Need Analysis for Android-Based Interactive Media on Menstruation Material in Islamic Religious Education at SD Negeri 1 Gebang

Yuvita Nila Rahayu[1] , Mashudi[2], Abd Muhith[3]
[123]UIN Kiai Haji Achmad Siddiq Jember, Indonesia
E-mail: Yuvitauinkhasjember@gmail.com[1], Mashudi@uinkhas.ac.id[2], abdmuhith1972@gmail.com[3]

Abstract

Menstruation material in Islamic Religious Education (IRE) at the elementary school level is often considered sensitive and receives limited instructional attention. This study aims to analyze the need for Android-based interactive learning media to support the teaching of menstruation material in IRE for fourth-grade students at SD Negeri 1 Gebang. The research employed a qualitative descriptive approach with a case study design. Data were collected through interviews, classroom observations, and documentation involving one IRE teacher, twelve female students, and the school principal. Data analysis was conducted using data reduction, data display, and conclusion drawing techniques. The findings indicate that teachers experience difficulties in delivering menstruation material due to cultural sensitivity and the lack of appropriate digital teaching media. Female students demonstrate limited prior knowledge, emotional discomfort, and confusion regarding religious rulings related to menstruation, while showing high familiarity with Android devices. The study concludes that there is a clear need for Android-based interactive learning media that present menstruation material in a modest, engaging, and religiously appropriate manner to support effective Islamic Religious Education at the elementary level.

Keywords: Islamic Religious Education; Android-Based Media; Menstruation; Need Analysis; Interactive Learning.

Abstrak

Materi haid dalam Pendidikan Agama Islam (PAI) di sekolah dasar masih dipandang sebagai topik sensitif sehingga penyampaiannya cenderung terbatas. Penelitian ini bertujuan untuk menganalisis kebutuhan media pembelajaran interaktif berbasis Android dalam pembelajaran materi haid pada siswa kelas IV di SD Negeri 1 Gebang. Penelitian menggunakan pendekatan kualitatif deskriptif dengan desain studi kasus. Pengumpulan data dilakukan melalui wawancara, observasi pembelajaran, dan dokumentasi yang melibatkan satu guru PAI, dua belas siswi kelas IV, dan kepala sekolah. Analisis data dilakukan melalui tahap reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa guru mengalami kendala dalam menyampaikan materi haid karena faktor sensitivitas budaya dan keterbatasan media pembelajaran digital. Sementara itu, siswi memiliki pengetahuan awal yang terbatas, rasa malu, serta kebingungan terkait ketentuan

ibadah selama haid, meskipun sudah terbiasa menggunakan perangkat Android. Penelitian ini menyimpulkan bahwa media pembelajaran interaktif berbasis Android dibutuhkan untuk menyajikan materi haid secara sopan, menarik, dan sesuai dengan nilai-nilai Islam dalam pembelajaran PAI di sekolah dasar.
Kata kunci: *Pendidikan Agama Islam; Media Berbasis Android; Haid; Analisis Kebutuhan; Pembelajaran Interaktif.*

INTRODUCTION

In the digital era, education has entered a transformative phase where the integration of technology into the learning process is no longer an option but a necessity. This paradigm shift has also influenced Islamic Religious Education (IRE), which traditionally emphasizes the internalization of values, moral understanding, and religious practice through conventional face-to-face methods (Annalisa Sonaria Hasibuan et al., 2024). The emergence of mobile learning and interactive digital platforms has opened up new possibilities for delivering sensitive and complex religious topics, such as menstruation (haid), in a more engaging, accessible, and age-appropriate manner (Muthoharoh & Widiyawati, 2018). At the elementary school level, especially for female students in grade IV who are approaching puberty, menstruation becomes an essential topic in Islamic learning since it relates directly to personal hygiene, worship obligations, and understanding of one's own physiological development. However, despite the importance of this material, it remains inadequately addressed in classroom practice, often constrained by cultural taboos, teacher discomfort, and lack of appropriate instructional media.

In many Indonesian schools, including SD Negeri 1 Gebang, teachers of Islamic Religious Education still rely heavily on traditional methods such as lectures and textbook reading. These methods tend to be teacher-centered and limit students' opportunities to actively engage with the content. When it comes to teaching menstruation, this approach often results in passive learning and superficial understanding (Umniyati et al., 2025). Teachers frequently experience hesitation in discussing menstruation openly due to socio-cultural sensitivities and fear of violating norms of modesty. Consequently, students, particularly girls, are left with fragmented or inaccurate knowledge, depending largely on informal sources such as peers or social media. This situation reflects a broader educational challenge in Indonesia where topics related to puberty, reproductive health, and bodily awareness are often marginalized within the curriculum, even though they are crucial for

fostering self-awareness and moral development consistent with Islamic teachings (Kholifah, 2018).

The discrepancy between the expected learning outcomes and the actual learning conditions demonstrates a clear educational gap. Ideally, Islamic Religious Education should serve as a platform not only for spiritual and moral growth but also for equipping students with practical life knowledge aligned with religious values. The material on menstruation, as part of *fiqh al-nisā'*, aims to guide young girls in understanding the natural changes in their bodies, maintaining cleanliness (*thaharah*), and fulfilling religious duties accordingly (Nasyalaras Paramita, 2023). Yet, the reality in many elementary schools reveals that the instructional delivery fails to accommodate students' needs for interactive, engaging, and psychologically safe learning experiences. The lack of media that can visualize concepts, simulate real-life situations, and encourage independent exploration has become a major barrier to effective learning.

Technological innovation offers a potential solution to bridge this gap. The widespread use of Android-based devices among students and teachers provides an opportunity to develop interactive media that supports the teaching of sensitive religious content in a more contextualized and student-friendly way (Koban et al., 2023). Android-based learning media can present menstruation material using animations, simulations, and quizzes, thereby making abstract or awkward concepts easier to understand (Aryanti, 2020). Moreover, digital interactivity allows learners to engage privately and autonomously, reducing feelings of embarrassment while still receiving accurate and religiously appropriate guidance. In the context of SD Negeri 1 Gebang, where digital literacy among teachers and students is progressively increasing, such innovation could transform the classroom dynamic, turning a once passive and awkward learning process into an enjoyable and meaningful educational experience.

Several previous studies have highlighted the effectiveness of interactive digital media in enhancing students' engagement and comprehension in Islamic learning. For instance, research by (Khasanah & Rusman, 2021)demonstrated that mobile-based Islamic learning applications improve students' motivation and retention in studying *fiqh* topics. Similarly, a study by (Hidayat, 2024) found that digital religious media could reduce students' misconceptions about ritual purity and worship practices. In another study, (Ramadhan et al., 2023) emphasized that Android-based applications promote independent learning and make sensitive materials, such as puberty and cleanliness, more approachable

for elementary students. These findings collectively underscore the relevance of digital media in modern religious pedagogy. However, most of these studies focus on general *fiqh* topics such as prayer, ablution, or zakat, while only a few address gender-specific issues like menstruation. This indicates a research gap that needs to be explored further.

The teaching of menstruation in Islamic education is a unique domain where pedagogical, psychological, and cultural factors intersect (Mutmainah & Mufid, 2018). On the one hand, it involves scientific explanations related to biological processes; on the other hand, it requires the integration of religious rulings that govern a woman's acts of worship during menstruation. Presenting this dual aspect in a way that is comprehensible to fourth-grade students demands instructional creativity and culturally sensitive design. Unfortunately, existing teaching materials mainly textbooks often fail to represent these dimensions adequately (Abidin, 2021). They typically provide theoretical explanations without interactive features, visual aids, or opportunities for students to reflect on their experiences. As a result, learning outcomes remain limited to memorization rather than meaningful understanding. This shortcoming calls for the development of need-based educational innovations that consider the learners' developmental stage, cognitive readiness, and cultural context.

The need analysis phase becomes an essential step before designing or developing an educational media product. Conducting a systematic need analysis at SD Negeri 1 Gebang helps identify the specific challenges faced by both teachers and students in teaching and learning about menstruation. This includes understanding the teachers' instructional limitations, the students' prior knowledge and emotional readiness, and the school's technological infrastructure. By analyzing these aspects, educators can determine the types of media features such as animations, storytelling, or interactive quizzes that would best support the learning process. Moreover, the analysis can uncover how digital media might complement rather than replace traditional instruction, ensuring that Islamic values remain the foundation of the learning experience.

The transformation of Islamic Religious Education through Android-based interactive media also aligns with the broader educational policy directions in Indonesia. The Merdeka Belajar (Freedom to Learn) curriculum encourages contextual, student-centered, and technology-enhanced learning approaches (Stevani & Sucahyo, 2022). Integrating digital media into PAI lessons not only supports the development of digital literacy but also promotes character education by fostering responsibility, discipline, and self-awareness

qualities that are essential for Muslim girls transitioning into adolescence (Muafiah et al., 2022). Furthermore, the use of interactive media supports inclusive education, providing a safe and engaging space for students who may be too shy to ask questions in a traditional classroom setting.

Despite these potential benefits, there remains a scarcity of empirical research focusing on the specific needs and conditions for developing Android-based interactive media for menstruation material in Islamic Religious Education. This absence represents a critical research gap, particularly at the elementary level where foundational religious and moral values are formed. Existing literature tends to generalize digital learning media without addressing the nuanced needs of female students dealing with early puberty. Therefore, this study positions itself within this gap by exploring and documenting the actual needs of students, teachers, and learning environments related to the development of such media at SD Negeri 1 Gebang.

The state of the art of this research lies in its intersectional approach that combines technological innovation, Islamic pedagogy, and gender-sensitive education. While prior studies have separately discussed digital learning and Islamic education, few have integrated them within the specific context of menstruation education for young Muslim girls. This research advances the current body of knowledge by proposing an evidence-based foundation for designing Android-based interactive media tailored to the cultural and religious sensitivities of the topic. It also contributes practically by providing a reference for educators, curriculum developers, and instructional designers in implementing technology-enhanced Islamic education that remains faithful to *adab* (Islamic ethics) and pedagogical appropriateness.

Therefore, the main objective of this study is to analyze the needs for developing Android-based interactive learning media to support the teaching of menstruation material in Islamic Religious Education for fourth-grade students at SD Negeri 1 Gebang. Specifically, the study seeks to identify (1) students' learning needs and characteristics in understanding menstruation from both cognitive and emotional perspectives; (2) teachers' needs and challenges in delivering menstruation-related content effectively and appropriately; and (3) the technological and pedagogical requirements necessary to design suitable Android-based interactive learning media. Through this analysis, the study aims to provide a comprehensive understanding that will serve as the groundwork for developing an innovative, culturally responsive, and pedagogically sound media product capable of transforming Islamic

Religious Education into a more meaningful, engaging, and contextually relevant learning experience for young Muslim girls.

RESEARCH METHOD

This study employed a qualitative research approach using a descriptive case study design. The qualitative approach was selected to explore in depth the learning conditions, challenges, and needs related to menstruation material in Islamic Religious Education (IRE). This approach allows for a comprehensive understanding of participants' experiences and perspectives within their natural educational context.

A descriptive case study design was chosen because the research focused on a specific setting, namely SD Negeri 1 Gebang. The study aimed to describe existing instructional practices, identify constraints in teaching menstruation material, and analyze the need for Android-based interactive learning media without manipulating variables. The findings are presented as contextual descriptions that serve as a foundation for future instructional media development. The research was conducted at SD Negeri 1 Gebang, a public elementary school selected purposively due to its adequate digital infrastructure and the absence of specific interactive media for teaching menstruation in IRE. The school represents a typical primary education context where religious instruction is integrated with general learning.

Participants consisted of one Islamic Religious Education (IRE) teacher for grade IV, twelve female students in grade IV, and the school principal. The teacher provided information regarding instructional strategies and challenges, the students represented learners approaching puberty, and the principal contributed institutional and policy-related perspectives. Participants were selected using purposive sampling to ensure relevance to the research objectives.

In this qualitative study the researcher served as the primary instrument for data collection and analysis. The researcher acted as a non-participant observer during classroom activities and conducted interviews with participants to obtain in-depth information regarding learning experiences and instructional needs.To minimize subjectivity the researcher applied reflexivity throughout the research process by documenting observations, maintaining reflective notes, and cross-checking data from multiple sources. This approach helped ensure that interpretations were grounded in empirical data rather than personal assumptions.

Ethical principles were strictly observed throughout the research process. Prior to data collection, permission was obtained from the school authorities, and informed consent was

secured from teachers, students, and students' parents. Participants were informed about the research objectives, procedures, and their right to withdraw at any stage. Confidentiality and anonymity were maintained by using codes instead of real names in all data records and publications. The study involved no physical or psychological risks, and all research procedures complied with ethical standards for educational research involving minors.

Data were collected using three techniques: observation, interviews, and documentation. Classroom observations were conducted to examine teaching practices, student engagement, and learning media used during IRE lessons. Observations were recorded using structured field notes. Semi-structured interviews were conducted with the IRE teacher, female students, and the school principal. The interviews focused on instructional challenges, students' emotional responses, learning preferences, and expectations for digital media. Relevant documents such as lesson plans, textbooks, and curriculum guidelines were also analyzed to support and triangulate the findings.

Data analysis followed the interactive model proposed by Miles and Huberman, consisting of data reduction, data display, and conclusion drawing. During data reduction, interview transcripts and observation notes were coded and categorized based on emerging themes related to learning needs and instructional constraints. The organized data were then displayed in the form of tables and narrative summaries to identify patterns and relationships. Conclusions were drawn through continuous comparison and verification of data across sources to ensure credibility and consistency of findings.

The trustworthiness of the data was ensured through credibility, transferability, dependability, and confirmability. Credibility was established through data triangulation and member checking. Transferability was supported by providing clear descriptions of the research context and participants. Dependability was maintained through systematic documentation of research procedures, while confirmability was ensured by maintaining an audit trail of data analysis and researcher reflections. These strategies enhanced the reliability and validity of the research findings.

RESULT AND DISCUSSION
Overview of Data Collection

Data collection was conducted for four weeks through interviews, observations, and documentation at *SD Negeri 1 Gebang*. Participants included one Islamic Religious Education (IRE) teacher, twelve female students from grade IV, and the school principal.

The data were transcribed and analyzed using Miles and Huberman's model consisting of data reduction, data display, and conclusion drawing. The results are presented according to the three main objectives of this study.

Students' Learning Needs in Understanding Menstruation Material

Table 1.

Students' Needs and Characteristics

No	Theme	Key Findings	Supporting Data (Interview & Observation)
1	**Prior Knowledge**	Most students have very limited knowledge about menstruation; some associate it only with "blood" or "unclean condition."	"I only know it means when girls grow up and cannot pray," (Student 4).
2	**Emotional Readiness**	Students show curiosity but also embarrassment when the topic is discussed publicly.	Observation notes: Some students lowered their heads and laughed shyly during class discussion.
3	**Learning Preference**	Students prefer private, visual, and interactive ways to learn about sensitive topics.	"If there are pictures or games, maybe I will understand better," (Student 7).
4	**Digital Familiarity**	Almost all students use Android devices at home for games or watching videos.	"I often use my mom's phone to watch YouTube," (Student 2).
5	**Religious Understanding**	Students have confusion about religious rulings related to menstruation (e.g., prayer and fasting).	"Can I pray if I feel only a little blood?" (Student 5).

The data in Table 1 indicate that students' prior understanding of menstruation is minimal and fragmented. Their information mainly comes from peers or social media, not from formal instruction. This limited knowledge leads to misconceptions regarding religious practices during menstruation.

Emotionally, students demonstrate a combination of curiosity and discomfort, which reflects cultural taboos surrounding menstruation discussions. The observation showed that when the topic appeared in the textbook, some students giggled, avoided eye contact, or whispered among themselves.

Despite this, the majority of students expressed interest in learning through visual and interactive media, such as animations, quizzes, or stories, which they perceive as less intimidating. Furthermore, students' familiarity with Android devices suggests a strong potential for digital-based learning. Overall, these findings reveal that students need a safe, private, and engaging medium that can present menstruation material in an age-appropriate and religiously guided manner.

Teachers' Needs and Challenges in Delivering Menstruation Material

Table 2.

Teachers' Needs and Constraints

No	Theme	Key Findings	Supporting Data (Interview & Documentation)
1	**Instructional Challenges**	Teachers feel uncomfortable discussing menstruation in mixed-gender classes.	"I usually skip or only mention it briefly because the boys laugh," (IRE Teacher).
2	**Media Limitation**	No specific instructional media for menstruation; teachers rely on general *fiqh* textbooks.	Documentation: PAI textbook contains only ½ page on "Thaharah" for women.
3	**Pedagogical Gap**	Lack of training or pedagogical strategy to teach gender-sensitive topics.	"We were never trained to teach puberty topics using interactive methods," (IRE Teacher).
4	**Student Engagement**	Teachers observe low participation when menstruation material is discussed.	Observation: Teacher mostly lectures; students silent or distracted.
5	**Teacher Expectation**	Teachers hope for digital media that simplifies	"If there was a video or animation explaining it politely,

explanation and respects modesty norms.	it would help a lot," (IRE Teacher).

The findings above highlight that teachers face both pedagogical and cultural barriers in teaching menstruation within Islamic Religious Education. The primary difficulty lies in addressing a sensitive topic in a mixed classroom setting, where male students' reactions often make female students uncomfortable. Consequently, teachers tend to reduce the discussion or transfer responsibility to parents.

From a pedagogical standpoint, teachers lack specific media and methodological support. The textbooks currently used provide minimal coverage and no visual or interactive content, making the explanation abstract and less relatable. Teachers also report the absence of professional development opportunities related to gender-sensitive Islamic pedagogy.

Despite these constraints, teachers express strong motivation to use digital tools if they align with Islamic values. They expect Android-based media that can deliver content politely, clearly, and interactively, using visual metaphors or narrative simulations that avoid explicit imagery but still convey understanding. Thus, the teacher data confirm the need for technologically supported media that aids instruction while maintaining religious and cultural appropriateness.

Technological and Pedagogical Needs for Android-Based Interactive Media
Table 3.
Pedagogical and Technical Requirements

No	Category	Specific Need Identified	Source of Data
1	**Pedagogical Approach**	Contextual, narrative-based explanations that connect menstruation to Islamic concepts of purity (*thaharah*) and worship.	Teacher interview, documentation
2	**Media Format**	Android-based application accessible offline, featuring animation, voice narration, and quizzes.	Student & teacher interviews
3	**Content Sensitivity**	Visuals should be symbolic and modest; language must be polite and religiously appropriate.	Teacher interview

4	Learning Features	Menu for self-paced learning, short video tutorials, interactive Q&A, and mini-games for reinforcement.	Student interviews
5	Technological Readiness	Most students have access to Android smartphones at home; school has Wi-Fi for classroom use.	Principal interview
6	Integration with Curriculum	Media must align with PAI learning objectives on *thaharah* and moral education.	Documentation analysis
7	Evaluation Component	Embedded quizzes to assess comprehension and religious understanding.	Teacher interview

The data from Table 3 demonstrate that both teachers and students emphasize the need for Android-based interactive media that combine religious guidance with engaging learning experiences. Pedagogically, the media should support storytelling and contextual understanding rather than mere memorization of rules. For instance, narratives could depict relatable daily scenarios—such as a young girl preparing for prayer and noticing bodily changes—followed by guidance on appropriate religious actions.

Technologically, participants prefer an offline-accessible Android app, considering that internet connectivity in the school area is intermittent. Visual design must prioritize symbolic representation to ensure modesty while maintaining clarity, and the interface should be user-friendly for elementary students. Teachers recommend adding voice narration to aid comprehension for students with low reading ability.

Students also suggested the inclusion of interactive features such as mini-games or quizzes that reward correct answers, which they find motivating and enjoyable. Meanwhile, the principal emphasized that the school's infrastructure Wi-Fi access and digital literacy training supports the integration of such technology. Collectively, these findings confirm that SD Negeri 1 Gebang is pedagogically and technologically ready for innovation through Android-based interactive media tailored to the menstruation topic.

Discussion

The Importance of Menstruation Education in Islamic Religious Learning

The findings reveal that menstruation material is considered sensitive and often avoided in classroom discussions, particularly in primary Islamic education. Teachers at SD

Negeri 1 Gebang expressed hesitation when introducing the topic because of social taboos and limited teaching resources. Female students, meanwhile, showed curiosity yet confusion about menstrual health, indicating an urgent need for innovative and culturally appropriate media.

This aligns with (Nasyalaras Paramita, 2023) who noted that menstrual education in Islamic contexts tends to be overlooked due to cultural sensitivity and a lack of pedagogical tools that integrate scientific and religious perspectives. Their study emphasized the need for educational innovation that respects Islamic values while enhancing comprehension of *fiqh al-nisā'* (women's jurisprudence).

The present study confirms that an Android-based interactive medium can address these limitations by providing privacy, accessibility, and engagement for students. The digital format allows female learners to explore sensitive content independently, aligning with (Alief Fathul Habibie et al., 2023)who found that mobile-based applications foster self-paced learning, particularly in health and moral education.

Teachers' and Students' Need for Android-Based Media

The analysis of interviews and observations showed that both teachers and students highly expect a more interactive, contextual, and multimedia-rich platform to teach menstruation in Islamic Religious Education (IRE). Teachers acknowledged that traditional teaching methods lectures, textbooks, and oral explanations fail to attract attention or ensure understanding. Most students felt embarrassed to discuss menstruation directly with teachers, creating a communication gap.

This gap illustrates the contrast between the existing practice and ideal condition where ideally, menstruation education should empower students with religious and scientific literacy. The introduction of an Android-based interactive medium could thus bridge this pedagogical divide.

These findings resonate with (Aryanti, 2020) who reported that interactive learning media improve learning motivation and comprehension, especially for abstract or culturally sensitive topics. Similarly, (Ramadhan et al., 2023) emphasized that mobile-based Islamic learning tools promote inclusivity and reduce psychological barriers among learners when dealing with taboo subjects.

Therefore, this study reinforces the significance of designing educational media that combine digital interactivity and Islamic moral frameworks, providing a learning experience that is both pedagogically sound and ethically grounded.

The Role of Android-Based Interactive Media in Enhancing Engagement

The qualitative data reveal that students are more attracted to visual and game-based learning than to text-heavy content. During observations, researchers noted that digital elements such as animations, storytelling, and quizzes could stimulate engagement and emotional connection. Teachers believed that these elements not only improve learning outcomes but also help normalize discussions about menstruation in an age-appropriate manner.

This finding corresponds with (Hilda & Siswanto, 2021), who argued that gamified Islamic education media can increase motivation and participation, especially in moral and *fiqh* lessons. They observed that when technology integrates narrative and values-based learning, students become more receptive and reflective.

Additionally, (Yulia et al., 2022) in their ERIC-indexed article demonstrated that Android-based applications help bridge gender-sensitive learning by allowing female students to explore religious content autonomously. The interactive platform supports experiential learning, enabling students to visualize complex biological and spiritual concepts within a safe environment.

Hence, the current study affirms that the incorporation of multimedia elements including animations, sound, and interactivity within a digital Islamic education framework can serve as a transformational approach to addressing menstrual literacy among young Muslim girls.

Curriculum and Pedagogical Alignment

Findings also revealed that teachers often find difficulties integrating menstruation material into the Kurikulum Merdeka framework for Islamic Religious Education (IRE). Although menstruation topics are included under *Fiqh of Purity (Thaharah)*, there are no detailed guidelines or visual resources provided. As a result, educators tend to skip or minimize the discussion, leaving students without essential understanding about their physiological and religious obligations during menstruation.

This reflects what (Dewi et al., 2024) describe as the "pedagogical silence" in Islamic education where teachers avoid sensitive topics to maintain classroom decorum. However, such avoidance risks perpetuating misinformation and anxiety among young girls.

The proposed Android-based media can therefore function as a curriculum-supportive tool that simplifies complex content and encourages teacher facilitation rather than mere instruction. The digital media also aligns with the technological pedagogical content knowledge (TPACK) model, which emphasizes the integration of technology to support subject matter understanding.

Comparatively, (Saputri & Wahyuni, 2024) found that using Android-based interactive modules in Islamic subjects significantly improved students' understanding of *fiqh al-ibadah*, as technology facilitated active learning and contextualized abstract theological concepts. In this study, similar potential is observed in the context of *fiqh al-haydh* (menstruation law), showing that technological adaptation can modernize Islamic education without compromising its theological integrity.

Addressing Research Gaps in Islamic Digital Pedagogy

A notable contribution of this study lies in addressing the research gap regarding menstrual education within Islamic pedagogy, particularly at the primary level. Previous research largely focused on adolescent reproductive education in health or science contexts, with minimal integration of religious perspectives. The present study fills this void by emphasizing the necessity of religiously contextualized digital media that respects cultural and moral sensitivities while promoting accurate scientific knowledge.

As (Irfanuddin et al., 2025) state, Islamic digital pedagogy remains underdeveloped in addressing gender-specific topics such as menstruation. This research expands the discourse by merging digital innovation, Islamic jurisprudence, and gender-sensitive education in one framework.

Moreover, this study highlights that media development should begin with a thorough need analysis a step often neglected in educational innovation.. In this case, teachers' pedagogical challenges and students' emotional readiness form the foundation for developing relevant Android-based interactive tools. Thus, this study not only identifies the gap but also provides empirical grounding for future media design, ensuring that technology integration in Islamic education remains need-based, inclusive, and transformative.

Implications for Future Development and Practice

The study provides several practical implications. First, it underscores the importance of teacher training in digital pedagogy, particularly for handling sensitive topics like menstruation within Islamic education. Teachers should be equipped not only with digital skills but also with gender-sensitive communication strategies.

Second, it suggests that the development of Android-based media should involve collaborative design, incorporating input from Islamic scholars, educators, and psychologists to ensure both religious validity and psychological appropriateness.

Finally, the use of Android-based interactive media supports the UNESCO framework on comprehensive sexuality education, which emphasizes age-appropriate, culturally relevant, and value-based learning. This approach resonates with Islamic educational ethics, where modesty (*haya'*) and knowledge (*'ilm*) coexist harmoniously. By transforming Islamic Religious Learning through Android-based media, this study offers a prototype for digital Islamic pedagogy that bridges tradition and technology — a necessary transformation for the 21st-century learning environment.

CONSLUSION

The present study concludes that menstruation education within Islamic Religious Learning at SD Negeri 1 Gebang remains limited due to cultural taboos, inadequate teaching materials, and low teacher confidence in addressing sensitive topics. The need analysis demonstrates a strong demand from both teachers and students for Android-based interactive learning media that can present menstruation material in a private, engaging, and religiously appropriate way. Such digital innovation is essential for transforming Islamic Religious Learning into a more inclusive, modern, and learner-centered experience. The integration of visuals, interactivity, and gamified elements can enhance students' understanding and comfort in learning about *fiqh al-haydh* (menstruation law) while maintaining Islamic values of modesty and respect. This research fills a gap in Islamic digital pedagogy, emphasizing that menstrual education should be delivered through technology that aligns with Islamic ethics and students' developmental needs. Therefore, future efforts should focus on developing and testing Android-based prototypes, training teachers in digital pedagogy, and promoting gender-sensitive education within Islamic schools. In essence, the transformation of Islamic Religious Learning through Android-based media represents not only a pedagogical shift but

also a moral responsibility to prepare young Muslim girls with the right knowledge, confidence, and faith-based understanding of their natural biological changes.

REFERENCES

Abidin, A. Z. (2021). Nilai-Nilai Moderasi Beragama Dalam Permendikbud No. 37 Tahun 2018. *JIRA: Jurnal Inovasi Dan Riset Akademik*, *2*(5), 729–736. https://doi.org/10.47387/jira.v2i5.135

Alief Fathul Habibie, Fachira Nur Sahfitri, & Welia Desera Mandalika. (2023). Media Pembelajaran Interaktif "Batik Pedia" Berbasis Aplikasi Android Pada Ensiklopedia Batik Nusantara. *Jurnal Komputer Teknologi Informasi Sistem Komputer*, *2*(2), 326–338.

Annalisa Sonaria Hasibuan, Andi Supriadi Chan, Rezha Destiadi, & Gabriel Ardi Hutagalung. (2024). Implementasi Taman Iqra Digital Berbasis Augmented Reality Pada Johor Islamic Green School. *J-COSCIS : Journal of Computer Science Community Service*, *4*(1), 83–91. https://doi.org/10.31849/jcoscis.v4i1.17029

Aryanti, R. (2020). Development of Interactive Multimedia Using Powerpoint Applications Combined With Ispring Suite Application. *Proceedings of the Sixth Padang International Conference On Economics Education, Economics Business and Management, Accounting and Entrepreneurship (PICEEBA 2020)*, *179*(Piceeba 2020), 325–330. https://www.atlantis-press.com/proceedings/piceeba-20/125957788

Cresswell, J. W. (2016). *Research Design Pendekatan Metode Kuaalitatif, Kuantitatif, dan Campuran* (Edisi Keem). Pustaka Pelajar.

Dewi, S., Zamroni, M. A., & Leksono, A. A. (2024). Penanaman Sikap Moderasi Beragama Pada Siswa Sekolah Dasar Melalui Pembelajaran PAI. *Irsyaduna: Jurnal Studi Kemahasiswaaan*, *4*(1), 1–15. https://doi.org/10.54437/irsyaduna.v4i1.1558

Hidayat, L. P. R. (2024). Pengembangan Modul Pembelajaran Berbasis ARCS (Attention, Relevance, Confidence, Satisfaction) Materi Keberagaman pada Mata Pelajaran Pendidikan Agama Islam dan Budi Pekerti Kelas IV Sekolah Dasar. *Jurnal Pendidikan*, *4*(5), 8551–8569. https://doi.org/10.31004/innovative.v4i5.15598

Hilda, A. M., & Siswanto, R. D. (2021). Android Application Development: Permutation of the Same Elements Based on Realistic Mathematics Education. *Mathematics Teaching-Research Journal*, *13*(4), 170–180.

Irfanuddin, F., Selamat, S., & Widodo, H. (2025). Analisis Implementasi Pembelajaran Mendalam (Deep Learning) dalam Kurikulum PAI di SD Negeri 125 Ogan Komering Ulu Sumatera Selatan. *Jurnal Pendidikan Dan Pembelajaran Indonesia (JPPI)*, *5*(3), 1566–1576. https://doi.org/10.53299/jppi.v5i3.1798

Khasanah, K., & Rusman, R. (2021). Development of Learning Media Based on Smart Apps Creator. *AL-ISHLAH: Jurnal Pendidikan*, *13*(2), 1006–1016. https://doi.org/10.35445/alishlah.v13i2.549

Kholifah, A. (2018). Gambaran Tingkat Stres Pada Anak Usia Sekolah Menghadapi Menstruasi Pertama (Menarche) di SDN Gegerkalong Girang 2. *Jurnal Pendidikan Keperawatan Indonesia*, *1*(2), 125. https://doi.org/10.17509/jpki.v1i2.9751

Koban, G. H. S., Sari, B. P., & Maure, O. P. (2023). Pengembangan Media Pembelajaran Matematika Berbasis Autoplay Media Studio 8.5 dengan Pendekatan Etnomatematika. *HISTOGRAM: Jurnal Pendidikan Matematika*, *7*(1), 28–43.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook (2nd ed.).* Sage publications.

Muafiah, E., Mayasari, L. D., & Agustina, U. W. (2022). Women and Networking Authority in Boarding School: the Background and Life History Perspective. *Kodifikasia*, *16*(2), 189–204. https://doi.org/10.21154/kodifikasia.v16i2.5327

Muthoharoh, S., & Widiyawati, R. (2018). Pengaruh Health Education Terhadap Perilaku Vulva Hygiene Saat Menstruasi Anak Sd Umur 11 Â€" 13 Tahun Di Sdn Mojosari Kabupaten Mojokerto. *Nurse and Health: Jurnal Keperawatan*, *7*(1), 61–70. https://doi.org/10.36720/nhjk.v7i1.34

Mutmainah, H., & Mufid, M. (2018). Upaya Guru Pai Dalam Peningkatan Kecerdasan Emosional Dan Spiritual Peserta Didik Di Sman 1 Bojonegoro. *At-Tuhfah*, *7*(1), 80–95. https://doi.org/10.36840/jurnalstudikeislaman.v7i1.118

Nasyalaras Paramita, F. N. K. A. D. S. D. (2023). Gambaran Pengalaman Anak Perempuan Dalam Menghadapi Menarche Di Sd Muhammadiyah Wedi. *The 2nd Conference Of Health And Social Humaniora*, 17–25.

Ramadhan, F. A., Muhith, A., Usriyah, L., Islam, U., Kiai, N., Achmad, H., & Jember, S. (2023). *EDUHUMANIORA : Jurnal Pendidikan Dasar Design of Electronic-Based Handout Teaching Materials with Problem-Based Learning Nuances in Learning Mathematics*. *15*(2), 121–134.

Saputri, W. A., & Wahyuni, S. (2024). *Development Study : Ethnomathematics-Based*. *9*(May), 381–402.

Stevani, F., & Sucahyo, I. (2022). Development of Android-Based Learning Media Using Microsoft Powerpoint Integrated Ispring Suite on Class X's Work and Energy Materials. *Prisma Sains : Jurnal Pengkajian Ilmu Dan Pembelajaran Matematika Dan IPA IKIP Mataram*, *10*(3), 688. https://doi.org/10.33394/j-ps.v10i3.5422

Umniyati, H., Mujib, S. M., & Hendrawan, R. (2025). *Pelatihan Manajemen Kebersihan Menstruasi*. *6*(1), 624–630.

Yulia, R., Susanti, E., & Rizal, R. (2022). Pengembangan Multimedia Interaktif Berbasis Android Pada Materi Elastisitas Bahan untuk SMA Kelas XI. *Jurnal Eksakta Pendidikan (Jep)*, *6*(1), 1–10. https://doi.org/10.24036/jep/vol6-iss1/664