

Implementation of Peresean Game as a Medium to Enhance Sasak Cultural Appreciation Among Young Generation

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Abstract

Peresean is a traditional custom of the Lombok Sasak Tribe, which is armed with rattan (jalin), using a shield (ende) made from cow skin and when the peresean event takes place it will be accompanied by the typical music of the Lombok Sasak Tribe, namely gendang beleq. The clothing worn by peresean participants (pepadu) is a headband (sapuq), sarong (selewoq), cloth belt (bebet) and bare chest. The peresean culture is now starting to be held less frequently and is not very popular with Lombok youth in particular. This is because today's youth prefer digital games that are more varied and do not require a lot of stamina. So from there it became a reference for making a fighting type peresean game using the GDLC method as a means to preserve the Sasak tribe's peresean culture. adjust regulations according to the target audience. The final result of this production is a fighting game that runs on a PC (personal computer), and is targeted at all ages. The features that have been designed have fulfilled what was desired. In this fighting type research game, there is information and moral messages about preserving local culture. It is hoped that this peresean game application can become a medium of introduction and education for the wider community, especially the people of Lombok, about the peresean culture of the Lombok Sasak Tribe.

Keywords: Game, Game Fighting, Lombok, Peresean

INTRODUCTION

The rapid development of information and communication technology in recent years has brought significant changes to various aspects of life, including in the fields of education and cultural preservation. Today's young generation grows up in the digital era where access to information and technology becomes an integral part of daily life. This demands innovation in learning methods that can integrate technology to enhance effectiveness and attractiveness (Aris Sudianto et al., 2022).

One approach that is starting to be widely used is the implementation of educational games as a learning medium. Educational games not only offer enjoyable interaction, but are also able to effectively instill educational values. Research shows that interactive multimedia educational games integrated with local wisdom can instill cultural literacy in society. (A. S. Adinanda et al., 2023). This demonstrates the potential of educational games in teaching cultural values to the younger generation.

Peresean culture, a traditional combat tradition of the Sasak tribe in Lombok, is an important part of Indonesia's cultural heritage. Peresean is not only entertainment, but also laden with values such as courage, sportsmanship, and community solidarity. However, along with the currents of modernization and globalization, the younger generation's interest in this tradition has begun to decline. Research shows that Peresean culture is starting to be rarely held and is less popular among Lombok youth (Sulastri et al., 2024).

To overcome these challenges, innovation is needed in methods of preserving and introducing Peresean culture to the younger generation. One potential solution is through designing a Peresean-based game as a medium for introducing Sasak tribal culture. Research has been conducted to design a Peresean game that can run on PC or laptop devices and is targeted at all ages. This game not only functions as entertainment, but also as an educational tool that introduces local culture to its players (Sulastri et al., 2024)

The implementation of educational games based on local culture has proven effective in enhancing cultural literacy and appreciation for cultural heritage (Ghani et al., 2024a). For example, the development of interactive multimedia educational games integrated with Madura local wisdom was able to instill cultural literacy in elementary school students (A. S. Adinanda et al., 2023). This shows that the integration of local cultural elements in educational games can be an effective strategy in cultural preservation.

In addition, well-designed educational games can enhance learning motivation and engagement among young people. Interactivity and game elements in educational games can make the learning process more interesting and enjoyable. This is important to attract young people's interest in cultural learning that might previously have been considered less interesting.

However, the development of educational games based on local culture also faces challenges, such as ensuring the accuracy of cultural representation and acceptance by the local community. Therefore, collaboration with cultural experts and local communities becomes key in developing effective and authentic educational games.

Unlike previous research that focused on general study fields such as mathematics, letters, and numbers, this research raises the local cultural heritage of Sasak (Peresean). This provides added value in the form of cultural preservation while enhancing the cultural literacy of the younger generation, not just cognitive aspects. This research has advantages because it focuses on culture-based edutainment, so besides being enjoyable, the game also becomes an innovative medium for maintaining the existence of traditional culture that is threatened with extinction. This educational game not only enhances learning abilities, but also fosters a sense of pride and cultural identity among the younger generation. This is an advantage not found in other research that is more oriented towards purely academic learning.

Thus, the implementation of Peresean games as a medium to enhance appreciation of Sasak culture among the younger generation is an innovative step that combines technology and cultural preservation. This approach not

only helps preserve cultural heritage, but also fosters a sense of pride and cultural identity among the younger generation.

LITERATURE REVIEW

2.1. Research Novelty

Research related to the development of educational games based on local culture has been conducted in various contexts, both for strengthening cultural literacy and learning specific study fields. Adinanda et al. (2023), for example, developed interactive multimedia educational games integrated with Madura local wisdom to instill cultural literacy in elementary school students, and found that the integration of local elements can enhance understanding of cultural values as well as learning motivation (A. Adinanda et al., 2023). Ghani et al. (2024) designed a 3D endless runner type educational game based on Android as a mathematics learning medium for children, with results showing that the gamification approach can make learning more interesting although the main focus is on academic cognitive concepts (Ghani et al., 2024b).

In the context of Sasak cultural preservation, Sudioanto et al. (2022) developed a web-based encyclopedia as an effort to document and preserve the Sasak language, so its contribution focuses more on providing textual and documentary information, not in the form of digital game interaction (Sudioanto et al., 2022). Additionally, Hilmawan et al. (2024) designed a role-playing game as a means of history education using the Game Development Life Cycle (GDLC) method, which emphasizes narrative flow and historical exploration through role-playing game mechanics, but does not specifically raise traditional combat traditions like Peresean (Hilmawan et al., 2024a). Anshori et al. (2022) also developed an educational game for introducing programming languages using Construct 2 as an interactive medium for beginners, but the focus remains on improving understanding of programming concepts, not on internalizing local cultural values (Anshori, Kaffah, et al., 2022).

Different from these previous studies, this research raises the Peresean tradition as a distinctive cultural heritage of the Sasak tribe and integrates it in the form of an educational fighting game designed systematically with an ADDIE-based R&D development model. The

main novelty of this research lies in the combination of: (1) focus on the Peresean tradition as the main object, not merely a cultural backdrop; (2) integration of Sasak cultural values—courage, sportsmanship, and solidarity—into game mechanics, visual displays, and educational content; and (3) the use of games as a cultural preservation medium whose effectiveness is explicitly measured through functionality testing and user validation related to ease of use, system functionality, and usefulness in enhancing cultural appreciation. Thus, this research not only positions local culture as an ornament, but makes it the core of the gaming experience as well as an educational medium aimed at strengthening the identity and cultural pride of the young Sasak generation

2.2. Sasak Cultural Heritage

Sasak cultural heritage on the island of Lombok reflects the identity and local wisdom of the local community that has been passed down from generation to generation. This culture includes physical forms such as traditional houses Bale Tani and Bale Lumbung, traditional Songket weaving art, arts such as Gendang Beleq, Peresean, as well as various traditional ceremonies such as Nyongkolan and Roah. These cultural elements not only function as aesthetic expressions, but also have social, religious, and philosophical meanings that bind the Sasak community in daily life (Budaya Indonesia, 2021; Setiawan & Wahyudi, 2020). For example, Sasak traditional houses are built with environmentally friendly traditional architectural techniques and reflect the social order of society, while the songket weaving tradition involves symbols laden with spiritual values.

In the modern context, Sasak cultural heritage is not only a symbol of ethnic identity, but also an important asset for the development of cultural tourism in Lombok. The local government and indigenous communities strive to preserve this heritage through cultural festivals, tourism villages, and digital documentation. However, challenges such as modernization, lifestyle changes, and decreased interest among the younger generation demand sustainable preservation strategies. The involvement of local communities in cultural management and the integration of cultural values in education are important steps so that

Sasak cultural heritage remains relevant and able to contribute to social and economic development in Lombok (Hidayat, 2019; Kemenparekraf, 2023)

2.3. Peresean Art

Peresean is a traditional art of the Sasak community on Lombok Island, West Nusa Tenggara, which takes the form of a fight between two men using rattan sticks (penjalin) and shields made from buffalo leather (ende). The fighters are called pepadu, while the referee is known as pekembar who is in charge of regulating the course of the match. This tradition was originally not just entertainment, but also had a ritual function, namely as a ceremony to ask for rain and maintain soil fertility when the dry season struck. In addition, Peresean also serves as a means of testing courage and a symbol of maturity for Sasak men (Gomandalika, 2023).

Over time, the ritual meaning of Peresean has begun to shift and is more often displayed as a cultural attraction and community entertainment. This performance is usually accompanied by traditional Sasak music such as gendang, gong, and flute to enliven the atmosphere (The Lombok Guide, 2022). Nevertheless, the values contained in Peresean remain important, including courage, sportsmanship, discipline, and social solidarity. The harsh fighting in Peresean often causes injuries, but this is considered part of life learning and a way to show the dignity of a Sasak man (Budaya Indonesia, 2021).

METHODS

A. Research and Development (R&D) Method

This research uses the Research and Development (R&D) method to develop a digital-based game that adapts the Peresean tradition as a medium for education and preservation of Sasak culture. The Research and Development (R&D) method is a research method used to produce new products or improve existing products, then test the effectiveness of these products so they can be used widely (Supardi, 2021). The intended products can be in the form of learning media, models, systems, devices, applications, curricula, or work methods. The development

model used is the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) to ensure the quality and effectiveness of the game in enhancing cultural appreciation among the younger generation (Apriliani et al., 2024).

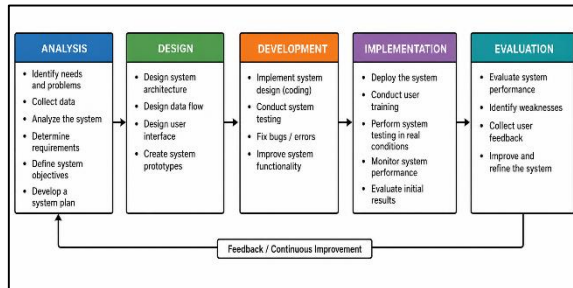


Figure 1: R&D workflow with ADDIE model

1. Analysis: At this stage, a preliminary study is conducted to understand user needs and the cultural context to be implemented in the game. In the Analysis phase, a comprehensive needs and context assessment is conducted, identifying key stakeholders including (students /university students/teenagers, teachers, Sasak traditional leaders, cultural offices, developers). Next, in-depth interview sessions and FGDs are conducted to find out expectations, concerns, and cultural boundaries. Completing all needs through historical and ethnographic literature studies about Peresean to collect valid sources, as well as inventorying cultural elements that may and may not be included (sacred symbols, closed rituals). Quantitative surveys to target users to find out the devices that will be used to run this game later.

2. Design: Game Concept Design which includes:

- Genre determination (for example action-fighting or role-playing)
- Designing storylines, characters, arenas, and combat mechanisms according to Peresean
- UI/UX Design: Designing an attractive interface display and in accordance with Sasak cultural elements
- Arranging user experience that is easy to understand and interactive
- Creating Storyboards and Initial Prototypes including making initial sketches of characters, weapons (rattan and shields), as well as environments that represent the Peresean atmosphere.

3. Development: The Development stage is an important phase where the conceptual design produced in the Design stage is realized into a

real product in the form of an educational Peresean game. At this stage, developers use a game engine as a technical foundation to implement all aspects of the game. Commonly used engines are Unity because it is flexible, supports multiplatform (Android, iOS, PC), and has a large developer community; or Unreal Engine which excels in graphics quality and visual effects. Engine selection is determined based on technical needs, target platform, and availability of team resources.

In implementation, one of the most important components is programming combat mechanisms, because combat is the core representation of Peresean. This mechanism includes input systems from players (for example virtual buttons on touch screens or keyboards), attack and defense logic, scoring rules, and victory or defeat conditions. This system must also adapt to the philosophy of Peresean which is not just physical combat, but laden with cultural meaning, so mechanics need to be balanced between entertainment aspects and educational value.

Character animation is also developed to represent the distinctive movements of pepadu (Peresean fighters). This animation includes basic movements such as standing, walking, and preparing, as well as special movements such as swinging penjalin (rattan), parrying with ende (shield), and expressions after winning or losing. Animation can be made using supporting software such as Blender or Maya, then integrated into the engine with rigging and keyframe systems. To provide a realistic impression and respect local culture, animation should refer to documentation videos of original Peresean performances and be validated by practitioners or traditional leaders.

Sound effects and background music function to strengthen the atmosphere of Sasak culture. Sound effects include the sound of rattan clashing with shields, audience cheers, pepadu shouts, and typical Lombok gamelan instruments. Background music can be taken from live recordings of traditional musicians or digitally recreated to remain original yet efficient. The sound design process must pay attention to copyright and usage permissions, especially if involving local artists, while giving appreciation to them.

Visual environment integration is also included in this stage, such as a battle arena

resembling a traditional Peresean field with a background of audience members. The environment is made using 3D models with typical Sasak textures, so players not only play, but also feel the cultural atmosphere.

After all components (combat mechanisms, character animations, sound effects, and visual environment) are implemented, internal playtesting is conducted to ensure all elements function according to purpose: mechanics run smoothly, animations are not choppy, sounds are synchronized with actions, and cultural nuances are maintained. Test results are recorded in the form of bug reports and cultural reviews which will later become material for revision before entering the Implementation stage in the field.

4. **Implementation:** The Implementation stage is the phase when the Peresean game that has been developed is tested and begins to be introduced to target users. The main objective is to ensure that the product runs according to plan, has no technical errors (bugs), while being able to convey the desired cultural message. At this stage there are two important steps, namely initial testing (Alpha Test) and limited testing (Beta Test).

Initial testing (Alpha Test) is conducted by the development team internally with a focus on technical aspects and game functionality. Alpha Test aims to find bugs, errors, or inconsistencies early before the game is played by target users. This testing is usually conducted in a closed environment, only involving programmers, designers, and QA (Quality Assurance) teams.

After the game is declared technically stable, limited testing (Beta Test) is conducted involving a small group of real users, such as university students, high school students, or local youth communities. Beta Test aims to measure user experience, the extent to which the game can be understood, is interesting, and truly enhances appreciation of Sasak culture. At this stage, participants are asked to play the game in controlled sessions, then provide feedback through questionnaires, interviews, or focused group discussions (FGD).

In addition to technical and experiential aspects, Beta Test also emphasizes educational evaluation. Participants are given simple pre-tests and post-tests to measure increased cultural knowledge, as well as attitude scales to assess changes in appreciation of Sasak cultural

heritage. Data from this testing is analyzed quantitatively (for example score increases) and qualitatively (for example participant comments about their impressions of Peresean culture).

The results of Alpha Test and Beta Test become an important basis for making final revisions before the game is ready to be published more widely. Thus, the Implementation stage not only ensures the game is bug-free, but also ensures the game is truly effective as a fun, interactive, and meaningful cultural learning medium for the younger generation

5. **Evaluation:** The Evaluation stage is an important process to assess whether the Peresean game has functioned optimally, both from the technical side and from the side of achieving educational and cultural goals. One of the main focuses of evaluation is analyzing game performance which includes three main things: user response, loading time, and playing experience.

This, game performance evaluation is not only limited to finding technical bugs, but also assessing the quality of cultural experience received by users. Analysis of user responses, loading times, and playing experience provides an overview of whether the game has met modern technical standards while being effective as a cultural preservation medium. The results of this evaluation will later become the basis for improvements to the next version, so that the Peresean game can develop into an interactive learning medium that is truly of interest to the younger generation and beneficial for preserving Sasak culture.

This method is designed to ensure that the Peresean game is not only entertainment, but also an effective educational tool in enhancing appreciation of Sasak culture among the younger generation. With the ADDIE approach, this research can produce a quality game, culture-based, and has a positive impact on the preservation of local traditions

B. System Development Model

The system development model used in this study is the UML model, where the authors used an activity diagram to make the system's workflow more structured and easier to understand (Hilmawan et al., 2024b). The system modelling contained in the activity diagram is as shown in Figure 2.

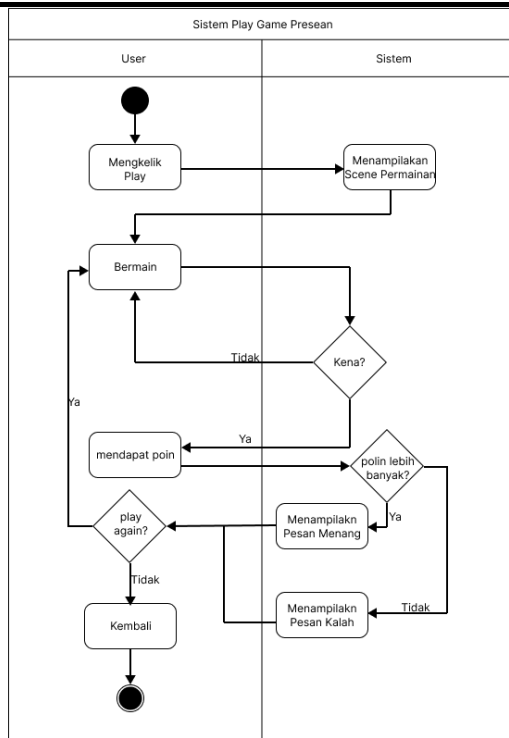


Figure 2: Game system activity diagram

RESULTS AND DISCUSSION

A. Research Results

The research results show that the development of an educational game based on Peresean culture was successfully designed and implemented as an interactive medium that combines elements of entertainment and education. This game displays a simulation of the Peresean tradition while still prioritizing Sasak cultural values such as courage, sportsmanship, and solidarity. From a technical perspective, the game can run well on computer devices (PC/laptop), and has interactive features that are easy to use by users from various age groups.

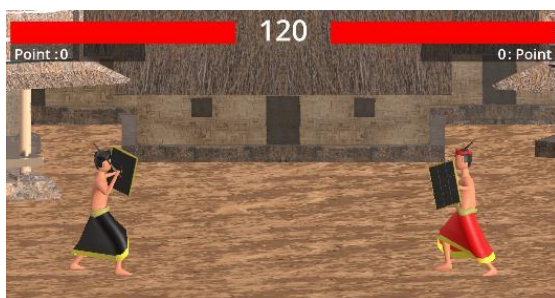


Figure 3: Peresean game interface display

Based on trials conducted on a group of young people, positive responses were obtained regarding the existence of this educational game.

Most respondents stated that the Peresean game was able to foster curiosity about local culture, and made the cultural learning process more interesting and enjoyable. Interactivity in the game was deemed capable of increasing user involvement so they better understand the cultural context of Peresean compared to only through conventional media such as books or lectures.

In addition, the results of data collection through questionnaires showed that the majority of respondents felt more motivated to recognize and preserve Sasak culture after trying the game. This proves that the application of technology in the form of educational games can be an effective strategy in enhancing cultural literacy as well as appreciation for local cultural heritage.

However, this research also found several challenges. One of them is maintaining the accuracy of cultural representation so as not to deviate from the original values of the Peresean tradition. Therefore, the involvement of cultural figures and local communities in the game development process is an important factor to ensure that the game is not just an entertainment medium, but also an authentic educational tool.

Overall, the results of this research confirm that educational games based on Peresean culture have great potential as an innovative medium in introducing, preserving, and fostering pride in Sasak culture among the younger generation

B. Discussion

The designed Peresean game focuses on efforts to maintain and introduce traditional Sasak culture, specifically through interactive media in the form of digital games. Peresean itself is one of the traditional martial arts from Lombok, where two fighters (called "Pepadu") face each other using rattan weapons (penjalin) and shields made from buffalo leather (ende). This tradition has deep historical and cultural value for the Sasak community, often held in traditional ceremonies to celebrate courage and strength.

In the design of this game, the main aspect raised is replicating elements from Peresean combat into a form that can be accessed by the younger generation and the wider community, including those outside the Sasak community. By using game technology, Peresean culture can

be preserved while being introduced through a more interactive and modern experience.

At the implementation stage, this game involves visual and gameplay elements that represent the original atmosphere of Peresean combat, such as arena settings, character costumes, and combat mechanisms that conform to traditional rules. Players can engage in combat in a virtual arena by controlling attack and defense movements. Besides being entertainment, this game functions as an educational tool to introduce aspects of Sasak culture, such as playing rules, tools used, and history in peresean.

Through this digital approach, the Peresean game is expected to attract the interest of the younger generation in their cultural heritage and ensure that the tradition does not disappear with the times. Ultimately, the design of this game aims to be a bridge between cultural heritage and modern technology, so that Sasak culture remains alive and relevant to the wider community.

C. Testing

In this research, system testing was conducted using the Black Box Testing method. This method focuses on testing application functionality without considering the internal structure of the program code (Anshori, Ayuni Kaffah, et al., 2022). Testers only look at whether the given input can produce output as expected..

Table 1: System testing results

Testing	Expected Output	Result	Remarks
Option Selection	User directed to scene/game option	Successfully directed to scene/game option	Valid
Match Time Decreases	Match time decreases as game runs	Time successfully decreased	Valid
Health Bar Decreases	Health bar decreases when attacked	Successfully reduced health bar when attacked	Valid
Points Increase	Points increase when successfully attacking opponent	Points successfully increased	Valid

Testing	Expected Output	Result	Remarks
Turn Off Music	Game music turned off	Successfully turned off game music	Valid
Turn On Music	Game music turned on	Successfully turned on game music	Valid
Click Next Button	Display next information	Successfully displayed next information	Valid
Win Message Appears	Display "you win" message when winning	Successfully displayed "you win" message	Valid
Lose Message Appears	Display "you lose" message when losing	Successfully displayed "you lose" message	Valid
Attack	Perform attack animation when pressing "space" button	Successfully performed attack animation	Valid
Defend	Perform defense animation when pressing "shield" button	Successfully performed defense animation	Valid
Move Left	Move left when pressing "A" button	Successfully moved left	Valid
Move Right	Move right when pressing "D" button	Successfully moved right	Valid

D. User Validation

User validation is an important stage in this research to ensure that the educational game based on Peresean culture truly matches the needs, expectations, and level of understanding of target users, namely the younger generation. This validation was conducted after the system went through the functionality testing stage (Black Box Testing), so the focus is more on user experience and the level of acceptability (usability) of the developed application (Carla Padmasari, 2020). The validation used by researchers consists of several criteria including criterion A: Ease of use, criterion B: System

functionality, and criterion C: System usefulness. In the ease of use criteria there are 3 main indicators namely (A1) Peresean-based educational game is easy to understand without needing additional explanation, (A2) Game controls (buttons/features) are easy to use and function well, (A3) Time needed to learn how to play is relatively short. Research results on the Ease of use criteria obtained a percentage value of 84.3% with the "Agree" category.

The next criteria is System functionality which has indicators namely (B1) Game interface display is clear and attractive, (B2) Navigation menu (start, instructions, exit, etc.) is easy to find and use, (B3) Information in the game is presented in easy-to-understand language. Research results on System functionality criteria obtained a percentage value of 90.5% with the "Strongly Agree" category.

Furthermore, for the System usefulness criteria there are several indicators including (C1) This game helps me get to know Peresean culture better, (C2) Peresean cultural values (courage, sportsmanship, solidarity) are conveyed clearly through the game, (C3) This game can be an alternative medium for preserving local culture (Alec Chillingworth, 2023). Research results on System functionality criteria obtained a percentage value of 87.5% with the "Strongly Agree" category.

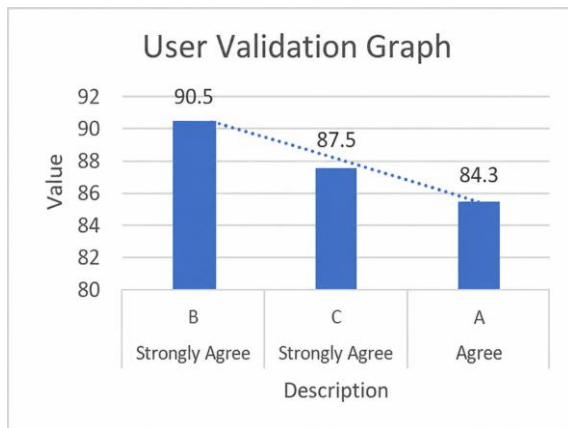


Figure 4: Percentage graph of validation results

CONCLUSION

Based on the research results that have been conducted, it can be concluded that the development of an educational game based on Peresean culture was successfully designed as an interactive medium that combines elements of entertainment and education. This game is able

to introduce the Peresean tradition while still emphasizing Sasak cultural values, such as courage, sportsmanship, and solidarity, through visual displays, game mechanisms, and educational content presented.

System testing using the Black Box method showed that all main features of the game, such as navigation menus, gameplay, scores, and cultural information, ran according to design. Meanwhile, user validation results showed that the majority of respondents rated the game as easy to use, having an attractive, interactive display, and useful in enhancing knowledge and appreciation of Peresean culture.

In the future, this research can be developed with several broader and deeper future work directions. Development can include porting the game to mobile platforms (Android/iOS) so that user reach becomes wider, adding new game modes such as story mode that explores Peresean historical narratives more deeply, and integrating multiplayer features to enhance social interaction between users. In addition, follow-up research can include more comprehensive pedagogical evaluation through experimental design based on pre-test and post-test across various age groups, involving cultural experts and traditional leaders more intensely in the co-design process, and enriching educational content with multimedia materials such as video documentation and interviews with Peresean cultural practitioners.

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