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Developing the Wonderful Digital Machine (WDM) Android Application for Local Wisdom-Based Islamic Learning in Banten

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Abstract

This study aimed to develop the Wonderful Digital Machine (WDM) Android application as a local-wisdom-based Islamic learning medium for students at Islamic Higher Education Institutions (PTKI) in Banten Province. It was motivated by the limited relevance of conventional learning media to the characteristics of digital-native learners. The study employed a Research and Development (R&D) approach based on the Hannafin and Peck model, which comprises needs analysis, design, development, and implementation stages. Data were collected through observations, interviews, questionnaires, and tests, and analyzed qualitatively and quantitatively, with validity, reliability, practicality, and effectiveness assessed. The findings indicate that the WDM application is highly feasible, as shown by strong validation scores from subject-matter, language, and media experts. The effectiveness test involving 86 students showed a significant improvement in learning outcomes, with the mean pretest score increasing from 63.02 to 91.86 on the posttest. Wilcoxon analysis yielded $Z = -8.113$, $p < .001$, confirming a statistically significant difference after implementation. This study also proposes the Local Wisdom-Based Digital Learning Media Model (MPDKL), which emphasizes the integration of local wisdom, online and offline flexibility, interactive features aligned with digital-native characteristics, and contextual transformation of religious behavior. Thus, the WDM application is effective in improving students' learning outcomes while strengthening local wisdom values in Islamic higher education within a culturally relevant and technologically responsive learning environment for PTKI students.

Keywords: digital-native learners, Islamic higher education, Islamic learning media, local wisdom, WDM Android application

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A. Introduction

The development of digital technology has brought significant changes to education, particularly in learning media. The Strawberry Generation, as digital natives, is characterized by a familiarity with technology, thus requiring interactive, flexible, and digital-based learning media (Keristanti et al., 2025). However, the reality in the field shows that Islamic learning media in Islamic Religious Colleges (PTKI) are still dominated by conventional methods such as whiteboards and PowerPoint presentations, which are less interesting for students. (Riadi & Sumanto, 2025). This situation creates a gap between student needs and the availability of appropriate learning media. Therefore, the development of application-based digital media is an urgent need to improve learning effectiveness.

In addition to technological factors, Islamic education also requires strengthening cultural values appropriate to the local context. Local wisdom plays a crucial role in shaping students' character, as it encompasses moral, spiritual, and social values inherited from the community (De et al., 2025). Integrating local wisdom into learning not only enriches the material but also makes the learning process more meaningful. However, most digital media used in learning still emphasizes the technological aspects solely, without providing sufficient space for strengthening local culture (Ardillah, 2025). This shows a research gap in the development of Islamic learning media that combine technological innovation with local wisdom.

Previous studies have shown that the use of digital applications can increase learning effectiveness. Digital media contributes to improving student understanding, but has not yet emphasized cultural values (Shuter et al., 2016). On the other hand, post-COVID-19 pandemic learning innovation is important, but it still emphasizes the technological aspect without highlighting the context of local wisdom (Islam et al., 2024). This gap underscores the need to develop digital media that are not only practical and interactive but also culturally relevant.

The Banten region, as the research location, possesses a wealth of local wisdom closely linked to Islamic traditions. Values such as religiosity, togetherness, and respect for tradition are cultural assets that can be integrated into learning (Sholeh et al., 2025). Through this approach, learning media serve not only as a means of transferring knowledge but also as a vehicle for internalizing cultural values that strengthen students' identities. This aligns with national education policies that encourage character building based on cultural values and local wisdom (Hekmatyar et al., 2025).

Based on these conditions, this study aims to develop Islamic learning media based on local wisdom through the Wonderful Digital Machine (WDM) Android application for the Strawberry Generation at PTKI throughout Banten Province. This research aims to develop valid, practical, and effective learning media aligned with the characteristics of digital-native students, while also strengthening the values of local wisdom in Islamic learning in higher education. With these goals, this research is expected to help bridge the gap between educational technology development and the preservation of local culture in the digital era.

B. Literature Review

Learning media is defined as anything that can be used to convey messages in order to stimulate students' thoughts, attention, feelings, and interests, so that the learning process can take place more effectively (Anwar et al., 2022). Gagne refers to

media as stimuli originating from the student's environment, whereas Briggs & Leslie emphasize its role in facilitating learning (Kusum et al., 2023). Learning media is not just a tool; it also broadens the learning experience, increases motivation, facilitates understanding of abstract concepts, and enables flexible learning anytime, anywhere (Ali et al., 2024). The principles of media development are also influenced by cognitive theory and constructivism. Mayer & Moreno (2003) emphasize the importance of reducing cognitive load through effective multimedia design, while Piaget & Inhelder (2008) and Bandura (1977) emphasize active and social interaction in the learning process (Nurhayati et al., 2025).

The development of technology-based media must consider content suitability and students' needs. Moreno & Mayer (2007) emphasize the importance of multimodality, combining text, visuals, audio, and interactivity, to improve understanding (Riyanto, 2025). Development models such as Hannafin & Peck and ADDIE are often used because they are systematic and product-oriented (Rahayu, 2025). This principle is also in line with constructivism and social learning theories, which emphasize real experiences and collaboration.

The Strawberry Generation (born mid-1990s to early 2010s) is known as digital natives (Putri et al., 2024). They have high-tech skills, multitasking, fast access to information, and are used to learning through digital platforms (Effendy et al., 2024). Other characteristics include a short attention span and a high level of concern for social and environmental issues. Education for this generation must integrate technology, provide experiential learning, and prioritize emotional balance.

Local wisdom is also an important foundation in the development of Islamic learning media. According to Ahmar & Azzajjad (2024), local wisdom encompasses moral, spiritual, and cultural values that can strengthen students' identities. In Banten, values such as religiosity, Islamic boarding school traditions, and mutual cooperation can be integrated into learning to make it more contextual (Indramawan et al., 2024). Integration of local wisdom in learning media not only strengthens cultural identity, but also increases the relevance of the material to everyday life (Wijayanti, 2025).

Several studies have shown that digital learning media positively affect learning outcomes, student engagement, and digital literacy. Murtadho et al. (2023) show that the use of digital media can improve students' competencies in the digital era. Similar findings were also reported by Gyimah (2022) which emphasizes the importance of educational technology innovation in supporting post-pandemic learning. In addition, research by (Naveed et al., 2023) shows that mobile learning and digital-based applications are able to increase learning motivation and a more flexible learning experience, while Wastira et al. (2025) emphasized that the use of educational technology has a positive impact on student involvement in the learning process.

However, most of this research focuses on aspects of technology design, media effectiveness, and improving learning outcomes, while the integration of cultural values or local wisdom into digital media remains relatively limited. On the other hand, research on local wisdom-based education shows that local cultural values play a crucial role in shaping identity and character, and in making learning relevant to students' lives (Andrian & Kayyis, 2025; Setiahati & Mirna, 2026). Some researchers even recommend the need to develop learning media that are able to integrate digital innovation with local cultural values so that learning is not only oriented towards mastering technology, but also supports the preservation of cultural identity and

strengthens the character of students (Nafi'ah et al., 2025; Nur'aini et al., 2024). Therefore, there are still research opportunities to develop digital application-based Islamic learning media that integrate local wisdom as an integral part of the learning design.

C. Method

This study used a Research and Development (R&D) approach based on the Hannafin and Peck model, which consists of three main stages: needs assessment, design, development and implementation. This model was selected because it provides systematic procedures for producing valid, practical, and effective learning products.

In the needs assessment stage, observations, interviews, and focus group discussions (FGDs) were conducted with lecturers and students from several Islamic Higher Education Institutions (PTKI) in Banten Province to identify user needs for Islamic learning media. This stage aimed to obtain information on user characteristics, obstacles in using existing learning media, and features required in the application.

Based on the needs assessment, the Wonderful Digital Machine (WDM) Android application was developed as a local wisdom-based Islamic learning medium. The application contains Islamic learning materials integrated with the religious and cultural values of the Banten community, such as daily prayers, tajwid, tahlil traditions, and Islamic character-building materials. In addition, the application includes audio learning features, interactive quizzes, practice questions, and both online and offline access to support students' learning flexibility.

The research subjects were divided into several groups based on the research stages. The needs assessment stage involved lecturers and students who were purposively selected to participate in interviews and FGDs. The product validation stage involved six expert validators: two subject-matter experts, two language experts, and two media experts. The product implementation and evaluation stage involved 86 students as application users to test the product's practicality and effectiveness. The practicality test also involved four Islamic studies lecturers from the PTKI, where the research took place. Their involvement aimed to obtain assessments of the application's ease of use, efficiency, and suitability in supporting the learning process.

The research instruments included observation sheets, interview guidelines, validation questionnaires, practicality questionnaires, and learning outcome tests. Observations, interviews, and FGDs were used to obtain data on user needs. The validation questionnaire was used to assess the appropriateness of the application's content, language, and media aspects. The practicality questionnaire was administered to lecturers and student users to assess the application's ease of use, efficiency, and convenience. The validation and practicality questionnaires used a Likert-scale format to assess the feasibility, usability, and attractiveness of the WDM application. Pretests and posttests were used to measure the application's effectiveness in improving students' understanding of the learning material.

Data were analyzed using qualitative and quantitative descriptive approaches. Data from observations, interviews, FGDs, and validator input were analyzed qualitatively. Meanwhile, questionnaire data and test results were analyzed quantitatively using descriptive statistics. The effectiveness of the application was examined using a single-group pretest–posttest design by comparing students'

scores before and after using the WDM application. Because the normality test indicated that the data were not normally distributed, the Wilcoxon Signed-Rank Test was used to determine whether there was a statistically significant difference between students' pretest and posttest scores.

D. Results

The results of this study are presented in stages, focusing on the development of Islamic learning media based on local wisdom through the WDM Android application. The research findings include: (1) the results of the needs analysis, (2) the results of the application design, (3) the results of the feasibility test, and (4) the results of the effectiveness test.

1. Needs Analysis

The needs analysis phase was conducted through observations, interviews, and focus group discussions (FGDs) with students and lecturers from several Islamic Higher Education Institutions (PTKI) in Banten Province. The results indicated that most students needed interactive, practical learning media that suited the learning styles of the Strawberry Generation. Conventional media were considered less engaging, while Android-based applications were deemed more relevant because they could be accessed at any time.

Feedback from the student FGDs suggested that the application should be equipped with audio features for prayer recitations, interactive quizzes, and an offline mode to ensure it can still be used in areas with limited network connectivity. One student stated, "This application makes it easier for us to repeat prayer recitations and tajweed without having to carry a book. If we forget, we can just open it on our phones anytime" (FGD, July 12, 2024). Another student added, "The quizzes in the application are quite helpful, because after studying, there are questions immediately. So we know whether we understand or not."

Furthermore, the lecturer emphasized the importance of showcasing local wisdom, such as the tradition of tahlil, or prayers commonly practiced by the Bantenese people. According to one lecturer, "Islamic Religious Education students in Banten need media that is practical and appropriate to the local context. If it's just printed modules, they're less enthusiastic. But if there's an app that includes prayer recitations, tajwid, and even tahlil traditions according to the community, it will be more lively." (FGD, June 20, 2024). Thus, the FGD results demonstrate the urgent need for digital learning media based on local wisdom among Strawberry Generation students. The WDM application is expected to function not only as an academic medium but also as a means of strengthening daily Islamic practices.

Initial observations indicate that the Islamic education process at Islamic Higher Education Institutions (PTKI) remains dominated by conventional media, such as textbooks, printed modules, PowerPoint presentations, and lecturers' oral explanations. The use of application-based digital learning media remains very limited. Furthermore, students use smartphones more for communication and social media than as learning tools. These observational findings indicate a need for digital learning media that are more interactive, easily accessible, and appropriate to the characteristics of students accustomed to using mobile devices in their daily lives.

Table 1. Summary of Needs Analysis Results through FGDs and Interviews

No.	Data Source	Main Input/Findings	Implications for Application Development
1	PTKI Students	Conventional learning media (whiteboards and PowerPoint presentations) are considered less engaging and do not support the learning styles of digital natives.	The application should provide an interactive Android-based digital learning platform.
2	PTKI Students	The application should include audio features for prayer recitations and tajwid guidance.	Add audio features to strengthen the practical aspects of Islamic learning.
3	PTKI Students	Interactive quizzes following each learning topic help students assess their understanding more effectively.	Provide evaluation quiz menus for each topic.
4	PTKI Students	The application should be accessible offline to ensure usability in areas with limited internet connectivity.	Design the application with an offline mode.
5	PTKI Lecturers	Integration of local wisdom values is needed, such as traditional Banten Islamic practices and prayers (e.g., *tahlil* and *wirid*).	Incorporate Islamic learning content based on local wisdom.

Source: *Focus Group Discussion dan Wawancara* (2024)

2. Design and Application Development

The design phase was carried out following a needs analysis using the Hannafin & Peck model, resulting in the WDM Android application as a local-wisdom-based Islamic learning medium. This application consists of a simple and easy-to-understand main menu, Islamic materials combined with Bantenese cultural values such as daily prayers, tajwid, and the tahlil tradition, as well as interactive features in the form of quizzes and practice questions to measure student understanding. In addition, the application includes audiovisuals, such in prayer readings and moving text, to support independent learning. The application design pays attention to ease of navigation, visual appeal, and interactivity that are in accordance with the characteristics of digital-native students, so it is expected to be able to increase engagement and learning effectiveness.

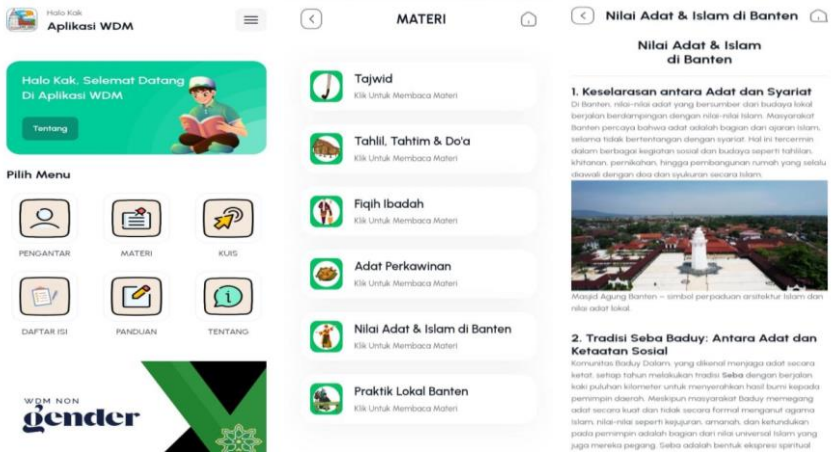

Figure 1. Main Menu and Learning Materials of the WDM Application

3. Feasibility Test

The feasibility test was conducted by validators who were experts in material, language, and media. The validation results showed that the WDM application received high scores in all aspects assessed. Material experts assessed the content as being in line with the Islamic curriculum, language experts assessed the use of communicative language, and media experts assessed the application design as attractive and interactive.

Table 2. Results of Expert Validation by Subject-Matter, Language, and Media Experts

No.	Assessment Aspect	Mean Score Obtained	Maximum Score	Percentage	Category
Subject Matter Expert Validation					
1	Content Feasibility	12.5	15	83%	Highly Feasible
2	Language Appropriateness	13.0	15	87%	Highly Feasible
3	Presentation	8.5	10	85%	Highly Feasible
4	Learning Approach	13.5	15	90%	Highly Feasible
5	Design	9.0	10	90%	Highly Feasible
Average		**56.5**	**65**	**87%**	**Highly Feasible**
Language Expert Validation					
1	Display/Aesthetic Aspect	27.0	30	90%	Highly Feasible
2	Presentation/Technical Aspect	40.0	45	89%	Highly Feasible
Average		**67.0**	**75**	**89%**	**Highly Feasible**
Media Expert Validation					
1	Attractiveness	14.0	15	93%	Highly Feasible
2	Language Appropriateness	13.5	15	90%	Highly Feasible
3	Presentation	12.5	15	83%	Highly Feasible
4	Usability	18.0	20	90%	Highly Feasible
Average		**58.0**	**65**	**89%**	**Highly Feasible**

Source: Processed Primary Data (2025)

Table 3. Results of the Practicality Test by Lecturers and Students

No.	Assessment Aspect	Mean Score Obtained	Maximum Score	Percentage	Category
Lecturers					
1	Ease of Use	17.50	20	88%	Highly Practical
2	Time and Access Efficiency	17.25	20	86%	Highly Practical
3	Display Comfort and Appearance	12.75	15	85%	Highly Practical
Average		**47.50**	**55**	**86%**	**Highly Practical**
1	Ease of Understanding	18.00	20	90%	Highly Practical
2	Clarity of Language and Text	19.25	20	96%	Highly Practical
3	Design	12.50	15	83%	Highly Practical
Average		**49.75**	**55**	**90%**	**Highly Practical**

Source: Processed Primary Data (2025)

4. Effectiveness Test

Before being used in data collection, the questionnaire and learning outcome test instruments were tested for validity and reliability. The validity test results showed that all instrument items had correlation coefficients greater than the r table value (0.1786) and significance values <0.05, so all items were declared valid. The reliability test using Cronbach's alpha yielded 0.946 for the WDM application questionnaire and 0.801 for the learning outcome test. These values are above the minimum limit of 0.70, so the instruments were declared reliable and suitable for use in research.

Table 4. Validity and Reliability Test Results

Instrument	Number of Items	Validity Test Results	Cronbach's Alpha	Description
WDM Application Questionnaire	10	All items were valid (r calculated > r table = 0.1786; $p < 0.05$)	0.946	Reliable
Learning Outcomes Test	10	All items were valid (r calculated > r table = 0.1786; $p < 0.05$)	0.801	Reliable

Source: Processed Primary Data (2025)

The effectiveness test was conducted on 86 students at four PTKI using a pretest and posttest. The results showed a significant increase from an average pretest score of 63.02 to 91.86 in the posttest. Analysis using the Wilcoxon test yielded a Z-value of -8.113 and a p-value of 0.000, indicating a significant difference between the before and after periods.

Table 5. Pretest–Posttest Test Results

Statistics			
		PRETEST	**POSSTEST**
N	**Valid**	86	86
	Missing	0	0
Mean		63.02	91.86
Median		70.00	100.00
Std. Deviation		18.283	13.934
Variance		334.282	194.145
Range		80	50
Minimum		20	50
Maximum		100	100

Source: Processed Primary Data (2025)

Table 6. Wilcoxon Signed-Rank Test Results

Test Statistics[a]	
	POSSTEST - *PRETEST*
Z	-8.113[b]
Asymp. Sig. (2-tailed)	.000
a. Wilcoxon Signed Ranks Test	
b. Based on negative ranks.	

Source: Processed Primary Data (2025)

5. Local Wisdom-Based Digital Learning Media Model (MPDKL)

Based on the needs analysis, application development, expert validation, practicality testing, and effectiveness testing, this study produced a Local Wisdom-Based Digital Learning Media Model (MPDKL). The model illustrates the relationship between input, process, implementation, and output in the development of local wisdom-based digital Islamic learning media.

As shown in Figure 2, the input component comprises digital technology via WDM applications, local values and wisdom, and the characteristics of digital-native students. These inputs are processed through the integration of local values, online and offline flexibility, digital interactivity, and contextual-transformative learning. The implementation of this process is expected to produce several learning outcomes, including improved cognitive outcomes, strengthened Islamic cultural identity, increased student independence and motivation to learn, and transformed religious attitudes and practices.

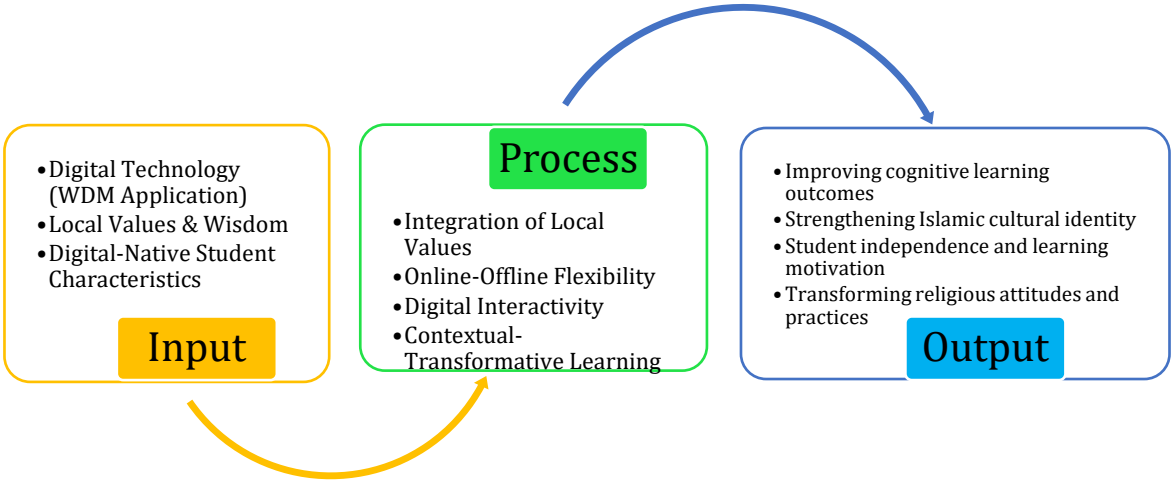

Figure 2. Local Wisdom-Based Digital Learning Media Model (MPDKL)

E. Discussion

The research results show that the WDM application is suitable and effective for use as an Islamic learning medium for digital-native PTKI students throughout Banten Province. The high validation scores from material, language, and media experts demonstrate that the application's content, presentation, and design meet learning standards. This aligns with Widahyu (2021), who emphasizes that learning media serves as an effective communication channel to increase learning motivation. Expert validation also proves that integrating local wisdom into Islamic content can enrich students' learning experiences and make learning more contextual.

One of the distinctive features of the WDM application is its presentation of Islamic material combined with the values of Banten's local wisdom. The application's content not only covers basic topics such as daily prayers, tajwid, and Islamic morals, but also incorporates Bantenese religious cultural practices, such as the tahlilan tradition, collective dhikr, and the recitation of the prayer of salvation. This material was chosen because it has an emotional and spiritual connection with students, making the learning process more contextual and meaningful. These findings align with Aini et al. (2026), who show that integrating local wisdom in Islamic religious education contributes to the formation of students' religious and cultural identities through learning closely connected to their social experiences. Furthermore, Karmini et al. (2024) explain that local wisdom-based learning helps students understand academic concepts by connecting them to familiar cultural contexts, thereby increasing the relevance and meaningfulness of learning.

In addition, the WDM application also displays various religious practices that are still maintained in the traditions of Islamic boarding schools and Banten society, such as wirid after congregational prayers, the use of local languages in certain prayers, and an introduction to the stories of charismatic Banten scholars. The integration of these cultural aspects not only functions as a means of preserving traditions, but also becomes a medium of connection between universal Islamic values and local practices that exist in society. These findings support Alfi et al. (2024), who confirm that the local wisdom of Islamic boarding schools in Banten plays a vital role in strengthening character education and Islamic identity among the younger generation. Similarly, Saleh et al. (2025) show that local wisdom-based

Islamic Religious Education can strengthen students' character and identity by internalizing cultural values that are embedded in society.

Thus, students not only learn religious material textually but also understand how Islamic values are implemented in their own socio-cultural context. The results of this study reinforce the view that integrating local wisdom into digital learning media can be an effective strategy for maintaining cultural sustainability while increasing the relevance of education amidst the development of digital technology. This finding aligns with Sukrin & Ihlas (2025), who emphasize that the ethnopedagogical approach and culture-based learning play an important role in strengthening cultural identity and student character, and in preserving local values in formal education.

The findings of this study confirm that the use of interactive digital media can significantly improve learning outcomes. The increase in average scores from pretest to posttest demonstrates that students more easily understand the material using Android-based applications designed to suit the characteristics of digital natives. These results are consistent with research (Murtadho et al., 2023) which demonstrates the effectiveness of digital media in increasing literacy and understanding, as well as strengthening views (Gyimah, 2022) on the importance of post-pandemic educational technology innovation. However, unlike previous research, this study incorporates local wisdom as an integral part of learning media design, thereby making a new contribution to the study of digitally based Islamic education.

The integration of local wisdom into Islamic learning is an important finding because it can strengthen students' cultural identity while increasing the relevance of the material. As Khuzaemah & Nurkholidah (2022) emphasize, local wisdom contains moral and spiritual values. This study demonstrates that local values, such as the Bantenese tradition of tahlil and daily prayers, can be incorporated into digital content.

The MPDKL model presented in Figure 2 has four main principles. First, the integration of local wisdom values into learning materials, so that the lesson content is not only textual but also contains social, cultural, and religious meanings that are close to students' lives. This principle aligns with constructivist theory, which states that knowledge is built based on students' experiences and contexts. According to Lev Vygotsky, the learning process will be more meaningful when the material is linked to the students' social and cultural environment (Vygotsky & Cole, 2018). In addition, this approach is also in line with contextual teaching and learning, which emphasizes the relationship between learning materials and the real lives of students (Johnson, 2002). Various studies show that local wisdom-based learning can improve conceptual understanding, learning relevance, and student involvement because the material being studied is connected to the culture they are familiar with (Inayati et al., 2026; Saputra, 2024; Tohri et al., 2022).

Second, the media's flexibility, which can be used both online and offline, can meet the needs of students in areas with limited internet access. This principle aligns with the concept of flexible learning, which emphasizes providing learning opportunities without being limited by space, time, or available technology. According to John B. Biggs, a flexible learning environment can increase accessibility and enable students to achieve a more optimal learning experience tailored to their circumstances (Biggs, 2014). In digital education in Indonesia, access flexibility is an

important factor in reducing learning gaps caused by differences in regional technological infrastructure.

Third, media interactivity is designed to suit the characteristics of digital-native students through audio, visual, quiz, and gamification features, making learning more engaging and participatory. This principle is supported by Richard E. Mayer's multimedia learning theory, which explains that the combination of text, images, audio, and interactive elements can improve comprehension and retention of information by engaging multiple cognitive processing channels (Mayer, 2024). In addition, research shows that the use of gamification in learning can increase student motivation, engagement, and participation because it provides a more enjoyable and challenging learning experience (Mahbubi, 2025; Srimuliyani, 2023).

Fourth, an orientation toward contextual transformation of religious behavior, namely, learning is directed not only at mastering the material but also at internalizing religious values in students' daily lives. This principle aligns with the affective domain taxonomy developed by David R. Krathwohl, which emphasizes that educational goals extend beyond cognitive aspects to encompass the formation of attitudes, values, and character (Krathwohl, 2002). In Islamic religious education, learning success is measured not only by understanding religious concepts but also by students' ability to implement these values in real-life behavior. Research on local culture-based character education also shows that integrating cultural and religious values into learning contributes to strengthening students' character, cultural identity, and social behavior (Septarinjani et al., 2025).

Thus, the four principles of MPDKL are not only conceptual constructs developed by researchers, but also have a strong theoretical foundation from the perspectives of constructivism, contextual learning, multimedia learning, flexible learning, and character education, and are supported by various empirical findings regarding the effectiveness of integrating local wisdom and technology in the learning process. This model also addresses the gap in previous research, which has focused more on technology alone rather than on preserving local culture.

Theoretically, MPDKL can be used as a reference in the development of digital learning media in various educational contexts, particularly in areas rich in local wisdom. In practice, this theory encourages educators and media developers to design applications that are not only modern and interactive but also relevant to the community's cultural values. Thus, MPDKL is a conceptual contribution that simultaneously reconciles two interests: the need for innovation in educational technology and the preservation of local wisdom in learning.

F. Conclusion

This study demonstrates that the local wisdom-based WDM Android application is feasible, practical, and effective as an Islamic learning medium for PTKI students in Banten Province, as shown by improved student learning outcomes after its use. In addition to producing a digital learning product, this study proposes the Local Wisdom-Based Digital Learning Media Model (MPDKL), which emphasizes the integration of local cultural values, flexible online and offline access, interactive learning features, and contextual religious behavior development. Practically, the findings indicate that local wisdom-based digital applications can serve as an

innovative alternative for Islamic Religious Education while supporting cultural preservation and enhancing the relevance and meaningfulness of students' learning experiences. However, this study is limited to PTKI students in Banten Province, uses a single-group pretest–posttest design without a control group, and focuses only on short-term learning outcomes. Therefore, future research should test the model and application across different regions, educational levels, and student characteristics, preferably using an experimental design with a control group to provide stronger evidence of effectiveness and examine long-term effects on students' affective aspects, character, and religious behavior.

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