

The Design of the Nusantara Quest Game on Mobile Platforms for the Cultural Arts Subject for Grade X Students

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ABSTRACT

This research aims to design a mobile-based game called Nusantara Quest to enhance student engagement and learning outcomes in Arts Education for 10th-grade students. The educational game is developed using the Unity platform and follows the ADDIE model (Analyze, Design, Development, Implementation, Evaluation). The analysis phase involves studying student characteristics and material needs. During the design phase, game flow, user interface, and educational content are created. The development phase includes game creation and validation by media and content experts. Implementation involves trials with students from SMK Negeri 5 Sidrap, and the evaluation phase assesses the effectiveness of the game in improving student interest and understanding of Arts Education material. The research findings indicate that the quiz-based educational game is valid and effective as an interactive learning media S

INTRODUCTION

Education is a crucial element in shaping an individual's character and personality. One of the subjects that plays a significant role in this regard is Cultural Arts. This subject not only teaches theoretical aspects but also helps students develop creativity, an appreciation for art, and sensitivity to beauty. However, in reality, students' interest in Cultural Arts is often low. According to research by Julita Kencana and Yensharti (2023), the interest of students in the field of Cultural Arts in Indonesia is only 60%. One factor contributing to this lack of interest is the teaching methods that are less varied and tend to be boring. The teaching methods currently commonly used, such as lectures, presentations, and discussions, are often not effective enough in capturing students' attention. Students tend to feel bored and have low intrinsic motivation to learn if the teaching methods used are monotonous and not interactive. Therefore, innovation is needed in the application of student-centered learning models that accommodate diverse learning styles.

One step that can be taken to address this issue is by utilizing educational game-based learning media. Educational games have great potential to foster students' interest and motivation to learn. According to research by Murti and Handayani (2022), the use of educational games can bring about positive changes in students by developing a love for the material being studied. Educational games can be an alternative to creating a more interactive and enjoyable learning environment by presenting lesson material through play activities, allowing students to learn while playing.

Mobile technology, particularly Android-based devices, has become an inseparable part of students' daily lives. Most students today often spend their free time playing games on their smartphones. Therefore, the utilization of this technology for educational purposes is highly relevant. The use of Android-based educational game media can be a practical alternative learning method, considering that students tend to be more interested and motivated to learn through media that is familiar and enjoyable.

LITERATURE REVIEW

Mariani (2021) states that cultural arts also have a social function that can strengthen relationships among community members and enrich cultural life. Cultural arts education should be conducted with fresh and inspiring learning approaches to increase student enthusiasm. The use of engaging media, such as educational games, can contribute to enhancing students' interest in this subject. Android, as a Linux-based operating system widely used on mobile devices like smartphones and tablets, facilitates an open development environment, allowing developers to create various applications, including educational ones. The use of Android-based media in learning has many advantages, such as the ability to present material in an interactive format, and easy access so that students can learn anytime and anywhere.

Windane and Lathifah (2021) state that the utilization of mobile technology in education can improve the quality of learning. Android-based

educational applications can be an innovative companion for teachers and a fun learning partner for students. Lesson materials can be presented in the form of text, images, audio, and video, as well as quizzes and games, which can capture students' attention and accommodate various learning styles.

Unity Hub is software used in game development. Anggraini et al. (2021) state that Unity provides a platform for developing games in both 2D and 3D modes. Unity allows developers to integrate educational elements into games, resulting in an engaging and interactive learning experience. In this study, Unity is used as a platform for developing a quiz-based educational game for the Cultural Arts subject. The use of Unity enables the integration of visually appealing and dynamic interaction, which can enhance students' interest and understanding of the material being taught. With its visual advantages and interactive capabilities, Unity 2D is expected to contribute positively to cultural arts education.

METHODOLOGY

The educational game developed in this study is a mobile-based quiz game specifically designed for 10th-grade Cultural Arts students, titled Nusantara Quest. The game was developed using the Unity platform and follows the ADDIE development model (Analyze, Design, Development, Implementation, Evaluation). The ADDIE model was chosen because it is systematic and structured, allowing for a more efficient and practical development process. Additionally, the Research and Development (R&D) method (Astuti et al., 2017) was employed to ensure that the game is not only practical but also well-implemented in the field. This research was conducted at SMK Negeri 5 Sidenreng Rappang, with the research subjects consisting of two validators, one being a material expert and the other a media expert, along with 25 students from the 10th grade of TITL to assess its practicality. Moreover, the data collection techniques used in this study include observation, questionnaires, and documentation.

To analyze the quantitative data obtained from the assessments by the media and material validators, descriptive statistical techniques were used. This analysis aims to measure the product's validity based on the completed questionnaires. The collected data will be analyzed to evaluate the product based on the assessments by media and material experts, by calculating the validity score using the following formula:

$$V_{ah} = \frac{TSe}{TSh} \times 100\%$$

Notes:

1. V_{ah} = Expert Validation
2. TSe = Total Empirical Score
3. TSh = Total Maximum Score

Based on the percentage results of the media and material expert validation assessments, the conclusions drawn from the evaluations can be seen in Table 1.

Table 1. Validity Criteria

Criteria	Validity Level:	Information
81,00% - 100,00%	Very Valid	Can be used without modifications
61,00% - 80,00%	Valid	Can be used with modifications
41,00% - 60,00%	Less Valid	Recommended not to be used due to significant necessary improvements
21,00% - 40,00%	Not Valid	Should not be used
00,00% - 20,00%	Very Not Valid	Should not be used

Source: Wandani & Nasution, 2017

For response analysis, the data analysis is conducted using the following formula.

$$V as = \frac{TSe}{TSh} \times 100\%$$

Information

V as = Audience validation

TSe = Total Empirical Score

TSh = Total Maximum Score

Based on the percentage results of the assessments from students and teachers, the conclusions drawn from the evaluations can be seen in Table 2.

Table 2. Practicality Criteria

Criteria	Practicality Level:	Notes:
81,00% - 100,00%	Very Practical	Can be used without modifications
61,00% - 80,00%	Practical	Can be used with modifications
41,00% - 60,00%	Less Practical	Recommended not to be used due to significant necessary improvements
21,00% - 40,00%	Not Practical	Should not be used
00,00% - 20,00%	Very Not Practical	Should not be used

RESULTS

Development Results of the Media

The Nusantara Quest educational game was developed using the Unity platform to provide an interactive mobile-based learning medium that can be accessed by users anytime and anywhere, even offline. The media display in this game aims to enhance students' understanding of the Cultural Arts subject engagingly and interactively. The media display can be seen below.



Figure 1. Initial Login Screen



Figure 2. Main Menu Screen



Figure 3. Developer Menu Screen



Figure 4. Settings Menu Screen

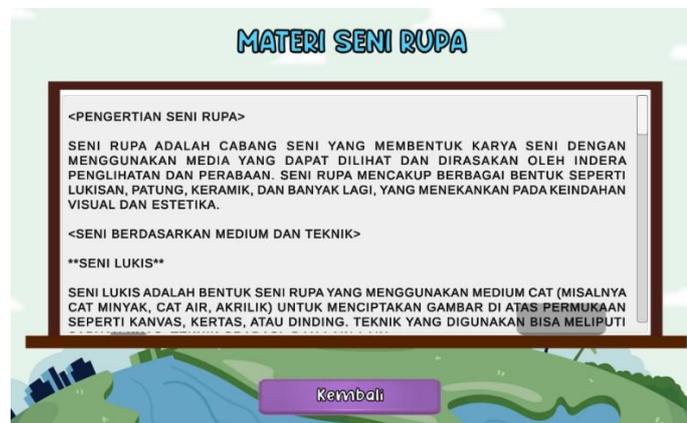


Figure 5. Material Menu Screen



Figure 6. Tutorial Menu Screen



Figure 7. Main Game Screen (Quiz)



Figure 8. Mini Game Screen (Puzzle) 40 mini



Figure 9. Score Menu Screen

Expert Validation Results

In this study, one media validator and one material validator were selected to ensure the quality and accuracy of the game. Table 2 presents the assessment results from each validator.

Table 2. Data Validation Results

No	Aspects assessed	Score	Maximum score	Percentage	Information
1	Display Components	30	35	85,7	Very Valid
2	Sound Components	20	25	80	Very Valid
3	Font/Typography Components	11	15	73,3	Valid
4	Presentation	17	20	Very Vvalid	Very Vvalid
5	Interactive	17	20	Very Valid	Very Valid
	Total	95	115	82.6	Very Valid
6	Material	15	20	75	Valid
7	Learning	23	30	76	Valid
	Total	38	50	76	Valid

The validation results from the media validator indicate that the developed game has a very good level of validity in most components. The Display Component received a score of 85.7 and is categorized as Very Valid. The Sound Component received a score of 80, which also falls under the Very Valid category. Both the Presentation and Interactivity Components received a score of 85, categorized as Very Valid. However, the Font/Typography Component received a score of 73.3, which falls under the Valid category.

The validation results from the material validator indicate that the developed educational game has a fairly good level of validity. The Material Component received a score of 75, categorized as Valid. The Learning Component received a score of 76, also categorized as Valid. Overall, the total score from the material validator is 76, which is categorized as Valid.

Validation Results of Student Response Data

At this stage, 25 students from the 10th grade of TITL at SMK Negeri 5 Sidenreng Rappang were the subjects for testing the mobile-based game media developed by the researcher. After using the media, the researcher distributed questionnaires to the students to measure how practical the media was. The data from the student response questionnaires can be seen in Figure 10.

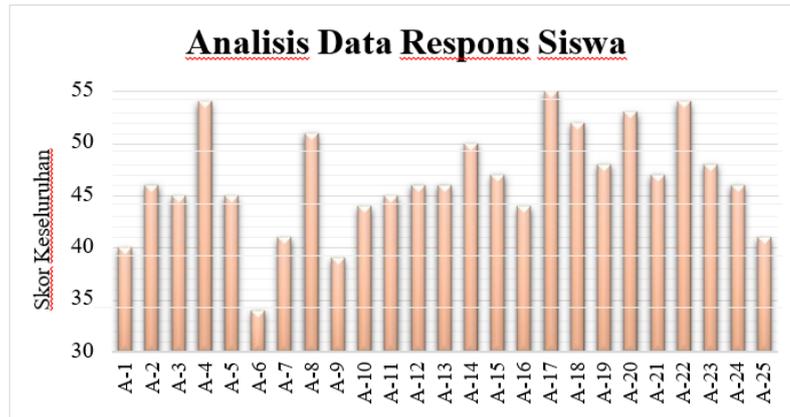


Figure 10. Results of Student Response Data Validation

Based on the analysis of validity calculations and the graph of student responses (25 students), the student response score is 81.1%, indicating that the game is categorized as highly practical according to student responses.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research results, the mobile-based Nusantara Quest game for the Cultural Arts subject has shown significant effectiveness in increasing students' interest and learning outcomes. Developed using the ADDIE model, the game was evaluated as highly valid technically by media experts with a validity percentage of 82.6%, and its content was deemed sufficiently valid with a percentage of 76%, ensuring alignment with the curriculum and learning objectives. Trials conducted with 10th-grade students at SMK 5 Sidrap indicated excellent acceptance, with a student response validity percentage of 81.1%, along with increased motivation and understanding of the material. The game has proven to be more practical than traditional teaching methods in enhancing student learning outcomes, as it presents the material interactively and challenges students to think critically. However, there are recommendations for improving the language of the material, adding content, and enhancing features and the user interface. Overall, this educational game is an innovative tool that not only makes learning more enjoyable but also helps students understand the material more deeply and can serve as a reference for developing other interactive learning media in the future.

FURTHER STUDY

This research still has limitations so further research is still needed on the topic "The Design of the Nusantara Quest Game on Mobile Platforms for the Cultural Arts Subject."

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