Development of Learning Media Using Google Site in Qur'an Hadith Subjects at Madrasah Aliyah Negeri 1 Medan

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Abstract

Background: Low student motivation and poor cognitive outcomes in the Qur'an Hadith subject at MAN 1 Medan indicate the need for more interactive learning media. Traditional tools such as PowerPoint and videos are less engaging for digital-native students.

Aims: This study aims to develop a Google Sites–based digital learning medium on the topic "Competing in Goodness" tailored for eleventh-grade students to improve learning outcomes and engagement.

Methods: The study employed the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation) with 35 students and 3 teachers as participants. Data were gathered through questionnaires, expert validation sheets, and post-tests.

Result: The needs analysis showed high student interest in digital media (94%) and strong teacher support (92%). Expert validation indicated high feasibility (91–93%). Trial tests demonstrated increased practicality (up to 94%) and improved post-test scores in the experimental group (82.9) versus the control group (77.0).

Conclusion: Google Sites based learning media is valid, practical, and effective for enhancing motivation and cognitive outcomes in Qur'an Hadith education at the senior high school level.

A. Introduction

The rapid development of digital technology in the era of the Industrial Revolution 5.0 has significantly transformed the educational landscape, shifting teaching methods from conventional to more interactive, flexible, and technology-based approaches indicating the importance of designing digital environments that support active participation (Said et al., 2023). Globally, education increasingly emphasizes 21st-century competencies such as critical thinking, communication, collaboration, creativity, and especially digital literacy. Digital literacy, which includes skills in evaluating information, creating digital content, and engaging in safe online collaboration is now recognized as a foundational component of modern curricula and essential for student success in technology-driven learning environments (Pangrazio, 2020; Saguni, 2019). These competencies are essential to prepare students for life and work in an increasingly digital and interconnected world (Al-Fraihat et al., 2020). In addition, the success of e-learning platforms is significantly influenced by system quality, content usability, and learner satisfaction, which are critical for ensuring effective digital learning delivery and engagement. In Indonesia, despite curriculum reforms and the introduction of digital platforms, many schools still struggle to implement technology effectively (Boyd., et al 2024; Dwiyogo, 2018; Hobbs et al., 2022; Perez-Rosas et al., 2018). This situation is also evident at Madrasah Aliyah Negeri (MAN) 1 Medan, one of the top Islamic senior high schools in Medan. Based on observations and interviews with Qur'an Hadith teachers, the learning process still relies heavily on PowerPoint and YouTube videos—media that are passive, one-directional, and lack interactivity

(Barkati & Cahyadi, 2024). This is especially problematic for students who belong to the digital-native generation and are accustomed to dynamic, technology-rich learning environments (Maharani, 2024).

As a result, student learning outcomes in the Qur'an Hadith subject remain low. In class XI Science B-2, only 25% of students reached the Minimum Competency Criteria (KKM) of 78, with the remaining 75% falling below the standard (Observation Data, 2024). Furthermore, student motivation is weak—many are passive, easily distracted, and disengaged from the learning process (Nurdyansayah, 2019). These facts highlight a clear gap between the ideal expectations of interactive, engaging, and student-centered education and the actual conditions in the classroom. There is a pressing need to develop alternative solutions through the implementation of interactive digital media that can improve student motivation, understanding, and learning outcomes.

Google Site is one such potential solution. It allows teachers to present content in multiple formats (text, images, videos, interactive quizzes) within a single, easy-to-navigate digital interface (Lestari & Safitri, 2023; Wulandari & Zuhroh, 2023). Additionally, it can be integrated with other Google tools such as Drive, Docs, and Forms to enhance learning resources (Said, 2023). Empirical studies support the effectiveness of Google Site–based learning. Munawaroh & Indah (2022) reported a content validity of 93.11%, practicality of 97.89%, and a significant increase in student motivation from 64% to 92%. Similarly, Nurliswati and Nurlizawati (2022) found that Google Site facilitates flexible and meaningful learning experiences. Maharani (2024) further emphasized its strength in visualizing complex concepts and encouraging active participation. However, no prior study has specifically developed Google Site–based media for the Qur'an Hadith subject at MAN 1 Medan. Most previous studies focus on general or non-religious subjects. Thus, this research addresses a clear gap in the literature by focusing on the local context, religious content, and the needs of digital-native learners in Islamic education.

This study offers novelty in designing interactive learning media based on Google Site tailored to the Qur'an Hadith subject particularly the topic of "Competing in Goodness" which is relevant for developing students' spiritual character and moral values. Therefore, this study will be conducted under the title: "Development of Learning Media Using Google Site for the Qur'an Hadith Subject at Madrasah Aliyah Negeri 1 Medan."

B. Research Methods

This study employed a Research and Development (R&D) method aimed at creating a digital learning medium to enhance the learning process of the Qur'an Hadith subject. The development model used in this study was the ADDIE model, which consists of five phases: Analysis, Design, Development, Implementation, and Evaluation. This model was selected due to its systematic, iterative approach that ensures the validity, practicality, and effectiveness of the developed media before its implementation in a broader context. The object of this research was the digital learning media developed using Google Sites, while the research subjects were eleventh-grade science students at Madrasah Aliyah Negeri (MAN) 1 Medan. A random sampling technique was used during the needs analysis stage, involving 35 students to gather initial input and determine students' needs and preferences regarding digital learning tools.

The research was conducted during the even semester of the 2024/2025 academic year at MAN 1 Medan, located on Jl. Willem Iskandar No. 7 B, Medan Tembung. The research activities were carried out over several months, covering the full ADDIE model process from planning through final evaluation. The research procedures followed the stages of the ADDIE model.
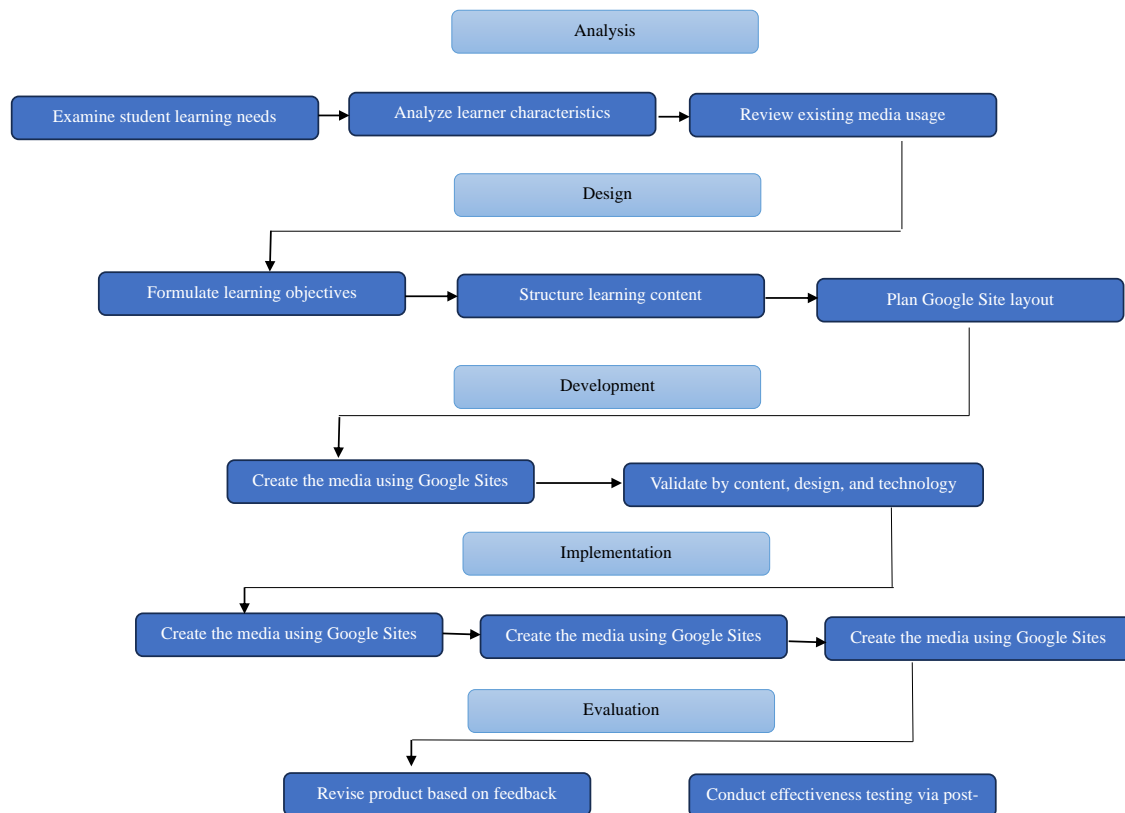
Figure 1. Stage of the ADDIE Model Development

In the analysis stage, student learning needs, characteristics, and existing media usage were examined. In the design stage, learning objectives were formulated, and the structure of the learning content and layout of the Google Site were prepared. During the development stage, the media was validated by experts in content, instructional design, and digital technology, aligning with principles of usability and instructional quality. Modern best practices emphasize the systematic evaluation of experts to ensure coherence between learning goals, user needs, and interface design. For instance, Shernoff et al. (2020) conducted a user-based evaluation of a virtual teacher-training platform and found that iterative usability testing combined with expert feedback on instructional design significantly improved both learner experience and pedagogical alignment. The implementation stage involved three levels of field testing: individual testing, small group testing, and large-scale (field) testing. Lastly, the evaluation stage included product revision and effectiveness testing based on post-test results (Shafiq et al., 2024; Yusoff, 2019).

The expert validation questionnaire data were analyzed by calculating content validity indices and percentage agreement scores to determine the feasibility of the developed learning media. Following best practices for content validation, the Item-Level Content Validity Index (I-CVI) and Scale-Level CVI (S-CVI) were computed using methods outlined by Yusoff (2019), which involve dichotomizing expert ratings (e.g., "relevant" vs. "not relevant") and calculating the proportion of agreement.

Table 1. Product Validation Criteria

Percentage (%)	Validity Level	Description
81,00 – 100,00	Very valid	Can be used without revision
61,00 – 80,00	Valid	can be used with minor revisions
41,00 – 60,00	Less valid	Not recommended to be used because it has been extensively revised.
21,00 – 40,00	Invalid	Not be used, needs major revision.
00,00 – 20,00	Very Invalid	Not be used

These were used to collect both qualitative and quantitative data related to media feasibility, practicality, and effectiveness. The research instruments used consisted of expert validation sheets, student and teacher practicality questionnaires, observation checklists, and interview guides. The data analysis plan included

both descriptive and inferential statistical techniques. Descriptive statistics were used to assess the validity and practicality using Likert scale interpretations. Inferential statistics included the Lilliefors test for data normality, Fisher's test for homogeneity, and an independent sample t-test to compare the learning outcomes between students who used the media and those who did not. This research was limited in scope to the topic of "Competing in Goodness" from the Qur'an Hadith subject, targeting only one class of eleventh-grade science students at MAN 1 Medan. The duration of implementation was also limited to two learning sessions, and the results may not be generalized to other subjects or student populations without further research.

The novelty of this research lies in its specific focus and contextual adaptation of Google Sites-based learning media for the *Qur'an Hadith* subject at Madrasah Aliyah Negeri 1 Medan, which has not been addressed in previous studies. This study is the first to develop and evaluate digital learning media using Google Sites specifically for *Qur'an Hadith*, distinguishing it from earlier research that generally applied such platforms to general or non-religious subjects. Moreover, the topic selected—*Competing in Goodness* (*fastabiqul khairat*)—positions the media not only as a tool for delivering content but also as a means to strengthen students' moral and spiritual values through interactive technology.

Another unique aspect of this study is its localized implementation, as the development and testing were conducted directly in a real classroom at MAN 1 Medan, tailored to the needs of digital-native students in Islamic senior high schools. The media was validated by experts in content, instructional design, and digital technology, and it underwent three stages of trials (individual, small group, and field testing) using the ADDIE development model. The research also demonstrated a significant positive impact on students' learning outcomes, as shown by the post-test score comparison between the experimental and control groups. Students who used the digital media achieved a higher average score, exceeding the Minimum Competency Criteria (KKM).

In conclusion, the novelty of this research lies in its development of digital media for religious education contextually and systematically, its integration of spiritual values into digital learning, and the quantitative evidence of its effectiveness in improving student learning outcomes. This presents a valuable contribution to the modernization of Islamic education through technology while maintaining the authenticity of religious values.

C. Results and Discussion

1. Results

Product Development Results

The development of instructional media using Google Sites for Qur'an Hadith subjects at MAN 1 Medan was carried out through several stages: needs analysis, design, development, implementation, and evaluation. Each stage involved structured validation and testing processes.

(1) Student Needs Analysis

A total of 35 students participated in the needs analysis survey, which aimed to assess the urgency of integrating digital media in Qur'an and Hadith instruction. The results are summarized in Table 1 and Figure 1 below:

Table 2. Student Needs Analysis Results

| Aspect	Percentage	Interpretation
Interest and need	82%	Highly Needed
Effectiveness	84%	Highly Needed
Practicality	86%	Needed
Independent Learning	94%	Highly Needed
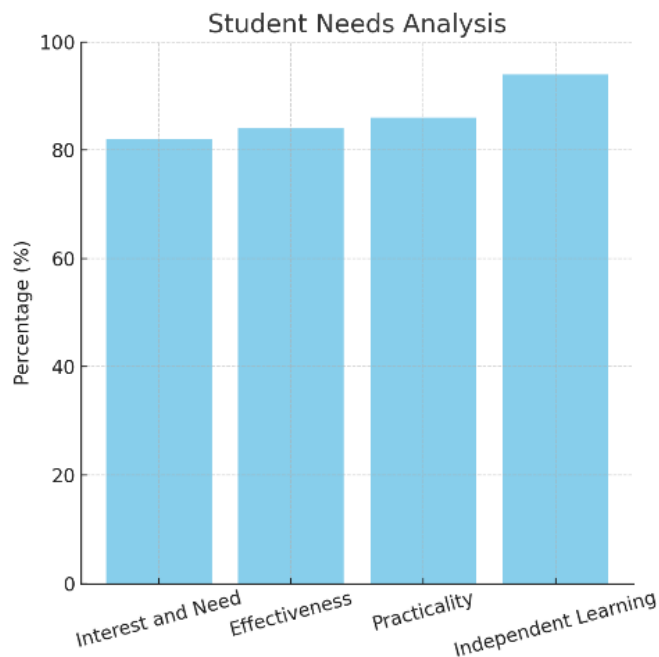
Figure 2. Analysis of Student Needs

The data presented in Table 1 reveal compelling evidence of students' strong preference for integrating digital learning. The analysis demonstrates that independent learning received the highest score at 94%, indicating that students are seeking autonomy in their learning process. This finding aligns with the characteristics of digital-native learners who prefer self-directed and flexible learning approaches. The effectiveness aspect scored 84%, suggesting that students recognize the potential of digital media to enhance their understanding of Qur'an Hadith concepts. The interest and need category achieved an 82% success rate, reflecting students' enthusiasm for innovative learning methods that move beyond traditional textbook-based instruction. Practicality scored 86%, indicating that students value user-friendly and accessible learning tools. These findings collectively demonstrate a significant gap between current teaching methods and students' learning preferences, highlighting the urgent need for digital media integration in Islamic education

Teacher Needs Analysis

Three Qur'an Hadith teachers also responded to the needs survey. All expressed positive responses toward integrating Google Sites media into their instruction.

Table 3. Teacher Needs Analysis Results

Aspect	Percentage	Interpretation
Interest and need	92%	Highly Needed
Effectiveness	92%	Highly Needed
Practicality	92%	Highly Needed
Independent Learning	92%	Highly Needed
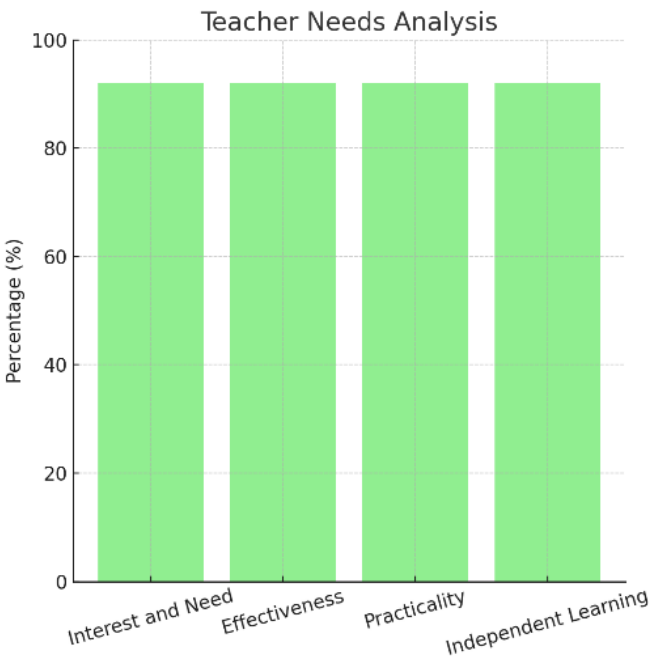
Figure 3. Teacher Needs Analysis

The teachers' needs analysis, presented in Table 2, demonstrates remarkable consistency across all evaluated aspects, with each category achieving a score of exactly 92%. This uniformity suggests a strong consensus among educators regarding the necessity of integrating digital media. The consistently high percentage scores across all aspects support the conclusion that teachers view digital media integration as an effective solution to address the learning needs of contemporary students. The unanimous support for independent learning suggests that teachers understand the importance of fostering student autonomy and self-regulation in the learning process. The consistently high scores across interest, effectiveness, and practicality dimensions indicate that teachers perceive Google Sites as a viable solution that can address multiple educational challenges simultaneously. This teacher buy-in is crucial for successful implementation, as educator support significantly influences the adoption and effectiveness of new instructional technologies.

(2) Validation Results by Experts

Three experts assessed the developed media, one each for material, instructional design, and digital media. All gave high ratings.

Table 4. Expert Validation Scores

Expert Type	Score (%)	Feasibility
Material Expert	92%	Very Feasible
Instructional Design	93%	Very Feasible
Media Expert	91%	Very Feasible

Figure 4. Expert Validation Results

The expert validation results shown in Table 3 provide strong evidence of the media's quality and feasibility. Each expert assessed the media using a structured rubric with specific aspects and indicators. The instructional design expert evaluated elements such as the clarity of learning objectives, logical sequencing of content, alignment with competency standards, and suitability of learning activities. The high score of 93% indicates that the media effectively apply principles of instructional design and support effective learning processes.

The material expert focused on aspects including the accuracy of Qur'an Hadith content, its relevance to the topic "Competing in Goodness", alignment with Islamic educational values, and age appropriateness for eleventh-grade students. The expert awarded a 92% score, confirming that the content is theologically sound, comprehensive, and appropriate for the intended learners.

The media expert assessed technical and visual aspects, including interface design, navigational ease, multimedia integration (text, images, and videos), and device compatibility. The 91% score demonstrates that the media meets professional standards for educational technology and provides a user-friendly experience.

The narrow score range from 91% to 93% across all three experts reflects consistent quality in content, design, and technical implementation, thereby reinforcing the media's overall readiness for use in the classroom.
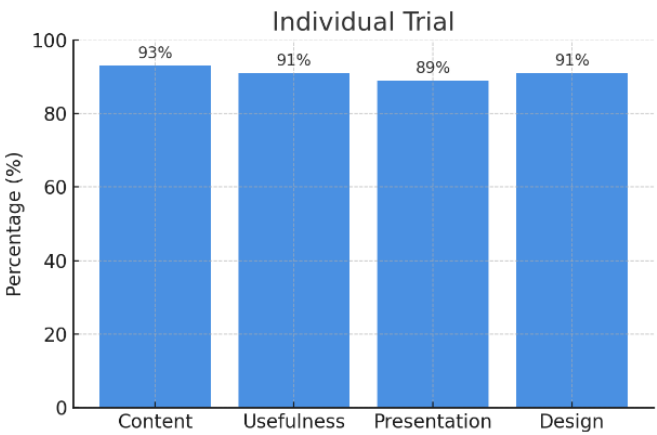
(3) Trial Results

a. Individual Trial (3 Students)

Initial testing with diverse students (high, medium, and low achievers) yielded strong responses.

Table 5. Individual Trial Results

Aspect	Score (%)	Interpretation
Content	93%	Very Good
Usefulness	91%	Very Good
Presentation	89%	Very Good
Visual Design	91%	Very Good

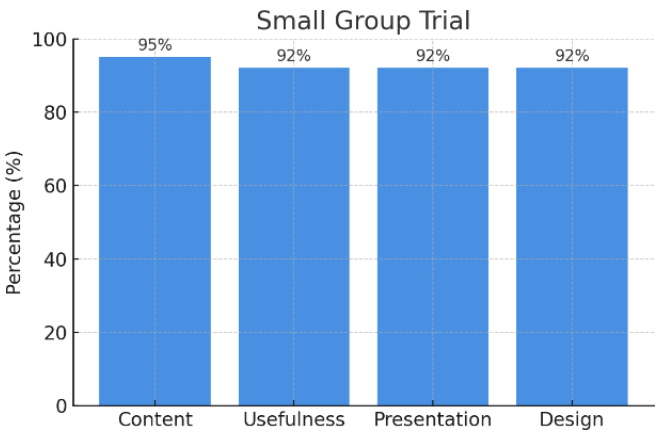**Figure 5.** Results of Individual Testing

The individual trial results presented in Table 4 demonstrate the media's effectiveness across diverse learning abilities. The content aspect received the highest score at 93%, indicating that students found the Qur'an Hadith material well-organized, comprehensive, and easy to understand. This high score is particularly significant as it represents feedback from students with varying academic abilities, suggesting that the content is accessible to all learners. The usefulness and visual design aspects both scored 91%, reflecting students' appreciation for the media's practical value and aesthetic appeal. The presentation aspect scored 89%, the lowest among the four categories, yet still within the "Very Good" range. This suggests minor areas for improvement in information layout or content flow. The consistently high scores across all aspects indicate that the media successfully addresses different learning preferences and provides a positive user experience regardless of individual academic performance levels.

b. Small Group Trial (9 Students)

Testing was extended to a small group of students with mixed abilities.

Table 6. Small Group Trial Results

Aspect	Score (%)	Interpretation
Content	95%	Very Good
Usefulness	92%	Very Good
Presentation	92%	Very Good
Visual Design	92%	Very Good

Figure 6. Results of The Small Group Test

The small group trial results in Table 5 show improvement across most evaluation categories compared to the individual trial. The content score increased from 93% to 95%, suggesting that group interaction and discussion may have enhanced students' appreciation of the material's quality. The usefulness aspect

improved from 91% to 92%, indicating that students recognize the media's practical benefits more clearly when using it in a collaborative setting. Both presentation and visual design scores increased to 92%, representing significant improvements from the individual trial scores of 89% and 91% respectively. This upward trend suggests that the media becomes more effective as more students interact with it, possibly due to peer learning effects and collaborative engagement. The consistent improvement across all aspects provides strong evidence that the media is well-designed for both individual and group learning environments.

c. Field Trial (35 Students)

The final testing involved the whole class. The results confirm the media's effectiveness.

Table 7. Field Trial Results

Aspect	Score (%)	Interpretation
Content	95%	Very Good
Usefulness	95%	Very Good
Presentation	94%	Very Good
Visual Design	95%	Very Good
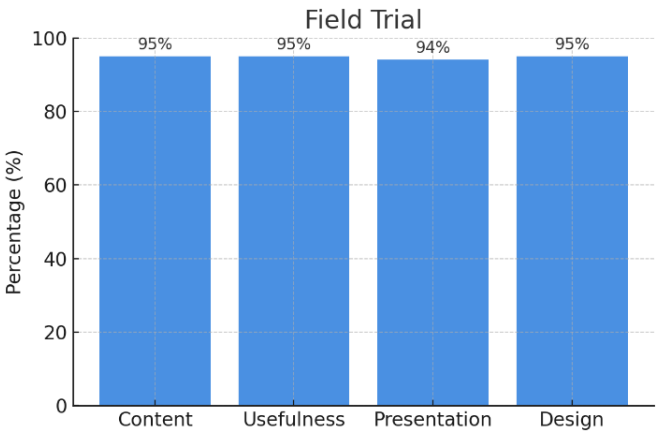
**Figure 7.** Results of The Field Trial

The field trial results presented in Table 6 represent the culmination of the testing process with the full target population. The content, usefulness, and visual design aspects all achieved a score of 95%, the highest recorded throughout the testing phases. This consistent excellence across multiple dimensions indicates that the media effectively meet the diverse needs of a comprehensive classroom. The presentation aspect scored 94%, showing continued improvement from earlier testing phases. These results demonstrate that the media maintains its effectiveness when scaled up to a full classroom implementation. The high scores across all aspects suggest that the Google Sites-based learning media can successfully replace or supplement traditional teaching methods while maintaining or improving educational quality. The progressive improvement from individual trial to field trial indicates that the media benefits from classroom dynamics and peer interaction, making it particularly suitable for collaborative learning environments.

(4) Post-Test Score Comparison

To assess the learning impact, students were divided into an experimental group (who used the media) and a control group (who used textbooks and PowerPoint presentations).

Table 8. Post-Test Score Comparison

Group	Average Score	Description
Experimental Group	82.9	Higher Learning Outcome
Control Group	77.0	Lower Learning Outcome
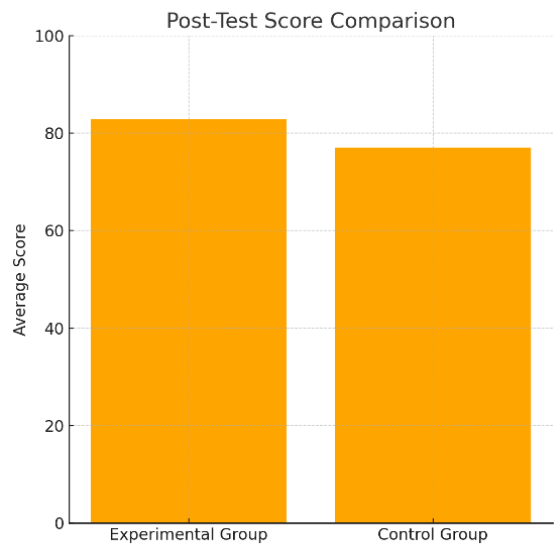
**Figure 8.** Results of The Experimental Class and Control Class

The post-test comparison results in Table 7 provide quantitative evidence of the media's effectiveness in improving learning outcomes. The experimental group, which utilized the Google Sites-based learning media, achieved an average score of 82.9, significantly higher than the control group's average of 77.0. In this study, a pre-test was not administered. The evaluation of learning outcomes was conducted using post-test scores only, comparing the performance of the experimental group (which used the Google Sites–based media) and the control group (which used conventional learning methods). Although this approach does not allow for measuring improvement within each class, it can still provide insights into the relative effectiveness of the learning media when applied under similar conditions. Therefore, the observed difference in post-test scores (82.9 vs. 77.0) reflects performance variation between the two groups, rather than individual learning gains over time.

(5) Practicality Evaluation

Evaluations were conducted by both students and teachers.

Table 9. Practicality Assessment

Evaluator	Score (%)	Interpretation
Students	94%	Very Practical
Teachers	93%	Very Practical
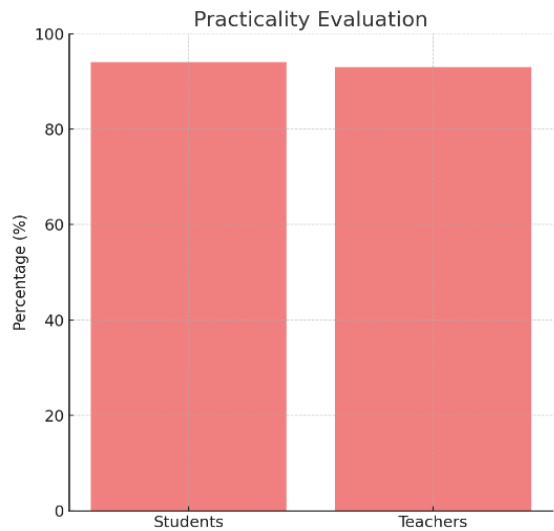
Figure 9. Results of The Practicality Test for Students and Teachers

The practicality assessment results in Table 8 demonstrate strong consensus between students and teachers regarding the media's usability. Students rated the media's practicality at 94%, indicating that they found the Google Sites interface intuitive, accessible, and easy to navigate. This high score suggests that the media does not present technical barriers that might impede learning. Teachers rated the practicality at 93%, showing that educators find the media suitable for classroom integration and manageable within their existing teaching workflows. The minimal difference between student and teacher ratings (1%) indicates alignment between user experience and instructional requirements. This consensus is crucial for successful implementation, as it suggests that both primary user groups can effectively utilize the media without extensive training or technical support. The high practicality scores also indicate that the media can be easily adopted by other schools and teachers with similar technological resources and capabilities.

2. Discussion

The findings of this study align with and reinforce previous research on the development of digital learning media using Google Sites in religious education. For instance, Munawaroh dan Indah (2022) reported that Google Sites–based learning tools reached a validity score of 93.11% and enhanced student motivation significantly, rising from 64% to 92%. This parallels the current study's expert validation results, which ranged from 91% to 93%, indicating consistent feasibility across instructional, material, and media aspects. Similarly, the work of Hidayatullah (2023)A study, which focused on Akidah Akhlak learning, found that using Google Sites media improved students' critical thinking and learning engagement. These outcomes are echoed in this study through the practicality scores of 94% from students and 93% from teachers, which suggest high levels of user satisfaction and accessibility in the context of the Qur'an and Hadith. In addition, post-test scores in this study demonstrated a 5.9-point improvement over traditional methods, aligning with findings by Majid (2024), who concluded that Google Sites media significantly increased learning outcomes in Islamic subjects at SMAN 6 Baru (Pangrazio, 2020) ; Duradoni, M., 2022).

This echoes findings Ningsih dan Haryanto, (2025) who reported that Google Sites–based learning significantly improved science learning outcomes in Indonesian secondary schools. This supports the current study's findings, where the "Independent Learning" aspect received the highest student need score (94%) during the analysis stage. These parallels demonstrate that Google Sites is a broadly effective platform adaptable to various disciplines, including Qur'an Hadith, when aligned with contextual and pedagogical needs. Moreover, research by Sahduari dan Futihatu Saidah (2024) focusing on Qur'an Hadith learning in MAN Kota Palangka Raya confirms the media's role in increasing engagement and motivation. Although their study used Google Sites in a different region and grade level, the effectiveness and practicality scores in both studies reinforce the broader applicability of Google Sites–based media across Indonesian madrasahs.

These convergences between this study and prior research highlight the robustness of the findings and support the argument that integrating interactive digital platforms, such as Google Sites, into Islamic education not only enhances engagement but also improves cognitive learning outcomes. Importantly, while other studies have explored similar platforms, this study fills a notable gap by focusing specifically on the topic of "Competing in Goodness" in Qur'an Hadith education at MAN 1 Medan, providing both contextual and thematic originality.

2.1. Implications

The findings of this study provide several important implications for the field of Islamic education, particularly in the context of integrating technology into the Qur'an Hadith subject at the Madrasah Aliyah level: (Maartje Boer., et al 2022)

1. Improved Learning Outcomes through Digital Media
   The significant difference in post-test scores between the experimental group (82.9) and the control group (77.0) indicates that the use of Google Sites-based media can enhance students' academic achievement. This suggests that digital media can serve as an effective alternative or complement to traditional teaching methods in Qur'an Hadith instruction.

2. Increased Student Engagement and Autonomy
   The high practicality score from students (94%) and the strong result in the "Independent Learning" aspect (94%) during the needs analysis phase show that students are more engaged and motivated when using interactive, web-based platforms (Dixson, 2015), indicating the importance of designing digital environments that support active participation. This implies that digital tools like Google Sites can foster greater student independence, which is essential in preparing learners for 21st-century education.

3. Teacher Readiness and Support
   Teachers' responses, with consistently high scores across all assessed aspects (92%), suggest that educators are not only receptive to using technology in their teaching but also recognize its benefits. This supports the implication that teacher training and institutional support can accelerate the adoption of digital platforms in Islamic schools.

4. Media Scalability and Classroom Integration
   The consistent improvement from individual to group and field trials confirms that Google Sites–based media is effective in various learning settings, from personal study to full-class use. Therefore, this media can be scaled and adapted across different classes and schools with similar characteristics.

5. Preservation of Religious Content Integrity
   The high validation score from the content expert (92%) implies that digital media can be used to present religious material accurately and respectfully. This ensures that modern instructional methods do not compromise the theological and spiritual values of the Qur'an Hadith subject.

In summary, the study suggests that integrating digital learning media, such as Google Sites, into Islamic education can significantly enhance learning outcomes, increase engagement, and maintain religious integrity—all while aligning with the learning needs of today's digital-native students. These implications are relevant not only for teachers and curriculum developers but also for policymakers seeking to modernize Islamic education in Indonesia.

2.2. Research Contribution

This study makes several significant contributions to the field of educational technology in Islamic education. First, it provides a validated framework for integrating free, accessible web-based tools into religious instruction, demonstrating that effective digital learning environments can be created without substantial financial investment. This is particularly valuable for Islamic educational institutions that may have limited technology budgets but seek to enhance their instructional quality. Second, the study addresses a gap in the literature by focusing specifically on digital media development for Qur'an Hadith subjects, an area that has received limited attention in previous research. The systematic application of the ADDIE model to religious content development provides a replicable methodology for other educators and researchers working in similar contexts. Third, the research demonstrates how traditional religious subjects can be successfully adapted to digital formats while maintaining their educational integrity and spiritual significance. The focus on "Competing in Goodness" as a topic shows how moral and spiritual development can be enhanced through interactive digital media, providing a model for character education in the digital age. Finally, the study contributes to understanding how digital-native learners can be effectively engaged in religious education through media that aligns with their technological expectations while deepening their spiritual understanding.

2.3. Limitations

Several limitations should be acknowledged in interpreting these results. The study was conducted at a single institution (MAN 1 Medan) with a relatively homogeneous student population, which may limit the generalizability of findings to other Islamic educational contexts with different cultural, socioeconomic, or technological environments. The sample size, while adequate for the research design, represents a limited demographic that may not reflect the diversity of Islamic education settings across Indonesia or other countries. The study's duration was limited to two learning sessions, which provides insight into immediate learning outcomes but does not address long-term retention or sustained engagement with the digital media. Longitudinal studies would be necessary to determine whether the observed improvements in learning outcomes and engagement persist over extended periods. The research focused exclusively on one topic ("Competing in Goodness") within the Qur'an Hadith curriculum, and results may vary when the media is applied to other topics with different conceptual complexity or content types. Additionally, the study did not examine potential negative effects of increased screen time or digital dependency that might result from the widespread adoption of such media. The comparison between experimental and control groups, while showing positive results, was conducted over a relatively short period and may not account for other variables that could influence learning outcomes, such as teacher enthusiasm, novelty effects, or seasonal variations in student motivation and performance.

2.4. Suggestions

Based on the research findings, several recommendations are proposed to support the broader implementation of digital learning media in Islamic education. Future research should explore the long-term effectiveness of Google Sites-based media across multiple institutions and various topics within the Qur'an Hadith subject or other areas of Islamic education. This would enhance the generalizability and sustainability of the digital media's application. For practitioners, it is important to establish regular feedback mechanisms from both teachers and students, develop comprehensive training programs for educators, and provide clear adaptation guidelines to ensure the media can be effectively implemented in different classroom contexts. Educational institutions should also develop supportive policies, offer professional development opportunities, and foster partnerships with technology providers to maintain long-term integration of digital learning tools. These combined efforts aim to strengthen the positive impact observed in this study while addressing its limitations and encouraging the successful adoption of innovative, technology-enhanced learning in Islamic schools.

D. Conclusion

This study concludes that Google Sites–based learning media is a viable and effective innovation for Qur'an Hadith instruction at MAN 1 Medan. Developed through the ADDIE model, the media addressed students' need for interactive, independent learning and gained strong support from teachers and experts. The integration of technology not only improved learning outcomes but also enhanced engagement and accessibility. These findings suggest that digital tools like Google Sites can bridge the gap between traditional Islamic education and modern learning expectations, making it more relevant and impactful.

E. Acknowledgment

F. Author Contribution Statement

RL conceptualized the research problem, designed the study methodology, developed the Google Sites-based learning media, collected and analyzed data, and drafted the manuscript. AH provided extensive supervision throughout the research process, contributed to the theoretical framework development, guided the data analysis procedures, and provided critical revisions to improve the manuscript quality. DE contributed to the research design refinement, assisted in expert validation processes, supported data interpretation, and provided valuable feedback for manuscript improvement. All authors reviewed and approved the final version of the manuscript.

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