

Ekspedisi Nusantara: An Innovative Gamification-Based Interactive Website for Indonesian History Education

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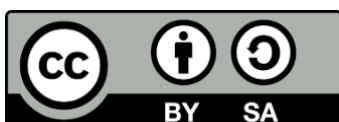
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Abstract

This study aims to develop and test the feasibility of an interactive, website-based history learning medium called “Ekspedisi Nusantara,” which is integrated with a narrative gamification system to address students' boredom and low historical awareness. The research methodology employs a Research and Development (R&D) approach, adapting the ADDIE model and focusing on the first three phases: Analysis, Design, and Development. The development stage involved expert judgment to test the prototype's validity. Data collection was conducted using a modified four-point Likert scale questionnaire without a neutral option to minimize bias. Data analysis employed quantitative descriptive statistical techniques to calculate the feasibility percentage. The research results show that the developed media received a score of 95.00% from media experts and 98.33% from content experts. Based on the feasibility conversion criteria, both scores fall into the “Highly Feasible” category. The narrative gamification approach through digital badges and tiered missions on the Google Sites platform proved capable of transforming passive textual history material into an active digital expedition. In conclusion, “Ekspedisi Nusantara” is highly valid and suitable for implementation as an interactive learning innovation that accommodates the digital characteristics of Generation Z high school students.

Keywords: interactive website media; gamification; history learning; Google Sites



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INTRODUCTION

History education plays an essential role in a nation's education because, philosophically speaking, historical material serves to develop the historical awareness, nature, and character of the younger generation in understanding the causality of the past in order to build a future (Hasan, n.d.). However, the reality on the ground reveals some rather fundamental problems. Based on literature reviews and needs analyses, conventional history instruction remains dominated by linear, teacher-centered lecture methods, as well as the rote memorization of dates, figures' names, and various treatisesan approach that feels dry and unengaging. The use of text-heavy textbooks lacking visual elements that stimulate the imagination causes students to experience a disconnect between their imagination and the history of their own nation. This situation has fostered a stigma among high school students that history is merely a "bedtime story" because they struggle to envision the relevance of past events to their current digital lives. This aligns with the findings of Shavab et al. (2021), who state that conventional methods in history education often lead to boredom in the classroom, thereby reducing students' active participation and understanding of historical material.

To bridge the gap between the characteristics of the digital generation and text-heavy history materials, an innovative, interactive, and motivating learning medium is needed. One approach that has proven effective is gamification. Gamification involves the use of game design elements and mechanics in non-game contexts, such as classroom learning activities (Shavab et al., 2021). The implementation of features such as missions, point systems, badges, and completion certificates has been psychologically proven to foster a sense of healthy competition and spark students' curiosity. This is supported by recent research by Fahrudin and Saefudin (2025), which demonstrates that gamification-based assessment tools significantly enhance students' motivation and engagement in history education, transforming them from passive learners into highly enthusiastic participants. Through a narrative-driven gamification approach, history content is no longer presented passively but is transformed into a challenging visual expedition.

In addition to the gamification approach, the issue of media accessibility is also a priority in this study. Given that students today tend to have short attention spans, there is a need for media that is fast, responsive, and accessible anywhere. Therefore, the development of interactive web-based media is a rational solution. Research by Yogianto and Alrianingrum (2023) shows that historical particle media developed through the Google Sites platform has proven effective in facilitating independent learning among high school students because it can be accessed across devices (smartphones and laptops) without significant technical obstacles. This platform allows for the seamless integration of various multimedia elements such as high-resolution images, videos, and interactive quizzes, making it an ideal platform for implementing gamified history design.

Based on this problem analysis and the supporting literature, this study aims to develop an interactive website-based learning tool called "Ekspedisi Nusantara" that integrates gamification into the Indonesian History curriculum at the high school level. This website is designed by dividing the material into several "Historical Era Stations" (such as Prehistoric, Hindu-Buddhist, Islamic, and Colonial periods), where students must complete missions to earn digital badges and a final certificate. The primary objective of this study is to design this medium using the ADDIE development model and to test its feasibility through validation by subject matter experts and media experts. The development of this medium is expected to serve as a theoretical and practical alternative solution to eliminate boredom, enhance independent learning, and foster students' historical awareness in an enjoyable and meaningful way.

RESEARCH METHODS

This study employs a Research and Development (R&D) approach by adapting the

ADDIE development model developed by Dick and Carey. This model comprehensively consists of five stages: Analysis, Design, Development, Implementation, and Evaluation (Yogianto & Alrianingrum, 2023). However, based on the limitations of the research scope and the primary focus on producing an expert-validated media prototype, this study was modified and limited to only the first three stages: Analysis, Design, and Development (Expert Feasibility Test), as illustrated in Figure 1.

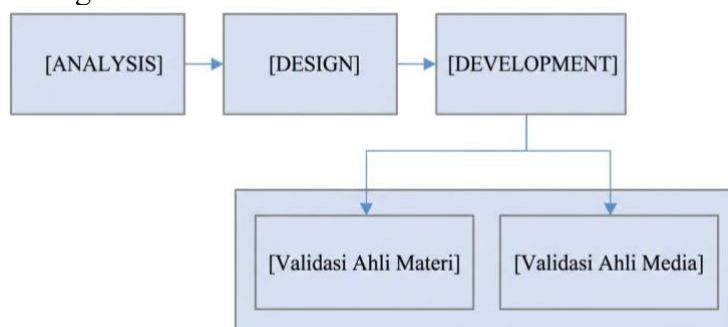


Figure 1. Modified Stages of the ADDIE Model

These development stages constitute a valid and commonly used procedure in R&D research focused on initial product design, consistent with the methodologies applied in previous studies (Neha et al., 2023; Rusmini et al., 2024; Untari et al., 2023). The focus of this study is the development of an interactive history learning medium based on Google Sites named “Ekspedisi Nusantara,” which is integrated with gamification systems such as badges and tiered missions.

The operational stages of this study began with the Analysis phase, which involved a literature review to identify the challenges of conventional history education and an analysis of the needs of the digital generation of students. The second phase was Design, during which the researcher designed the website architecture, organized the historical material into four “Era Stations,” and designed the user interface (UI) elements and gamification logic. The third stage, Development, is a crucial phase in which the feasibility of the developed media prototype is evaluated. Since this study did not involve field testing, the primary subjects or informants used were experts (expert judgment). The validation subjects consisted of two experts: one Educational Technology lecturer as a media expert, and one high school History teacher as a content expert. The primary data source was obtained from the two experts’ evaluations of the final product developed.

The data collection technique used in this development phase was a closed-ended questionnaire (validation survey). The questionnaire was designed using a modified Likert scale with four response options: (1) Not Appropriate, (2) Somewhat Inappropriate, (3) Appropriate, and (4) Very Appropriate. The neutral option (score 3 on a 5-point scale) was intentionally omitted to avoid bias due to the validators’ indecision, thereby ensuring the resulting data is more definitive and precise (Aruna et al., 2021). The data analysis technique applied is quantitative descriptive statistical analysis. The raw scores obtained from the questionnaire were summed, and the suitability percentage was calculated using the formula: the ratio of the total score obtained to the ideal maximum score, multiplied by one hundred percent. This percentage result was then converted into qualitative suitability criteria to draw conclusions regarding whether the “Ekspedisi Nusantara” media is suitable, requires revision, or is highly suitable for implementation in Indonesian History education, guided by the criteria in Table 1.

Table 1. Media Suitability Criteria

Percentage Range (%)	Suitability Category	Notes
81% – 100%	Highly Suitable	Can be used without revision
61% – 80%	Suitable	Can be used with minor revisions

41% – 60%	Less Suitable	Requires major revisions before use
0% – 40%	Unsuitable	Cannot be used

Source: Adapted from Riduwan, 2015

RESULT AND DISCUSSION

Result

The results of this study provide a comprehensive overview of the design and development process for the interactive history learning resource “Ekspedisi Nusantara.” In accordance with the established methodological constraints, the product development process is described sequentially based on the first three phases of the ADDIE model. These three phases focus not only on the digitization of materials but also on pedagogical transformation through a narrative-driven gamification approach to address student boredom in learning history. The details of the results from each phase are as follows:

1. Analysis Phase (*Analysis*)

This stage identified the underlying issues related to low learning motivation and historical awareness among high school students. Based on a needs analysis and user profiles (user personas), the phenomenon of “imagination disruption” was identified, wherein students perceive conventional history lessons as “bedtime stories” dominated by text-heavy content and the memorization of chronologies. On the other hand, an analysis of Generation Z students’ characteristics (ages 15–18) revealed that they have short attention spans, are highly tech-savvy, and have a strong interest in fiction or adventure games (RPGs). Based on these findings, it was determined that the “Spice Route and Maritime Kingdoms” material is the most suitable subject to be converted into a website-based learning platform (Google Sites). This platform was chosen due to the need for high accessibility, while the Spice Route material was selected because its spatial and temporal flow is ideally suited for adaptation into a challenging digital expedition map.

2. Design Phase (*Design*)

At this stage, the deliverables are a blueprint for the media interface and a gamification roadmap. Unlike linear instructional materials, the history content has been redesigned as an “Expedition Map” that requires active user participation. The storyline (roadmap) is structured in stages, as illustrated in Figure 2.



Figure 2. "Ekspedisi Nusantara" Roadmap

To ensure that game elements support learning objectives (rather than merely serving as entertainment), the researchers developed a narrative gamification map. Complex material is broken down into several specific missions accompanied by a reward system consisting of experience points (XP) and digital badges. The design specifications for these gamification elements are detailed in Table 2.

Table 2. Mapping of Narrative Gamification in the Spice Route Curriculum

Historical Era	Gamification Mission	Reward System
Station 1: Prehistoric Era	Discover and identify virtual artifacts/fossils left behind by early humans.	Badge: Ancient Explorer
Station 2: Hindu-Buddhist Era	Collect fragments of temple reliefs to reconstruct the kingdom's trade routes.	Badge: Architect of Civilization
Station 3: Islamic Kingdom Era	Map merchant shipping routes and locate Islamic trading ports.	Badge: Archipelago Merchant
Station 4: Colonial and Modern Period	Decipher codes from the years of popular resistance to defend the fortress.	Badge: Independence Hero

3. Development Phase (Development)

The development phase resulted in a fully functional prototype of the “Ekspedisi Nusantara” media platform on Google Sites. This product has been published online and can be accessed directly via the official link: <https://sites.google.com/view/ekspedisi/nusantara>. All blueprints from the design phase were realized by integrating visual assets (images, icons, maps, and badges) with evaluation tools (mission quizzes). The realized media interface and user interaction system are presented in Figures 3, 4, and 5.



Figure 3. Implementation of the Media Home Page Interface

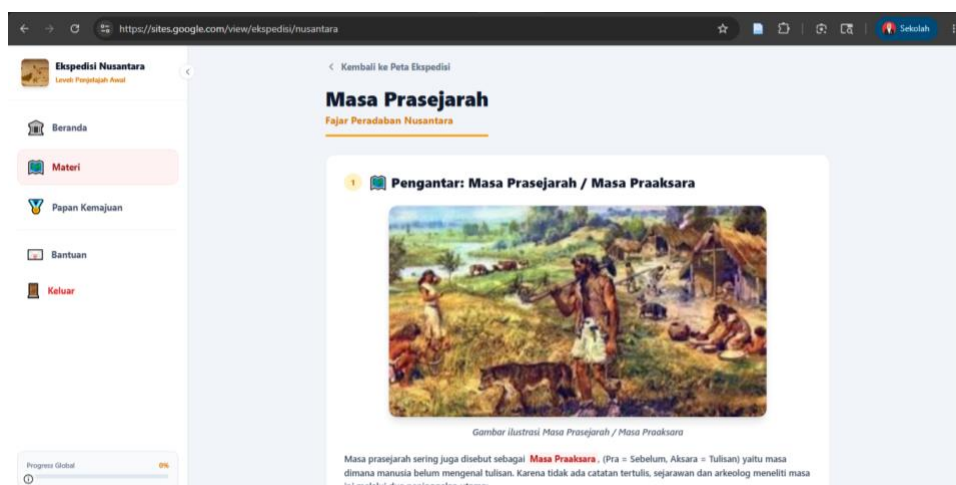


Figure 4. Implementation of the Interface for Each Post's Content

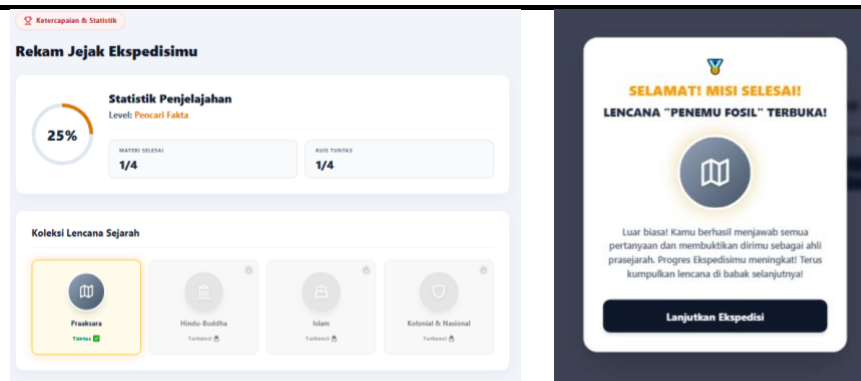


Figure 5. Digital Badge System

In addition to the product implementation, the primary outcome of this phase is validation data on the prototype's feasibility from experts (expert judgment). This validation process determines whether the developed information architecture and gamification logic meet academic pedagogical standards before the system can be deemed a viable educational media innovation.

The assessment process used a closed-ended questionnaire with a four-point Likert scale (scores 1–4) without a neutral option to avoid ambiguity in the evaluation. The evaluation was conducted by a media expert (a professor of educational technology) and a content expert (a high school history teacher). A detailed summary of the feasibility validation results is presented in Table 3 and Table 4.

Table 3. Results of the Feasibility Analysis by Media Experts

Evaluated Aspect	Percentage Score (%)	Average Score (%)
Technical Quality & Accessibility	96,00%	
User Interface (UI/UX) Design	92,00%	95,00%
Website Navigation Ease	95,00%	
Efficiency of Gamification Logic	97,00%	

Table 4. Feasibility Analysis Results by Content Experts

Evaluated Aspect	Percentage Score (%)	Average Score (%)
Historical Accuracy	100,00%	
Curriculum & Assessment Alignment	96,00%	98,33%
Text & Narrative Readability	97,00%	
Educational Content of the Gamification Mission	100,00%	

Based on Table 3, the results show that the cumulative feasibility score from the media expert reached 95.00%, while that from the content expert reached 98.33%. In accordance with the feasibility score conversion formula, both assessment results fall within the 81%–100% range, indicating that the “Ekspedisi Nusantara” media is categorized as “Highly Feasible” for direct implementation in the history learning process at school.

Discussion

The development of the “Ekspedisi Nusantara” media product successfully achieved the research and development objectives, namely the creation of a validated digital history learning environment. Empirical findings during the analysis phase confirmed the theory of “disruption

of imagination” and the chronic problems of conventional history education, which is often viewed as dry, linear memorization (S. Hamid Hasan). This issue was successfully mitigated through the development of a content structure based on four “Historical Era Stations.”

This transformation shifted the learning pattern from a passive, text-based approach to an exploratory, narrative one. The spatio-temporal structure applied to the prototype provides a stronger chronological framework for Generation Z students in understanding the Spice Route. This aligns with the findings of Patel & Bridges (2024), who state that the integration of interactive storytelling into digital platforms can foster learner agency (learning autonomy), where students no longer merely read history but feel they are “experiencing” the events through expedition routes they choose independently.

As an educational technology innovation, the “Ekspedisi Nusantara” platform features a responsive web design built on the Google Sites platform. This design allows the platform to be accessed flexibly across various devices (cross-platform), from laptops to smartphones, while maintaining precise visual layout. The media content consists of a main page, four pages for exploring content posts, and an integrated mission evaluation system that generates redemption codes for digital badges as a form of visual recognition of students’ cognitive achievements.

The main advantages of this product lie in its high accessibility and cost-effective operational efficiency. The use of Google Sites ensures that the platform is accessible to students 24 hours a day at no cost, without the need to install apps that consume device memory a practical solution that is highly relevant for accelerating school digitization on a limited budget (Yogianto & Alrianingrum, 2023). From a pedagogical perspective, the advantage is the implementation of an instant feedback system through digital badges (such as Saudagar Nusantara and Pahlawan Kemerdekaan). Psychologically, this instant recognition has been shown to trigger intrinsic motivation and increase student engagement in completing complex material (Fahrudin & Saefudin, 2025; Shavab et al., 2021).

However, this product has an inherent drawback: it is entirely dependent on a stable internet connection (online-dependent). Additionally, the Google Sites platform lacks a dynamic internal database. Consequently, the system for recording cumulative points (XP) and the student leaderboard cannot yet operate automatically within a single web ecosystem. To work around this limitation, researchers must employ manual integration methods using supporting tools such as Google Forms and Google Sheets (Arief, 2017).

The high evaluation scores from media experts (95.00%) and subject matter experts (98.33%) provide strong academic justification that this prototype is suitable for use as a formal learning tool (Riduwan, 2015). A perfect score (100%) on the aspect of historical accuracy dispels the common concern that narrative dramatization in gamification will obscure objectivity or trigger historical bias (Kamarga, 2017). These results prove that the design of the game’s missions remains grounded in accurate historical facts.

The high media validity (95.00%) was also influenced by the consistent use of a 4-point Likert scale in the validation instrument. By eliminating the “neutral” or “undecided” options, experts were compelled to provide objective evaluations based on the prototype’s actual performance, thereby minimizing central tendency bias a common factor that often undermines the quality of research and development instruments (Aruna et al., 2021).

Theoretically, the success of the “Ekspedisi Nusantara” educational media project demonstrates that 21st-century learning innovations do not always require complex, expensive, or sophisticated software architectures. The harmonious integration of well-developed instructional design, contextual mapping of historical material, and the use of simple game mechanics on a free web platform has been sufficient to create a gamified assessment environment that is reliable, validated, and highly sought after by the new generation of students (Fahrudin & Saefudin, 2025; Young, 2009).

CONCLUSIONS

This study successfully achieved its primary objective, which was to develop an interactive history learning tool titled “Ekspedisi Nusantara” based on Google Sites and integrated with a gamification system. Based on the test results, the prototype received a score of 95.00% from media experts and 98.33% from subject matter experts, which clearly places it in the “Highly Feasible” category. These findings address the research problem by demonstrating that text-heavy maritime history material can be transformed into a valid digital expedition medium to address the phenomena of boredom and “disruption of imagination” among Generation Z high school students. Both practically and theoretically, this study contributes to demonstrating that narrative gamification approaches such as the use of digital badges and tiered missions can be efficiently implemented to enhance student learning autonomy without compromising the objectivity and accuracy of historical content.

However, this study has limitations, namely that the ADDIE model has only been implemented up to the Development stage (no actual field testing has been conducted), as well as the media’s absolute dependence on an internet connection and the lack of a dynamic internal database on the platform. Therefore, the recommendation for future research is to conduct the Implementation and Evaluation stages on a large-scale classroom basis to directly measure the media’s effectiveness on students’ cognitive learning outcomes. Additionally, in line with constructive feedback from expert validators, it is strongly recommended that this prototype be further developed into an Android-based mobile application to mitigate connectivity constraints and create a more integrated gamified competition system. Ultimately, the “Ekspedisi Nusantara” innovation holds significant importance as a practical and solution-oriented step toward modernizing history education to make it more relevant, meaningful, and adaptable to the advancements in 21st-century educational technology.

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