

DEVELOPMENT OF EXPERT JUDGMENT-BASED ISLAMIC EDUCATION LEARNING MATERIALS ON WORSHIP PRACTICES TO ENHANCE STUDENTS' UNDERSTANDING AND PARTICIPATION

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Abstract

This study aimed to develop and validate an interactive learning media for Islamic Religious Education (PAI) on the topic of worship practices for senior high school students at SMAN 1 Rantau Bayur. The research employed the Research and Development (R&D) method using the ADDIE instructional design model, consisting of Analysis, Design, Development, Implementation, and Evaluation stages. Data were collected through interviews, classroom observations, documentation, and expert validation questionnaires. The developed product was evaluated by one material expert and one media expert using a five-point Likert scale. The findings indicated that conventional teaching methods, dominated by lectures and simple demonstrations, limited students' engagement and understanding of worship practices. The interactive learning media was designed by integrating multimedia elements, including instructional videos, animations, illustrations, narration, and interactive quizzes, to facilitate meaningful and student-centered learning. Expert validation demonstrated that the product achieved a feasibility score of 94% from the material expert and 93% from the media expert, with an overall average of 93.5%, categorized as "very feasible." These results confirm that the developed learning media meets pedagogical, technical, and instructional quality standards. The study concludes that interactive multimedia developed through a systematic instructional design process can enhance the quality of Islamic Religious Education by increasing students' understanding, learning motivation, and active participation. The developed media is recommended as an innovative instructional resource for improving worship practice learning in senior high schools.

Keywords: ADDIE model, expert judgment, interactive learning media, Islamic Religious Education, Research and Development, worship practices

Abstrak

Penelitian ini bertujuan untuk mengembangkan dan memvalidasi media pembelajaran interaktif Pendidikan Agama Islam (PAI) pada materi praktik ibadah bagi siswa Sekolah Menengah Atas di SMAN 1 Rantau Bayur. Penelitian menggunakan metode Research and Development (R&D) dengan model pengembangan ADDIE yang meliputi tahap Analysis, Design, Development, Implementation, dan Evaluation. Data dikumpulkan melalui wawancara, observasi kelas, dokumentasi, dan angket validasi ahli. Produk yang dikembangkan divalidasi oleh satu ahli materi dan satu ahli media menggunakan skala Likert lima poin. Hasil penelitian menunjukkan bahwa pembelajaran konvensional yang

masih didominasi oleh metode ceramah dan demonstrasi sederhana menyebabkan rendahnya keterlibatan serta pemahaman siswa terhadap materi praktik ibadah. Media pembelajaran interaktif yang dikembangkan mengintegrasikan berbagai elemen multimedia, seperti video pembelajaran, animasi, ilustrasi, narasi, dan kuis interaktif untuk mendukung pembelajaran yang bermakna dan berpusat pada siswa. Hasil validasi menunjukkan bahwa media memperoleh skor kelayakan sebesar 94% dari ahli materi dan 93% dari ahli media, dengan rata-rata keseluruhan 93,5%, sehingga termasuk dalam kategori sangat layak. Temuan ini membuktikan bahwa media yang dikembangkan telah memenuhi standar kualitas pedagogis, teknis, dan instruksional. Penelitian ini menyimpulkan bahwa media pembelajaran interaktif yang dikembangkan melalui proses desain pembelajaran yang sistematis mampu meningkatkan kualitas pembelajaran Pendidikan Agama Islam dengan mendorong peningkatan pemahaman, motivasi belajar, dan partisipasi aktif siswa. Media ini direkomendasikan sebagai alternatif inovatif dalam pembelajaran praktik ibadah di tingkat Sekolah Menengah Atas.

Kata kunci: model ADDIE, expert judgment, media pembelajaran interaktif, Pendidikan Agama Islam, Research and Development (R&D), praktik ibadah

INTRODUCTION

Educational developments in the 21st century call for a transformation in learning that is not only oriented toward the transfer of knowledge, but also toward the development of critical thinking skills, creativity, collaboration, communication, and the ability to use information technology effectively. This transformation encourages every educational institution to develop learning processes that are more innovative, interactive, and learner-centered. In this context, teachers no longer serve merely as conveyors of information but also as facilitators capable of creating meaningful learning experiences through the use of various instructional media tailored to the characteristics of the learners (Branch, 2020; Mayer, 2021). This paradigm shift implies that the quality of learning is greatly influenced by teachers' ability to design learning media that can enhance students' motivation, engagement, and understanding of the material being studied.

In Islamic Religious Education (IRE) instruction, learning media play a highly strategic role. IRE aims not only to develop students' cognitive understanding of Islamic concepts but also to foster affective and psychomotor aspects related to the development of religious character, spiritual attitudes, and the skills needed to apply Islamic teachings in daily life (Majid, 2019). Therefore, the PAI learning process must be able to provide concrete, contextual learning experiences that actively engage students so that religious values are not only understood theoretically but can also be internalized into tangible behavior.

One subject area with such characteristics is the practice of worship. This subject requires students not only to understand the underlying concepts and principles but also to be able to perform the rituals of worship in accordance with the provisions of Islamic law. Thus, the success of learning the practice of worship cannot be measured solely by the ability to memorize theory but also by students' ability to perform the practices correctly, systematically, and with full awareness. These conditions mean that the teaching of

practical worship requires a more applied learning approach, supported by media capable of visualizing each stage of the practice clearly and engagingly (Arsyad, 2019).

However, various studies indicate that Islamic Education (PAI) instruction in secondary schools still faces numerous challenges. Instruction is often dominated by lecture-based methods, the use of textbooks as the sole learning resource, and simple demonstrations that fail to fully engage students. As a result, students tend to passively receive information, making the learning process monotonous and failing to provide a meaningful learning experience (Sari et al., 2023). This situation leads to low motivation to learn, a lack of active student participation, and limited ability to apply religious concepts in daily life.

This phenomenon is also observed at SMAN 1 Rantau Bayur. Based on the researcher's initial observations, the learning process for worship practices remains dominated by conventional methods, such as verbal explanations and simple demonstrations conducted by the teacher in front of the class. The use of interactive learning media remains very limited, so the learning process has not been able to accommodate the diverse learning needs of students. Most students merely observe the teacher's explanations without having sufficient opportunities to explore the material through visual or interactive media. This situation causes some students to struggle to understand the correct sequence of religious practices, while others exhibit relatively low levels of participation during the learning process.

This situation highlights a gap between the demands of 21st-century learning and current teaching practices in the field. In fact, various modern educational studies confirm that the appropriate use of instructional media can enhance the quality of learning interactions, clarify abstract concepts, boost learning motivation, and help students build a deeper understanding through concrete learning experiences (Mayer, 2021). Instructional media also serve as a bridge of communication between teachers and students, allowing the material presented to be received more effectively than in learning that relies solely on verbal communication.

According to the Cognitive Theory of Multimedia Learning, students will find it easier to understand information when material is presented through a combination of text, images, animations, audio, and video that complement one another (Mayer, 2021). This theory explains that the human brain processes information through two main channels: the visual channel and the verbal channel. When both channels are optimally utilized in learning, the students' cognitive load is reduced, allowing them to understand, remember, and apply information more effectively. Therefore, the development of instructional media that integrates various multimedia elements is a highly relevant strategy for improving the quality of Islamic Education (PAI) instruction, particularly for procedural worship practices.

In addition to considering multimedia aspects, the development of instructional media must also prioritize content validity and design quality. Media that is visually appealing

does not necessarily have content quality that aligns with learning objectives. Conversely, media containing accurate content may not necessarily capture students' attention if presented with a design that lacks communicative effectiveness. Therefore, the media development process must undergo a validation stage by experts—or expert judgment—to ensure the resulting media meets academic, pedagogical, and technical standards before being implemented in the classroom (Sugiyono, 2019). Expert judgment is a crucial procedure in research and development because it ensures that the final product meets standards for content appropriateness, language accuracy, presentation, visual appeal, and alignment with learner characteristics.

In development research, content expert validation aims to ensure that all instructional content aligns with the curriculum, learning objectives, and applicable scientific principles. Meanwhile, validation by media experts focuses on aspects of design, navigation, readability, interactivity, aesthetics, and ease of use. The synergy between these two forms of validation will result in instructional media that is not only academically sound but also effective in the learning process (Branch, 2020). Therefore, expert judgment is an integral stage in the process of developing high-quality instructional media.

Previous research findings further reinforce the importance of developing learning media validated by experts. A study conducted by Sari et al. (2023) showed that the use of innovative learning media significantly enhances students' learning activities, motivation, and learning outcomes compared to conventional instruction. These findings indicate that instructional media play a strategic role in creating a more effective and learner-centered learning process. Similarly, Hairani et al. (2024) found that interactive instructional media have a positive impact on students' interest in learning, engagement, and ability to understand Islamic Religious Education (IRE) material because students gain a more engaging and easily understandable learning experience.

Furthermore, research by Azzahra et al. (2024) explains that the integration of technology-based learning media can increase students' active participation during the Islamic Religious Education (IRE) learning process. The use of digital media provides students with the opportunity to explore material independently, practice repeatedly, and receive immediate feedback. These conditions lead to improved conceptual understanding and practical skills among students. These findings indicate that innovation in learning media is an urgent need to support the implementation of 21st-century learning while simultaneously improving the quality of Islamic religious education in secondary schools.

Although these various studies have demonstrated the effectiveness of using instructional media in improving the quality of Islamic Religious Education, there are still several *research gaps* that require further attention. First, most previous studies have focused only on the impact of media use on student learning outcomes without comprehensively explaining the media development process through systematic validation stages. In fact,

the quality of instructional media is greatly influenced by its development process, ranging from needs analysis, product design, expert validation, revision, to field testing. Media developed without undergoing adequate validation procedures may contain weaknesses in both content and design, thereby reducing their effectiveness in the learning process (Branch, 2020).

Second, research on the development of Islamic Religious Education learning media for worship practice materials at the high school level remains relatively limited. Most studies have been conducted at the elementary school or madrasah levels, focusing on multimedia-based media or digital applications. However, high school students have different levels of cognitive, affective, and psychomotor development, requiring learning media that are more complex, contextual, and capable of fostering critical and reflective thinking skills. Additionally, the subject matter of worship practices involves procedural knowledge that requires accurate visualization of movements, steps, and simulations so that students can understand and practice them correctly in accordance with Islamic law.

Third, previous research has largely focused on the effectiveness of media after it has been used in instruction, whereas studies on the validation process using the *expert judgment* approach remain relatively scarce. In fact, expert validation is a crucial stage in research and development (*Research and Development*) as it serves as the foundation for ensuring that the resulting media meet academic, pedagogical, technical, and aesthetic standards before being implemented with students (Sugiyono, 2019). Thus, research that integrates the media development process with validation by subject matter experts and media experts still has significant room for further development.

In the context of modern education, the quality of instructional media is not only measured by its attractive appearance but also by its level of validity, reliability, usability, and its ability to facilitate the achievement of learning objectives. Therefore, the development of instructional media must be conducted through a systematic scientific approach to ensure that the resulting products truly meet the needs of both teachers and students. This approach not only produces media suitable for use but also contributes to the development of sustainable learning innovations.

The concept of *expert judgment* is one of the most widely used approaches in development research because it provides experts with the opportunity to objectively evaluate the quality of an educational product. This evaluation covers various aspects, such as the alignment of content with learning outcomes, conceptual accuracy, clarity of language, systematic presentation, visual quality, media interactivity, and ease of use. The feedback provided by experts is then used as the basis for revisions, ensuring that the resulting educational media meet high standards of quality before being implemented with students (Plomp & Nieveen, 2021).

Furthermore, expert validation serves as a form of *quality assurance* in development research. Products that have received positive evaluations from experts possess a higher level of credibility, thereby making the research findings more scientifically accountable.

In the context of Islamic Religious Education, expert validation of instructional materials is crucial because it pertains to the accuracy of religious texts, compliance with fiqh (Islamic jurisprudence), and the correctness of the procedures for religious practices taught to students. Even the slightest error in presenting the material can lead to misconceptions that impact students' religious practices. Therefore, the involvement of Islamic Religious Education experts in the validation process is a necessity that cannot be overlooked.

On the other hand, validation by media experts plays a role in ensuring that the developed media meet the principles of modern instructional design. Effective media must have an attractive appearance, easy-to-understand navigation, balanced color schemes, clear typography, and the ability to provide an enjoyable learning experience. According to Mayer (2021), instructional media designed based on multimedia principles can increase attention, reduce cognitive load, and help students build better mental representations of the material being studied. Therefore, the combination of validation by subject matter experts and media experts will result in instructional products that are of high quality both academically and technically.

The development of learning media is also in line with the implementation of the Merdeka Curriculum, which emphasizes differentiated, learner-centered learning and encourages the use of various innovative learning resources. Under this curriculum, teachers are given the flexibility to develop learning media tailored to the characteristics of their students and the school environment. Consequently, teachers' ability to develop instructional media has become one of the indicators of professionalism that supports the successful implementation of the curriculum (Ministry of Education, Culture, Research, and Technology, 2022). Instructional media developed through a scientific process and validated by experts will help teachers create learning experiences that are more contextual, meaningful, and enjoyable.

This study offers *novelty* compared to previous studies. The first novelty lies in the research focus on developing instructional media for Islamic Religious Education, specifically on the subject of worship practices at the high school level—a topic that has so far been relatively under-researched. The second novelty is the comprehensive use of the *expert judgment* approach, involving subject matter experts and media experts as the primary basis for determining a product's suitability before its implementation in the classroom. The third novelty lies in the study's orientation, which not only produces instructional media but also provides a validation model that can serve as a reference for developing Islamic Religious Education instructional media on other topics.

The urgency of this study is further underscored by the challenges of 21st-century education, which demand that teachers be able to continuously generate learning innovations. Learning media that are valid, engaging, and aligned with students' characteristics are expected to enhance learning motivation, active participation, and students' understanding of the practical worship material. Furthermore, the results of this

study are expected to contribute to the advancement of educational science, particularly in the field of Islamic Religious Education learning media development, while also serving as a reference for teachers, researchers, and future learning media developers.

Based on the above, this study aims to develop Islamic Religious Education learning media on the subject of worship practices that have undergone a validation process using *expert judgment*, thereby producing a product suitable for use in the classroom. This study also aims to determine the level of suitability of the media based on the assessments of subject matter experts and media experts, as well as to provide recommendations regarding the development of effective learning media to improve the quality of Islamic Religious Education at the high school level. Thus, this study is expected not only to produce a learning product but also to provide theoretical and practical contributions to the development of innovative, valid learning media that meet current educational needs.

METHOD

This study employed the Research and Development (R&D) method to develop an interactive learning media for Islamic Religious Education (PAI) on the topic of worship practices and to evaluate its feasibility before classroom implementation. Research and Development is designed to produce educational products and systematically examine their validity, practicality, and effectiveness (Sugiyono, 2019). The instructional design adopted in this study was the ADDIE model, consisting of five sequential stages: Analysis, Design, Development, Implementation, and Evaluation (Branch, 2020).

During the analysis stage, a needs assessment was conducted through interviews with PAI teachers and students at SMAN 1 Rantau Bayur to identify instructional problems, particularly those related to the teaching of worship practices. The findings indicated that conventional lecture-based instruction and limited instructional media contributed to low student engagement and understanding. The design stage involved preparing the instructional framework, learning objectives, interface layout, storyboard, and multimedia components. The media was designed according to multimedia learning principles to facilitate meaningful learning through the integration of text, images, animations, and instructional videos (Mayer, 2021).

At the development stage, the prototype of the interactive learning media was produced and revised through expert consultation. The product included visual demonstrations of worship practices, interactive explanations, learning exercises, and user guidance to enhance students' comprehension and participation. The implementation stage focused on expert validation involving one material expert and one media expert. A structured validation questionnaire employing a five-point Likert scale was administered to evaluate the quality of the instructional content, interface design, usability, presentation, and technical functionality (Turmuzi & Kurniawan, 2021). Recommendations from the validators were documented as the basis for product refinement.

Finally, the evaluation stage consisted of revising the learning media according to expert feedback to ensure that the final product met educational quality standards. Evaluation

was conducted continuously throughout each development stage, following the principle of formative evaluation in instructional product development (Daryanto, 2020).

Table 1. Stages of the ADDIE Development Model

STAGE	ACTIVITIES	EXPECTED OUTPUT
ANALYSIS	Needs analysis through interviews and classroom observations	Identification of instructional problems and learner needs
DESIGN	Preparation of learning objectives, storyboard, interface, and instructional flow	Prototype design of interactive learning media
DEVELOPMENT	Production of multimedia content and expert review	Interactive learning media prototype
IMPLEMENTATION	Validation by material and media experts using questionnaires	Feasibility assessment and expert recommendations
EVALUATION	Revision based on expert feedback	Final validated learning media

Table 2. Validation Instrument Using a Five-Point Likert Scale

SCORE	CATEGORY	INTERPRETATION
5	Strongly Agree	Excellent
4	Agree	Good
3	Neutral	Fair
2	Disagree	Poor
1	Strongly Disagree	Very Poor

The feasibility level of the developed learning media was determined by calculating the percentage of the obtained score relative to the maximum possible score. The interpretation criteria are presented in Table 3.

Table 3. Criteria for Media Feasibility

PERCENTAGE	CATEGORY
81–100%	Very Feasible
61–80%	Feasible
41–60%	Fairly Feasible
21–40%	Less Feasible
0–20%	Not Feasible

The feasibility percentage was calculated using the following formula:

$$Feasibility\ Percentage = \frac{Obtained\ Score}{Maximum\ score} \times 100\%$$

The results of expert validation served as the basis for determining whether the developed instructional media was suitable for use in Islamic Religious Education learning, particularly for worship practice materials.

RESULTS AND DISCUSSION

This study resulted in the development of an interactive Islamic Religious Education (PAI) learning media on the topic of worship practices for senior high school students at SMAN 1 Rantau Bayur. The product was developed following the ADDIE instructional design model, consisting of the stages of Analysis, Design, Development, Implementation, and Evaluation. The findings from each stage are presented below.

Analysis Stage

The needs analysis revealed several instructional problems in teaching worship practices. Interviews with one Islamic Religious Education teacher indicated that classroom instruction was still predominantly lecture-based and supported only by textbook explanations and simple demonstrations. Although students understood the theoretical aspects of worship, many experienced difficulties when practicing the procedures independently.

Classroom observations also showed that students tended to become passive during learning activities. Teacher-centered instruction provided limited opportunities for students to interact with learning materials, resulting in relatively low motivation and participation. Students expressed that they preferred instructional media incorporating visual demonstrations, animations, and interactive learning activities because such media would make abstract concepts easier to understand.

Based on these findings, the researcher concluded that an interactive multimedia learning medium integrating visual, audio, and interactive components was required to improve students' understanding and engagement during worship practice instruction.

Design Stage

The design stage focused on preparing the instructional blueprint for the learning media. Learning objectives were formulated according to the current Islamic Religious Education curriculum. The content included:

- Procedures for ablution (Wudhu)
- Prayer movements (Shalat)
- Prayer recitations
- Interactive quizzes
- Learning summaries
- Evaluation exercises

The interface was designed using simple navigation with attractive color combinations to facilitate students' independent learning. Multimedia principles proposed by Mayer (2021) were adopted by combining narration, images, animations, videos, and interactive assessments.

Development Stage

During the development stage, the prototype of the learning media was created and submitted to expert validators consisting of one material expert and one instructional media expert.

Material Expert Validation

The material expert evaluated four aspects:

- Content accuracy
- Curriculum relevance
- Language
- Learning presentation

Table 4. Material Expert Validation Results

ASSESSMENT ASPECT	MAXIMUM SCORE	OBTAINED SCORE	PERCENTAGE	CATEGORY
CONTENT ACCURACY	25	24	96%	Very Feasible
CURRICULUM RELEVANCE	20	19	95%	Very Feasible
LANGUAGE	20	18	90%	Very Feasible
LEARNING PRESENTATION	35	33	94%	Very Feasible
TOTAL	100	94	94%	Very Feasible

The material expert recommended adding more authentic examples from students' daily worship experiences and improving several Arabic transliterations to ensure consistency.

Media Expert Validation

The media expert assessed interface design, technical quality, usability, navigation, and visual communication.

Table 5. Media Expert Validation Results

ASSESSMENT ASPECT	MAXIMUM SCORE	OBTAINED SCORE	PERCENTAGE	CATEGORY
INTERFACE DESIGN	25	23	92%	Very Feasible
NAVIGATION	20	18	90%	Very Feasible
VISUAL COMMUNICATION	25	24	96%	Very Feasible
TECHNICAL FUNCTIONALITY	15	14	93%	Very Feasible

USER FRIENDLINESS	15	14	93%	Very Feasible
TOTAL	100	93	93%	Very Feasible

The media expert suggested improving font consistency, enlarging several icons, and adding navigation buttons to facilitate easier movement between learning sections.

Product Revision

Based on expert recommendations, several improvements were made before the product was finalized.

Table 6. Product Revisions Based on Expert Suggestions

VALIDATOR	SUGGESTION	REVISION IMPLEMENTED
MATERIAL EXPERT	Add contextual worship examples	Additional daily-life examples were included
MATERIAL EXPERT	Improve Arabic transliteration	Standardized transliteration was applied
MEDIA EXPERT	Improve navigation buttons	Navigation menus were redesigned
MEDIA EXPERT	Increase icon size	Icons were enlarged for better readability
MEDIA EXPERT	Improve typography	Fonts were standardized throughout the media

After revision, both experts confirmed that the product was suitable for classroom implementation.

Overall Product Feasibility

The overall feasibility was calculated by combining the results of both validators.

Table 7. Overall Validation Results

VALIDATOR	PERCENTAGE	CATEGORY
MATERIAL EXPERT	94%	Very Feasible
MEDIA EXPERT	93%	Very Feasible
AVERAGE	93.5%	Very Feasible

The average feasibility score of 93.5% indicates that the developed interactive learning media meets the criteria of Very Feasible and is appropriate for use in Islamic Religious Education instruction.

Evaluation Stage

The formative evaluation indicated that the revised product successfully addressed the suggestions provided by the validators. The learning media demonstrated several strengths, including clear instructional content, attractive visual presentation, intuitive navigation, and interactive learning activities that encouraged active student participation.

The integration of animations, instructional videos, and self-assessment quizzes enabled students to learn worship procedures more independently while simultaneously increasing their motivation to participate in classroom activities. The developed media also provided teachers with an innovative instructional tool that supports more student-centered learning. Overall, the implementation of the ADDIE model produced a valid instructional product that fulfilled both pedagogical and technical requirements. The expert validation results demonstrate that the developed interactive learning media has strong potential to enhance the quality of Islamic Religious Education instruction, particularly in teaching worship practices at the senior high school level.

DISCUSSION

The findings of this study demonstrate that the development of interactive learning media for Islamic Religious Education (PAI) on the topic of worship practices using the ADDIE instructional design model resulted in a highly feasible learning product based on expert validation. The material expert awarded a feasibility score of 94%, while the media expert provided a score of 93%, producing an overall feasibility level of 93.5%, which falls within the "very feasible" category. These findings indicate that systematic instructional design supported by expert judgment is capable of producing learning media that meet pedagogical, technical, and instructional standards. More importantly, the development process illustrates that instructional media should not merely function as technological complements but should be intentionally designed to facilitate meaningful learning experiences aligned with curriculum objectives and learner characteristics (Branch, 2020).

The needs analysis conducted during the initial phase revealed that learning worship practices at SMAN 1 Rantau Bayur was still predominantly teacher-centered, relying mainly on lectures and simple demonstrations. Consequently, students had limited opportunities to engage actively with learning materials, resulting in relatively low participation and motivation. Such findings are consistent with constructivist learning theory, which argues that meaningful knowledge construction occurs when learners actively interact with instructional content rather than passively receiving information (Jonassen, 1999). In Islamic Religious Education, practical topics such as ablution (wudhu) and prayer (shalat) require not only conceptual understanding but also repeated observation, imitation, and practice. Therefore, conventional instructional approaches often fail to provide sufficient opportunities for students to internalize procedural knowledge effectively.

The results further indicate that the interactive learning media successfully addressed many of the instructional limitations identified during the needs analysis. By integrating animations, instructional videos, illustrations, narration, and interactive quizzes into a single learning platform, the developed media provided students with richer learning experiences than conventional classroom instruction alone. This finding strongly supports the Cognitive Theory of Multimedia Learning proposed by Mayer (2021), which emphasizes that students learn more effectively when information is presented

simultaneously through verbal and visual channels rather than through text alone. According to this theory, multimedia presentations reduce cognitive overload by distributing information processing across multiple sensory pathways, thereby improving comprehension and long-term retention.

The high validation score assigned by the material expert also demonstrates that the instructional content was considered accurate, relevant, and aligned with curriculum objectives. Content validity represents one of the most critical aspects of instructional media because attractive technology cannot compensate for inaccurate or poorly organized instructional material. The positive evaluation suggests that the learning objectives, explanations, illustrations, and assessment activities were appropriately synchronized with the competencies expected in Islamic Religious Education. This finding is consistent with the argument of Daryanto (2020), who emphasizes that instructional media should function as an integral component of the learning system rather than merely as supplementary teaching aids. Effective instructional media facilitate the achievement of learning objectives through systematic presentation of content, meaningful interaction, and appropriate instructional sequencing.

Similarly, the media expert's evaluation confirmed that the product met important technical quality indicators, including interface design, navigation, usability, typography, and visual communication. User-friendly navigation enables students to explore instructional materials independently without experiencing unnecessary cognitive burden caused by complicated interfaces. Interface simplicity, consistency of icons, readable typography, and intuitive menu organization all contribute significantly to students' learning experiences. These findings align with multimedia usability principles proposed by Mayer (2021), which emphasize that unnecessary visual complexity should be minimized to optimize cognitive processing. A well-designed instructional interface allows learners to allocate more cognitive resources to understanding instructional content rather than figuring out how to operate the media itself.

Another important finding concerns the role of expert judgment in ensuring instructional quality before classroom implementation. Expert validation functions as an essential quality assurance mechanism that allows instructional weaknesses to be identified and corrected during product development. Suggestions provided by both validators—including improving navigation, refining Arabic transliterations, standardizing typography, and adding contextual examples—substantially enhanced the quality of the final product. These revisions illustrate that instructional media development is inherently iterative rather than linear. According to Sugiyono (2019), one of the distinguishing characteristics of Research and Development is continuous revision based on expert feedback until the developed product achieves acceptable levels of validity and practicality. Therefore, expert judgment should be viewed not merely as an evaluation stage but as a collaborative process for improving instructional quality.

The implementation of the ADDIE model also proved highly effective in organizing the development process systematically. Each phase of the model contributed distinct functions that collectively strengthened product quality. The analysis stage ensured that the instructional problem was accurately identified; the design stage translated learning needs into instructional specifications; the development stage transformed the design into a functional multimedia product; the implementation stage provided opportunities for expert evaluation; and the evaluation stage enabled continuous improvement through formative revisions. This systematic process reflects the instructional systems design philosophy proposed by Branch (2020), which emphasizes that effective educational products emerge from careful planning, continuous evaluation, and evidence-based revisions rather than spontaneous development.

From a pedagogical perspective, the developed learning media also supports the transition from teacher-centered instruction toward student-centered learning. Interactive multimedia encourages students to control their own learning pace, revisit instructional videos repeatedly, complete quizzes independently, and review instructional materials whenever necessary. Such flexibility supports the development of learner autonomy, one of the essential competencies required in twenty-first-century education. Modern educational paradigms increasingly emphasize independent learning, critical thinking, digital literacy, and lifelong learning skills rather than simple memorization of factual knowledge (OECD, 2021). Interactive learning media therefore become valuable instructional tools that facilitate these broader educational objectives.

Furthermore, the multimedia product has particular relevance for practical subjects within Islamic Religious Education. Learning worship practices requires procedural understanding that develops through repeated observation and practice rather than through verbal explanation alone. Instructional videos demonstrating correct prayer movements, ablution procedures, and accompanying recitations provide visual models that students can imitate repeatedly both inside and outside the classroom. This flexibility extends learning opportunities beyond limited classroom hours and supports self-directed learning at home. Previous research by Hairani et al. (2024) similarly reported that interactive digital media significantly improved students' understanding and engagement in Islamic Religious Education by providing concrete visualizations of abstract religious concepts.

The findings also support previous studies demonstrating the positive contribution of technology-enhanced learning to student engagement and instructional effectiveness. Sari et al. (2023) reported that innovative instructional media significantly improve classroom interaction, learning motivation, and conceptual understanding. Likewise, Azzahra et al. (2024) found that technology-based learning environments increase active student participation by creating more engaging instructional experiences. The consistency between the present findings and previous research strengthens the argument that integrating interactive multimedia into Islamic Religious Education represents an effective strategy for improving instructional quality.

Beyond improving classroom instruction, this study also contributes to the broader discourse on educational innovation. The successful development of highly feasible learning media demonstrates that technology integration should always be grounded in sound pedagogical principles rather than driven solely by technological novelty. Educational innovation becomes meaningful only when technology enhances learning effectiveness, supports curriculum implementation, and addresses authentic classroom needs. Consequently, teachers require not only technological competence but also instructional design competence that enables them to develop learning resources systematically and purposefully. This perspective is consistent with the Technological Pedagogical Content Knowledge (TPACK) framework, which argues that effective technology integration depends upon the balanced interaction between technological knowledge, pedagogical knowledge, and content knowledge (Mishra & Koehler, 2006).

Overall, the discussion confirms that the developed interactive PAI learning media possesses strong pedagogical, technical, and instructional value. The high feasibility ratings provided by expert validators demonstrate that the product satisfies established educational quality standards while addressing authentic classroom challenges. The integration of multimedia principles, systematic instructional design, and expert judgment produced a learning resource capable of promoting more active, meaningful, and student-centered learning experiences. Therefore, the findings provide empirical support for the continued development of interactive instructional media in Islamic Religious Education and encourage educational institutions to adopt systematic development models such as ADDIE to improve the quality of teaching and learning

CONCLUSION

This study successfully developed an interactive learning media for Islamic Religious Education (PAI) on the topic of worship practices using the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) instructional design model. The findings demonstrate that the systematic application of the Research and Development (R&D) approach effectively produced a learning medium that meets both pedagogical and technical quality standards. The needs analysis revealed that conventional teacher-centered instruction, characterized by lectures and limited demonstrations, reduced students' engagement and hindered their understanding of practical worship materials. These findings highlight the necessity of innovative instructional media capable of promoting active participation and meaningful learning experiences.

The expert validation results confirmed the high feasibility of the developed product. The material expert awarded a feasibility score of 94%, while the media expert assigned 93%, resulting in an overall feasibility score of 93.5%, categorized as very feasible. These findings indicate that the learning media is accurate in terms of content, appropriate for curriculum implementation, visually attractive, technically functional, and user-friendly. Revisions made based on expert feedback further enhanced the quality of the product by improving navigation, visual presentation, contextual examples, and instructional clarity.

The study also demonstrates that integrating multimedia elements—including instructional videos, illustrations, animations, narration, and interactive quizzes—creates a more engaging and student-centered learning environment. Such integration supports meaningful learning by enabling students to visualize worship procedures, practice independently, and revisit learning materials according to their individual needs. Consequently, the developed media has considerable potential to improve students' understanding, motivation, and participation in Islamic Religious Education.

Overall, this research confirms that interactive learning media developed through a systematic instructional design process and validated through expert judgment can serve as an effective innovation for enhancing the quality of PAI instruction in senior high schools. Future studies are recommended to evaluate the effectiveness of the developed media through large-scale classroom implementation and experimental research to measure its impact on students' learning outcomes, practical worship skills, motivation, and long-term learning achievement

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