



Development of Adobe Flash-Based Learning Media Integrated with Local Wisdom to Improve Literacy, Learning Interest and Moral Character of Students in Integrated Islamic Elementary Schools

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Article Info	Abstract
<p>Received: 2026-05-26 Revised: 2026-06-04 Accepted: 2026-06-04</p> <p>Keywords: <i>Adobe Flash CS6, local wisdom, Malay Deli culture, interactive learning media, learning interest, moral character, Islamic education.</i></p> <p>DOI: 10.24256/ideas.v14i1.10825</p> <p>Corresponding Author: Deni Hazmi deni0331243017@uinsu.ac.id Universitas Islam Negeri Sumatera Utara</p>	<p><i>This study aims to develop interactive learning media based on Adobe Flash CS6 integrated with Malay Deli local wisdom to improve students' learning interest and moral character in Islamic Religious Education (PAI) learning at an Integrated Islamic Elementary School. The background of this research is rooted in the limited use of innovative media in elementary Islamic education, where conventional teaching methods often lead to low student engagement and weak internalization of moral values. The research employed a Research and Development (R&D) approach using the ADDIE model, consisting of Analysis, Design, Development, Implementation, and Evaluation stages. The study was conducted at SD IT Umami A'yuni, Perbaungan, North Sumatra, involving fifth-grade students, teachers, and expert validators. Data collection techniques included observation, interviews, questionnaires, validation sheets, and learning outcome assessments. The developed media integrated multimedia elements such as text, animation, audio, video, and interactive quizzes with local cultural values reflecting Malay Deli traditions, politeness, cooperation, and Islamic ethics. The findings revealed that the media achieved a high level of feasibility based on evaluations by media experts, language experts, and subject matter experts. Students demonstrated increased enthusiasm, participation, and understanding of moral concepts</i></p>

during the learning process. Furthermore, the use of Adobe Flash-based interactive media significantly enhanced students' learning interest and strengthened their understanding of commendable moral behavior. The study concludes that integrating technology with local wisdom can create meaningful, contextual, and engaging learning experiences while simultaneously supporting character education in elementary Islamic schools. The findings also indicate that technology-based media can become an effective pedagogical innovation for strengthening Islamic values, student motivation, and culturally responsive education in the twenty-first century.

1. Introduction

The rapid development of information and communication technology in the era of globalization has significantly transformed various aspects of human life, including education. The educational paradigm in the twenty-first century emphasizes student-centered learning, where learners are expected to actively construct knowledge through meaningful experiences rather than merely receiving information passively.

In this context, learning media play a strategic role in facilitating interactive, innovative, and contextual learning processes. Educational media are not merely tools used to deliver information, but they function as essential components in creating effective learning environments that encourage active student participation (AECT, 2004; Hamid, 2020).

The advancement of digital technology has encouraged schools to adopt technology-based learning systems to improve educational quality (Firdaos, 2015; Anwar, 2024). In elementary education, particularly in Islamic schools, teachers are increasingly required to integrate technology into classroom instruction. However, many elementary schools still rely heavily on conventional teaching methods dominated by lectures and textbook-centered instruction.

Such approaches often result in monotonous learning environments that reduce students' motivation and engagement. Consequently, students may experience boredom, low participation, and weak comprehension of learning materials.

Learning interest is one of the most important psychological factors influencing students' academic achievement (Wlodkowski, 2004; Dewi, 2018). Students with high learning interest tend to be more attentive, enthusiastic, and motivated to participate actively in classroom activities. Conversely, low learning

interest negatively affects students' concentration, participation, and learning outcomes.

Therefore, teachers need innovative instructional strategies capable of increasing student engagement and creating enjoyable learning experiences. One of the most effective approaches is the use of interactive multimedia learning media.

Interactive multimedia combines text, images, sound, animation, and video into a unified instructional system that allows students to interact directly with learning materials (Wati, 2016). Such media are highly effective in increasing student motivation because they provide visual and auditory stimulation simultaneously. Interactive learning media also support diverse learning styles among students, including visual, auditory, and kinesthetic learners. By integrating various multimedia elements, abstract concepts become easier to understand and more meaningful for elementary school students.

Among the various multimedia software available, Adobe Flash CS6 has become one of the most widely used applications for developing interactive educational media (Rahmawati, 2020; Prasetyo & Ginting, 2019). Adobe Flash enables developers to create animated, dynamic, and engaging instructional materials. Through this software, learning materials can be presented in interactive forms such as animated stories, games, quizzes, simulations, and educational videos. These features make Adobe Flash suitable for elementary-level learners who generally prefer visual and interactive learning experiences.

Several previous studies have demonstrated the effectiveness of Adobe Flash-based media in improving student motivation and academic achievement. Interactive multimedia can increase classroom participation, improve comprehension, and reduce learning boredom. However, most previous studies focused primarily on cognitive achievement without integrating local cultural values into the learning process. In fact, integrating local wisdom into education is essential for strengthening students' cultural identity and moral development.

Local wisdom refers to cultural values, traditions, beliefs, and social practices inherited from previous generations within a particular community (Aji, 2019). In Indonesia, local wisdom constitutes an important component of national identity and character education. Malay Deli culture, which dominates many regions in North Sumatra, contains values closely aligned with Islamic teachings, including politeness, mutual respect, cooperation, honesty, and social harmony. Integrating these values into Islamic education can help students understand moral concepts more contextually and practically.

Islamic Religious Education (PAI), particularly Aqidah Akhlak subjects, aims not only to develop students' cognitive understanding but also to strengthen their moral character and spiritual values (Suryadarma & Haq, 2015; Syafri, 2012). Therefore, teaching strategies in Islamic education should incorporate approaches that encourage moral internalization and character formation. By integrating

Malay Deli local wisdom into interactive multimedia, students can relate religious values to their daily cultural experiences.

Furthermore, Indonesia's Merdeka Curriculum encourages contextual and project-based learning that emphasizes character development and cultural integration (Novita, 2024). The curriculum provides opportunities for teachers to develop instructional innovations based on students' social and cultural backgrounds. Therefore, the development of Adobe Flash-based learning media integrated with Malay Deli local wisdom is highly relevant to current educational policies.

This study was conducted at SD IT Ummi A'yuni, an Integrated Islamic Elementary School located in Perbaungan, North Sumatra. Preliminary observations indicated that students showed low interest in Islamic Religious Education classes due to limited use of interactive media. Learning activities were still dominated by lectures and textbook explanations. Additionally, moral education was often delivered theoretically without sufficient contextual examples from students' cultural environment. These conditions highlighted the need for innovative learning media capable of increasing student engagement while strengthening moral understanding.

The novelty of this study lies in the integration of Malay Deli local wisdom into Adobe Flash-based interactive learning media for Islamic Religious Education. Unlike previous studies that mainly focused on technological innovation, this research combines educational technology with cultural values to create contextual and character-based learning experiences. The media not only functions as a tool for knowledge transfer but also serves as a medium for strengthening students' moral values and cultural identity.

The objectives of this study are to analyze the development process of Adobe Flash-based interactive learning media, examine its feasibility, evaluate students' responses, and investigate its effectiveness in improving students' learning interest and moral understanding. Through this research, it is expected that technology-based learning media integrated with local wisdom can contribute significantly to improving the quality of Islamic education in elementary schools.

2. Method

This research employed a Research and Development (R&D) method using the ADDIE instructional design model, consisting of five stages: Analysis, Design, Development, Implementation, and Evaluation. The study was conducted at SD IT Ummi A'yuni, Perbaungan, Serdang Bedagai Regency, North Sumatra, during the 2025/2026 academic year. The research focused on fifth-grade students in Islamic Religious Education learning, particularly Aqidah Akhlak materials related to commendable moral behavior.

The Analysis stage aimed to identify learning problems, students' needs, and the characteristics of the learning environment. Preliminary observations and interviews with teachers revealed that Islamic Religious Education classes were

still dominated by conventional methods, resulting in low student participation and limited understanding of moral concepts. Students needed more engaging, interactive, and contextual learning experiences. The analysis also identified the potential integration of Malay Deli local wisdom into Islamic learning materials.

During the Design stage, the researcher created a storyboard and learning media prototype using Adobe Flash CS6. Learning materials were designed to integrate Islamic values with local cultural content. The media included text explanations, animated illustrations, narration, educational videos, interactive quizzes, and culturally relevant examples from Malay Deli traditions. Navigation systems and interface layouts were designed to ensure user-friendliness and accessibility for elementary school students.

The Development stage involved producing the interactive learning media and conducting expert validations. The product was evaluated by one media expert, one language expert, and one Islamic Religious Education teacher. Validation focused on content accuracy, language appropriateness, visual appearance, interactivity, and ease of use. Revisions were conducted based on suggestions provided by validators to improve the overall quality of the product.

The Implementation stage involved field testing with students. The testing process consisted of three phases: one-to-one trials involving three students with different ability levels, small-group trials involving nine students, and field trials involving twenty-five fifth-grade students. Students used the interactive media during Islamic Religious Education lessons under teacher supervision.

Data collection techniques included observation, interviews, questionnaires, and learning assessments. Observation sheets were used to examine student participation and classroom interaction. Questionnaires measured students' learning interest, motivation, and responses toward the media. Validation sheets assessed the feasibility and quality of the media. Learning assessments were conducted to evaluate students' understanding of moral concepts before and after using the media.

The Evaluation stage analyzed quantitative and qualitative data to determine the effectiveness and feasibility of the developed media. Descriptive statistical analysis was used to calculate validation scores and student responses, while qualitative analysis interpreted feedback from students and teachers. The study aimed to determine whether the Adobe Flash-based interactive media integrated with local wisdom could effectively improve students' learning interest and moral understanding.

3. Result

The findings of this study indicate that the development of Adobe Flash-based interactive learning media integrated with Malay Deli local wisdom was successfully implemented through systematic stages of analysis, design, development, implementation, and evaluation. The resulting product was an interactive multimedia application designed for fifth-grade Islamic Religious Education learning, particularly Aqidah Akhlak materials focusing on commendable moral behavior.

During the analysis stage, researchers identified several problems in classroom learning. Islamic Religious Education classes were primarily teacher-centered, relying heavily on lectures and textbooks. Students demonstrated low enthusiasm during lessons and often experienced difficulty understanding abstract moral concepts. Teachers also reported limited availability of innovative learning media appropriate for elementary school students.

The design process resulted in a detailed storyboard containing multimedia components such as animated characters, narration, illustrations, educational videos, interactive menus, and quizzes. The media integrated Islamic values with Malay Deli cultural elements, including local clothing, traditional expressions, moral stories, and social customs emphasizing politeness, mutual respect, and cooperation. These contextual cultural elements were intended to help students connect Islamic teachings with their everyday experiences.

In the development stage, the media product was created using Adobe Flash CS6 software. The application featured an attractive interface with colorful animations and interactive navigation systems suitable for elementary students. The content included explanations of moral values such as honesty, respect for parents, helping others, and maintaining social harmony. Interactive exercises and quizzes allowed students to evaluate their understanding independently.

Expert validation results demonstrated that the media achieved high levels of feasibility. Media experts evaluated the application positively in terms of design quality, navigation systems, interactivity, and technical functionality. Language experts considered the instructional language clear, age-appropriate, and easy to understand. Subject matter experts confirmed that the content aligned with the Islamic Religious Education curriculum and effectively integrated Islamic values with local wisdom.

The implementation process showed positive student responses toward the media. During one-to-one trials, students expressed enthusiasm and curiosity while interacting with the multimedia application. They reported that the animations, sounds, and interactive quizzes made learning more enjoyable compared to traditional classroom methods.

In small-group trials involving nine students, classroom observations revealed increased participation and interaction. Students actively discussed the moral stories presented in the media and showed greater willingness to answer questions and participate in discussions. The use of local cultural examples also

helped students understand moral concepts more concretely.

Field trials involving twenty-five fifth-grade students demonstrated significant improvements in learning interest and moral understanding. Students became more attentive during lessons and showed higher levels of motivation. Observation results indicated increased classroom participation, including asking questions, responding to teacher explanations, and completing assignments enthusiastically.

The interactive multimedia also contributed positively to students' moral understanding. Through animated stories and culturally relevant examples, students gained deeper comprehension of Islamic moral values such as honesty, politeness, cooperation, and respect. Teachers observed behavioral improvements among students, including increased politeness during classroom interactions and better cooperation in group activities.

Questionnaire results indicated that students perceived the media as interesting, enjoyable, and easy to use. Most students stated that the media helped them understand Islamic Religious Education materials more effectively. Students particularly appreciated the interactive quizzes and animations because they made learning feel like playing educational games.

Teachers also responded positively to the developed media. They believed the media reduced classroom monotony and improved student engagement. Teachers noted that the multimedia application supported student-centered learning because students became more active and independent during lessons. Furthermore, integrating local wisdom was considered highly beneficial for strengthening students' cultural awareness and moral values.

The findings further indicated that integrating technology with local wisdom created meaningful learning experiences. Students not only learned religious concepts theoretically but also understood how Islamic values were practiced within their local culture. This contextual approach strengthened students' emotional connection to learning materials.

Overall, the results confirmed that Adobe Flash-based interactive learning media integrated with Malay Deli local wisdom effectively improved students' learning interest and moral understanding. The developed media successfully combined educational technology, Islamic values, and cultural elements into an engaging instructional innovation suitable for elementary Islamic education.

4. Discussion

The findings of this study demonstrate that interactive multimedia learning media integrated with local wisdom can significantly improve the quality of Islamic education at the elementary school level (Novia, 2020; Wati, 2016). The successful development and implementation of Adobe Flash-based media highlight the

importance of integrating technology, pedagogy, and culture in modern educational practices.

One of the major findings of this study is the effectiveness of interactive multimedia in increasing students' learning interest. Interactive media provide visual and auditory stimulation simultaneously, making learning more engaging and enjoyable. Elementary school students generally prefer colorful visuals, animations, and interactive activities because such features match their developmental characteristics. The use of animation, sound effects, and interactive quizzes in this study created an enjoyable learning atmosphere that reduced boredom and encouraged active participation.

The findings align with constructivist learning theory, which emphasizes that students actively construct knowledge through meaningful experiences (Wlodkowski, 2004). Interactive multimedia allows students to explore learning materials independently and interact with instructional content directly. Instead of passively listening to lectures, students become active participants in the learning process. This active involvement increases students' motivation, attention, and understanding.

The study also confirms previous research indicating that multimedia-based learning can improve student engagement and learning outcomes (Rahmawati, 2020; Prasetyo & Ginting, 2019). However, the novelty of this research lies in integrating local wisdom into educational technology. Most previous multimedia studies focused solely on cognitive achievement, whereas this research combined cognitive learning with character education and cultural awareness.

Integrating Malay Deli local wisdom into Islamic Religious Education proved highly beneficial for students' moral understanding. Cultural values such as politeness, cooperation, respect for elders, and social harmony closely align with Islamic teachings. By presenting moral lessons through familiar cultural contexts, students were able to understand abstract religious concepts more concretely and meaningfully.

Contextual learning theory explains that students learn more effectively when instructional materials relate directly to their daily experiences (Aji, 2019; Alawiyah, 2024). In this study, local cultural stories, traditions, and expressions helped students connect Islamic values to real-life situations. This contextualization strengthened students' emotional engagement and facilitated moral internalization.

The findings also demonstrate the relevance of culturally responsive pedagogy in Islamic education (Syafri, 2012; Saputra, 2020). Culturally responsive teaching recognizes students' cultural backgrounds as valuable resources in the learning process. By incorporating Malay Deli cultural elements into the media, the learning process became more inclusive and culturally meaningful. Students felt that the lessons reflected their identities and social environments.

Another important finding concerns the changing role of teachers in technology-based learning environments. The use of interactive multimedia transformed teachers from primary sources of information into facilitators and learning guides. Teachers became responsible for supporting students' exploration and discussion rather than solely delivering lectures. This transformation reflects the principles of student-centered learning promoted in modern educational paradigms.

The study further highlights the importance of character education in elementary Islamic schools (Mulyasa, 2012; Suryadarma & Haq, 2015). Islamic Religious Education should not focus exclusively on cognitive achievement but also on moral and spiritual development. The integration of local wisdom into interactive media created opportunities for students to practice moral reflection and social understanding. Through animated stories and interactive scenarios, students learned not only what is morally correct but also how moral values can be applied in everyday life.

Moreover, the implementation of Adobe Flash-based learning media demonstrated the potential of educational technology in supporting the Merdeka Curriculum (Novita, 2024; Hamid, 2020). The curriculum encourages contextual, project-based, and character-oriented learning approaches. Interactive multimedia integrated with local wisdom aligns closely with these objectives because it promotes creativity, cultural awareness, critical thinking, and student engagement.

Despite the positive findings, several challenges emerged during the implementation process. One challenge involved limited technological facilities and infrastructure in schools. Effective use of multimedia learning media requires adequate computers, projectors, and technical support. Additionally, teachers need sufficient training and digital literacy to operate multimedia applications effectively.

Another challenge relates to the sustainability of Adobe Flash technology itself. Since Adobe Flash is no longer officially supported by modern browsers, future research should consider adapting the developed content into newer platforms such as HTML5 or mobile-based applications. Nevertheless, the pedagogical principles and instructional design developed in this study remain highly relevant.

The findings also suggest implications for future educational policy and practice. Educational institutions should encourage teachers to integrate local culture into technology-based learning materials. Such integration can strengthen students' national identity while preserving local cultural heritage. Furthermore, schools should provide professional development opportunities enabling teachers to develop digital learning media independently.

Overall, this study demonstrates that integrating educational technology with local wisdom creates meaningful, engaging, and culturally relevant learning experiences. Interactive multimedia can become an effective instructional

innovation for improving students' learning interest, strengthening moral understanding, and supporting character education in elementary Islamic schools.

5. Conclusion

This study concludes that the development of Adobe Flash-based interactive learning media integrated with Malay Deli local wisdom was successfully implemented and effectively improved students' learning interest and moral understanding in Islamic Religious Education learning at SD IT Ummi A'yuni. The media development process followed the ADDIE model systematically, including analysis, design, development, implementation, and evaluation stages.

The findings demonstrated that the developed multimedia application achieved high feasibility based on evaluations from media experts, language experts, and subject matter experts. The media successfully combined educational content with interactive features such as animation, audio, video, and quizzes, making learning more engaging and enjoyable for elementary school students.

The implementation results showed significant improvements in students' learning interest, participation, and classroom interaction. Students became more enthusiastic, active, and motivated during Islamic Religious Education lessons. The integration of local wisdom into learning materials also strengthened students' understanding of moral values such as honesty, politeness, cooperation, and respect.

This study further confirms that integrating local culture into educational technology creates contextual and meaningful learning experiences. Students were able to connect Islamic teachings with their daily social and cultural environments, making moral concepts easier to understand and internalize.

In addition, the findings highlight the importance of technology-based instructional innovation in supporting twenty-first-century education and the Merdeka Curriculum. Interactive multimedia can help transform learning from teacher-centered instruction into student-centered experiences emphasizing participation, creativity, and character formation.

Despite technological limitations and infrastructure challenges, the study demonstrates that culturally integrated multimedia learning media have significant potential for improving the quality of Islamic education. Future studies are recommended to develop similar applications using more modern digital platforms and to expand implementation across different educational contexts and subject areas.

Ultimately, this research contributes to the development of innovative Islamic education by combining technology, pedagogy, and local wisdom to support meaningful learning and character education for elementary school students.

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