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Development Of Wordwall-Based Educational Game Learning Media for Students at SDIT Al Mawaddah Warrahmah Kolaka

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Abstract
This study aims to develop Wordwall-based educational game learning media for students at SDIT Al Mawaddah Warrahmah Kolaka and to determine its level of validity, practicality, and effectiveness in improving students' learning interest and learning outcomes. This research employed a Research and Development (R&D) method using the ADDIE development model, which consists of analysis, design, development, implementation, and evaluation stages. The study was conducted at SDIT Al Mawaddah Warrahmah Kolaka from January to February 2026, involving elementary school students as research subjects. Data collection techniques included interviews, observations, teacher and student response questionnaires, and learning outcome tests. Data analysis was carried out through validity analysis, practicality analysis, analysis of teacher and student responses, and effectiveness analysis of the learning media. The results showed that the developed Wordwall learning media was categorized as valid, practical, and effective for classroom use. Student responses reached 85.41%, indicating that the media was feasible, while teacher responses reached 90.66%, indicating that the media was highly practical. Furthermore, the effectiveness test result showed a percentage of 68.75%, categorized as effective in improving students' learning outcomes. Therefore, Wordwall-based educational game media can serve as an engaging and interactive instructional alternative to enhance students' learning interest and academic achievement in elementary school.

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1. INTRODUCTION

The rapid development of information and communication technology in the digital era requires innovation in the learning process in schools. The integration of technology in education no longer functions merely as a supporting tool but also as a strategic means to improve the quality of learning so that it becomes more effective, interactive, and aligned with students' characteristics. Learning processes that are still dominated by conventional methods, such as the use of textbooks and PowerPoint presentations, tend to make students less active and easily bored, which ultimately affects their learning interest and academic achievement.

Learning interest and motivation play a crucial role in determining students' success. Learning motivation refers to both internal and external drives that encourage individuals to achieve learning goals optimally. Students who possess high levels of interest and motivation tend to actively participate in classroom activities, while low motivation can lead to limited engagement and unsatisfactory learning outcomes.

Based on observations and interviews conducted at SDIT Al Mawaddah Warrahmah Kolaka, it was found that technology-based instructional media used by teachers were still limited to PowerPoint presentations and printed textbooks. The lack of innovative media variation influenced students' learning interest, particularly in the Al-Qur'an Hadith subject for fourth-grade students. Students showed greater enthusiasm for interactive and game-based activities, which align with the characteristics of elementary school learners who are active, dynamic, and enjoy challenges.

One alternative instructional medium that can be implemented is Wordwall-based educational games. Wordwall is a web-based platform that provides various interactive game templates that can be adapted to instructional materials. Through this platform, teachers can present learning content in the form of quizzes, matching exercises, spinning wheels, and other interactive activities that enhance student engagement. Moreover, the use of Wordwall supports the development of students' digital literacy from an early age.

Previous studies have shown that game-based learning media can improve students' motivation and learning outcomes. However, each product development has different characteristics depending on the educational level, subject matter, and students' needs in specific school contexts. Therefore, it is necessary to develop Wordwall-based instructional media specifically designed according to the needs and characteristics of students at SDIT Al Mawaddah Warrahmah Kolaka.

Based on the above explanation, this study aims to develop Wordwall-based educational game media and to determine its validity, practicality, and effectiveness in improving students' learning interest and learning outcomes at SDIT Al Mawaddah Warrahmah Kolaka.

2. RESEARCH METHODS

2.1.Research Design

This study employed a Research and Development (R&D) approach aimed at developing an instructional product and examining its feasibility, practicality, and effectiveness. The focus of this research was not only to design a learning media product but also to test its quality and suitability for classroom implementation. Through this approach, the developed media was systematically evaluated before being recommended for broader use.

The development model applied in this study was the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. This model was chosen because it provides a structured framework that guides researchers in producing educational products based on identified learning needs. Each stage plays an essential role in ensuring that the product aligns with instructional objectives.

The R&D approach was selected because it enables systematic development and testing of educational products to ensure that the final product is valid, practical, and effective for classroom use. By following clear procedural steps, the researcher was able to identify classroom problems, design appropriate solutions, and evaluate the outcomes in a measurable manner.

The development process was conducted iteratively, allowing revisions at each stage based on expert validation and field testing results. This iterative process ensured continuous improvement of the product, so that the final version of the Wordwall-based educational game media met the required educational standards and addressed students' learning needs effectively.

2.2.Research Site and Participants

This research was conducted at SDIT Al Mawaddah Warrahmah Kolaka, located on Jalan Pondok Pesantren No. 10, Lamokato Village, Kolaka District, Kolaka Regency, Southeast Sulawesi, Indonesia. The school was selected as the research site based on preliminary observations indicating the need for more innovative and interactive instructional media to support classroom learning.

The study was carried out from January to February 2026. The research timeline covered the stages of needs analysis, product design and development, implementation, and evaluation. This period allowed the researcher to conduct systematic development and testing of the instructional media.

The participants of this study were fourth-grade students of SDIT Al Mawaddah Warrahmah Kolaka. The selection of fourth-grade students was based on the relevance of the developed learning material and the suitability of digital game-based media for their learning characteristics.

In addition to students, subject teachers were also involved in the research process. Teachers participated in the validation and practicality assessment stages through interviews and questionnaire responses, providing valuable feedback to ensure that the developed media was appropriate for classroom implementation.

2.3.Research Instruments

To obtain comprehensive and reliable data, this study employed multiple research instruments. The use of various instruments was intended to ensure that the data collected covered different aspects of the research objectives, including product feasibility, practicality, and effectiveness. Each instrument was designed according to the specific stage of the development process.

The instruments were selected to collect both qualitative and quantitative data. Qualitative data were gathered to explore classroom conditions and identify instructional problems, while quantitative data were used to measure the level of validity, practicality, and effectiveness of the developed media.

Several instruments were used to collect data in this study, including:

1. **Interview Guidelines**
   Interviews were conducted with the school principal and subject teachers to identify existing problems, instructional media usage, and learning outcomes. The interviews were semi-structured to allow in-depth data collection.
2. **Observation Sheets**
   Observations were conducted to obtain real data regarding students' learning conditions and classroom implementation of instructional media.
3. **Questionnaires (Response Sheets)**
   Questionnaires were distributed to teachers and students to measure the practicality and attractiveness of the developed Wordwall-based educational game media. The questionnaire used a Likert scale to assess responses.
4. **Learning Outcome Test**
   A post-test was administered to determine the effectiveness of the developed media in improving students' learning outcomes.

2.4.Research Procedures

The research procedures were systematically organized to ensure that the development of the instructional media was carried out in a structured and measurable manner. A clear procedural framework was necessary to guide the development process from identifying classroom problems to evaluating the final product. Therefore, this study adopted a well-established instructional design model to ensure the quality and effectiveness of the developed media.

The ADDIE model was selected because it provides comprehensive and sequential stages that support educational product development. Each stage is interconnected and allows revisions based on evaluation results, ensuring that the final product aligns with students' needs and learning objectives.

The research procedures followed the stages of the ADDIE model:

1. **Analysis**
   At this stage, a needs analysis was conducted through observation and interviews to identify problems related to limited instructional media and low student learning interest.
2. **Design**
   The researcher designed the Wordwall-based educational game media, prepared instructional materials, and developed assessment instruments.
3. **Development**
   The media prototype was developed and validated by experts. Revisions were made based on suggestions to improve product quality.
4. **Implementation**
   The validated media was implemented in classroom learning activities. Students used the Wordwall media during the learning process.
5. **Evaluation**
   Evaluation was conducted to assess the validity, practicality, and effectiveness of the developed media through questionnaires and learning outcome tests.

2.5.Data Analysis

Data analysis in this study was conducted systematically to ensure that the developed Wordwall-based educational game media met the required quality standards. The analysis process aimed to evaluate the feasibility of the product from multiple perspectives, including expert judgment, user responses, and students' learning outcomes. This comprehensive evaluation was necessary to determine whether the developed media was suitable for classroom implementation.

Furthermore, the data analysis procedures were designed to provide measurable and objective results. Quantitative data obtained from validation sheets, questionnaires, and learning outcome tests were calculated using percentage formulas and categorized according to predetermined criteria. The analysis focused on three main aspects: validity, practicality, and effectiveness.

Data analysis in this study included:

1. **Validity Analysis**
   Validation data from experts were analyzed to determine whether the developed media met content and design standards.
2. **Practicality Analysis**
   Practicality was measured through teacher and student responses using percentage calculations based on Likert scale criteria.
3. **Effectiveness Analysis**
   The effectiveness of the media was determined by analyzing students' learning outcomes. The effectiveness criteria were categorized based on percentage levels ranging from "Very Ineffective" to "Very Effective."

If the overall results met the criteria of validity, practicality, and effectiveness, the Wordwall-based educational game media was considered feasible for use in classroom learning.

3. RESULTS AND DISCUSSION

3.1. Research Results

The development of the Wordwall-based educational game media was conducted using the ADDIE model, which consists of Analysis, Design, Development, Implementation, and Evaluation stages. Each stage produced systematic findings related to the feasibility, practicality, and effectiveness of the developed product.

1. Product Development Results

At the analysis stage, the findings from interviews and classroom observations at SDIT Al Mawaddah Warrahmah Kolaka indicated that teachers predominantly used textbooks and PowerPoint presentations in the learning process. The limited variation of instructional media affected students' learning interest and engagement. Therefore, a Wordwall-based educational game media was developed to provide a more interactive and engaging learning experience.

During the design and development stages, instructional materials were adapted into interactive game templates available on the Wordwall platform. The product was then validated by experts to assess its content and media feasibility. The validation results indicated that the developed media met the required standards and was suitable for classroom implementation.

2. Practicality Results

The practicality of the developed media was measured through teacher and student response questionnaires. The results showed that:

- Student response percentage reached **85.41%**, categorized as *very feasible*.
- Teacher response percentage reached **90.66%**, categorized as *very practical*.

These findings indicate that the Wordwall-based educational game media is easy to use, attractive, and supportive of classroom learning activities.

3. Effectiveness Results

The effectiveness of the developed media was measured through students' learning outcome tests conducted after implementation. The results showed a percentage score of 68.75%, which falls into the effective category based on the predetermined effectiveness criteria.

This indicates that the use of Wordwall media contributed positively to improving students' learning outcomes. The interactive and game-based features encouraged active participation and enhanced students' understanding of the learning material.

Overall, the results demonstrate that the developed Wordwall-based educational game media is valid, practical, and effective for use in elementary school learning contexts.

3.2. Discussion

The findings of this study confirm that integrating game-based digital media into classroom instruction can improve students' motivation and learning outcomes. The high percentage of teacher and student responses reflects that the media successfully addressed the previously identified problem of limited instructional variation.

The practicality results (85.41% from students and 90.66% from teachers) indicate that the media aligns with students' characteristics at the elementary level, who tend to prefer interactive and playful learning activities. The Wordwall platform provides various templates that support active learning and immediate feedback, which are essential components of effective instructional design.

Furthermore, the effectiveness result (68.75%) demonstrates that students achieved satisfactory learning outcomes after using the developed media. This suggests that game-based learning environments can enhance cognitive engagement

and promote meaningful learning experiences. The interactive features of Wordwall encourage students to participate actively rather than passively receiving information.

The findings are consistent with previous studies indicating that educational games and digital learning media contribute positively to student motivation, engagement, and academic achievement. However, the effectiveness percentage also indicates that further optimization may enhance learning outcomes even more. Factors such as duration of implementation, students' digital literacy levels, and classroom management strategies may influence the overall impact of the media.

In summary, the Wordwall-based educational game media provides an innovative instructional solution that supports interactive learning, increases students' motivation, and improves learning outcomes. Therefore, it can be recommended as an alternative instructional medium in elementary school settings, particularly in contexts where learning activities are still dominated by conventional teaching methods.

4. CONCLUSION

Based on the results of the research and development process conducted through the ADDIE model, it can be concluded that the Wordwall-based educational game media developed in this study fulfills the criteria of validity, practicality, and effectiveness for implementation in elementary school learning. The systematic stages of analysis, design, development, implementation, and evaluation ensured that the final product was developed based on real classroom needs and aligned with students' characteristics.

The validation results demonstrate that the developed media is feasible in terms of both content accuracy and instructional design. Expert judgment confirmed that the learning materials, visual presentation, interactive components, and assessment features were appropriate for fourth-grade students. In addition, the practicality test revealed highly positive responses from both students (85.41%) and teachers (90.66%), indicating that the media is user-friendly, engaging, and supportive of classroom instruction. The interactive and game-based features provided by Wordwall encouraged active student participation, reduced learning boredom, and created a more enjoyable learning atmosphere.

Furthermore, the effectiveness test result of 68.75% indicates that the implementation of the Wordwall-based educational game media contributed positively to improving students' learning outcomes. This improvement suggests that game-based digital media can enhance students' cognitive engagement, reinforce conceptual understanding, and provide immediate feedback that supports meaningful learning. Although the effectiveness level falls within the effective category, there remains potential for further optimization through longer implementation periods and broader integration within the curriculum.

Therefore, the developed media can be recommended as an innovative and interactive instructional alternative, particularly for enhancing students' engagement, motivation, and academic achievement in elementary school settings. The integration of digital game-based learning aligns with current educational trends that emphasize student-centered and technology-supported instruction. Future research is recommended to involve larger sample sizes, extended implementation durations, and comparative experimental designs to further examine the long-term impact of Wordwall-based learning media and its integration with other digital learning strategies.

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