period 2020- 2025. *Journal of Educational Sciences*, 9(4), 2085–2100.
- Bruner, J. (1960). *The Process of Education*. Cambridge: Harvard University Press.
- Cerovac, M., & Keane, T. (2025). Early insights into Piaget’s cognitive development model through the lens of the Technologies curriculum. *International Journal of Technology and Design Education*, 35(1), 61–81. <https://doi.org/10.1007/s10798-024-09906-5>
- Chen, L., & Wang, Y. (2022). Scaffolding Menstrual Knowledge: A Cognitive Load Approach for Early Childhood Education. *Early Childhood Research Quarterly*.
- Daryati, M. E. (2025). The Effectiveness Of Interactive Learning Media In Improving Early Childhood Numeracy Skills. *Pena Paud Journal*, 6(1), 1–12.
- Dinas Pendidikan Jawa Tengah. (2023). *Laporan Pemetaan Kompetensi Guru Fiqih MI se-Jawa Tengah*. Semarang.
- Dinas Pendidikan Jawa Timur. (2023). *Laporan Kompetensi Guru Fiqih MI*. Surabaya.
- Faqihuddin, A., Firmansyah, M. I., & Muflih, A. (2024). Multisensory Approach in Memorizing the Al-Quran for Early Childhood : Integration of the Tradition of Memorizing the Al-Quran with Digital Technology. *Al-Ishlah: Jurnal Pendidikan*, 16(2), 1289–1302. <https://doi.org/10.35445/alishlah.v16i2.5326>
- Fatimah, A., & Nurhayati, D. (2022). Integrating Islamic Values in Menstrual Education: A Participatory Action Research in Indonesian Madrasah. *International Journal of Educational Research*.
- Fikri, M. T., & Soraya, N. N. (2024). The Effectiveness of Interactive Media Brainsmart Games at Logical Thinking Ability of Children Age. *Al Hikmah: Indonesian Journal Of Early Childhood Islamic Education*, 8(2), 447–455.
- Firdaus, U. R., & Prasetyo, S. (2025). Effectiveness of Using Interactive Multimedia For Early Childhood Learning. *Jurnal AUDHI Vol.*, 07(02), 102–112.
- Fitri, H. U., Putra, B. J., & Anggraini, C. L. (2022). Implementasi Bimbingan Kelompok Berbantuan Media Video untuk Mengurangi Kecemasan Menarche Remaja. *Bulletin of Counseling and Psychotherapy*, 4(2), 403–409.
- Handoyo, E., & Waluyo, E. (2026). The Effectiveness of Child-Friendly Media on the Reading Interest and Ability of Elementary School Students. *Paedagogia*, 29(1), 78–87. <https://doi.org/10.20961/paedagogia.v29i1.112300>
- Hanikah, H., Faiz, A., Nurhabibah, P., & Wardani, M. A. (2022). Penggunaan Media Interaktif Berbasis Ebook di Sekolah Dasar. *Jurnal Basicedu*, 6(4), 7352–7359. <https://doi.org/10.31004/basicedu.v6i4.3503>
- Harahap, L. H. (2023). Problematika Pembelajaran Materi Pendidikan Agama Islam di Madrasah. *Journal of Islamic Education El ...*, 2(2), 93–100. Retrieved from <http://journal.marwah-madani-riau.id/index.php/JIEE/article/view/47%0Ahttp://journal.marwah-madani-riau.id/index.php/JIEE/article/download/47/43>
- Indahsari, T. N., Wicaksono, D., & Adriana, N. P. (2023). Keefektifan Media Tik-Tok terhadap

- Peningkatan Pengetahuan dan Sikap tentang Personal Hygiene (Menstruasi) pada Remaja Putri. *Jurnal Kesehatan Tambusai*, 4(3).
- Malinda, N. T., Damajanti, M. N., & Muljosumarto, C. (2017). Perancangan Buku Interaktif tentang Menstruasi Pertama untuk Anak Perempuan Usia 9-12 Tahun. *Jurnal DKV Adiwarna*, 6(2).
- Mayer, R.E. (2021). *Multimedia Learning* (3rd ed.). United Kingdom: Cambridge University Press.
- Mayer, Richard E. (2021). *Multimedia learning* (Vol. 41). Cambridge University Press.
- Ningsih Fadhilah, Mulawarman, P. K. M. (2024). Comprehensive Sexuality Education Program For Elementary School Children. *Marwah: Jurnal Perempuan, Agama Dan Jender*, 23(2), 188–208.
- Nurhasnawati, Sawaluddin, A. H. (2025). The Concept Of Educator Character: A Theo Legalistic Study Based On The Qur'ón, Hadith, And Indonesian National Education Law. *Hamdard Islamicus*, 48(3), 35–60.
- Nurkasanah, A., & Fathurahman, M. (2023). Upaya Guru Dalam Meningkatkan Pemahaman Fiqih Wanita Pada Materi Haid Bagi Siswi Kelas 4 MI Bahrul Ulum Buluh Krandegan Kebonsari Madiun. *Al Thifl*, 2(2), 142–151.
- Piaget, J. (1954a). *The Construction of Reality in the Child*. New York: Basic Books.
- Piaget, J. (1954b). *The Construction of reality inThe Child*. New York: Basic Books.
- Piaget, J. dan B. W. (2000). *The psychology of the child.No Title*. Presss Universitaires de France.
- Rahmawati, R., & Mayar, F. (2023). Multimedia Interaktif untuk Meningkatkan Kemampuan Pengukuran Anak Usia Dini. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 7(4), 4673–4681. <https://doi.org/10.31004/obsesi.v7i4.5245>
- Sawaluddin, Imran Rido, Koiy Sahbudin Harahap, S. H. (2024). Strategi Guru Agama Islam Dalam Membentuk Karakter Anak Teori dan Aplikasi dalam Kurikulum Merdeka. In *Kencana* (Vol. 11). Retrieved from http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI
- Sawaluddin, Koiy Sahbudin Harahap, Imran Rido, I. A. S. (2022). The Islamization of Science and Its Consequences: An Examination of Ismail Raji Al-Faruqi ' s Ideas Europeans seized the opportunity and attained the golden peak previously held by Islam . 3 realized how backward Islamic Civilization was and aspired to r. *Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies)*, 10(2), 115–128.
- Sawaluddin, Koiy Syahbudin, Imran Rido, S. R. (2022). Creativity on Student Learning Outcomes in Al-Quran Hadith Subjects. *Journal of Innovation in Educational and Cultural Research*, 3(2), 257–263. <https://doi.org/10.46843/jiecr.v3i2.106>
- Shams, L., & Seitz, A. R. (2008). Benefits of multisensory learning. *Cel Press*, XXX(X), 1–7. <https://doi.org/10.1016/j.tics.2008.07.006>
- Sirajulhuda, M. H. (2017). Konsep Fikih Ikhtilaf Yusuf al-Qaradhawi. *Jurnal TSAQAFAH*, 13(2), 255–278.
- Sweller, J. (2204). Cognitive Load during Problem Solving: Effects on Learning. *Cognitive Science*, 257–285.
- Thiagarajan, Semmel, & Semmel. (1974). Thiagarajan, Sivasailam; And Others Instructional Development for Training Teachers of Exceptional Children: A Sourcebook. Indiana Univ., Bloomington. Center for Innovation in. *Research and Development*, (Mc).
- Tim Peneliti UIN Walisongo. (2022). *Analisis Pemahaman Fikih Taharah pada Siswi MI di Jawa Tengah*. Semarang.
- Us, H., Afandi, N. K., & Z, E. M. (2023). Multimedia Interaktif Pendidikan Anak Usia Dini. *Jurnal Mahasiswa TARBAWI: Journal on Islamic Education*, 7(2), 210–217.
- Vygotsky, L. . (1978). *Mind in Society* (Cambridge). Harvard University Press.
- Winnuly, Ida Latifatul Umroh, A. Z. U. (2026). Inovasi Media Hijaiyah Letters Multisensori Game Untuk Anak Usia Dini. *Al-Fakkaar: Jurnal Pendidikan Bahasa Arab*, 7(1), 1–157.

- Yusrina, J. A., Niswah, N., & Rubai. (2024). Golok-Golok Menthok: Exploring the Relationship of Religion and Culture in Transmitting Gender Equality Values. *Progress: Wahana Kreativitas Dan Intelektualitas*, 12(2), 137–150.
- Yusuf Al-Qaradhawi. (2022). *Perkembangan Fiqh Islam Antara Statis dan Dinamis*.
- Yusuf al-Qardawi. (2001). *Fiqh al-Thaharah*. Kairo: Maktabah Wahbah.
- Zamsiswaya, Sawaluddin, B. S. (2024). Model Pengembangan 4D (Define , Design , Develop , dan Disseminate) dalam Pembelajaran Pendidikan Islam. *Journal of Islamic Education El Madani*, 4(1), 11–19.

