

Development of Web-Based Learning Media on Hindu-Buddhist History Materials for Tenth-Grade Students at SMA Negeri 7 Semarang

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Abstrak

Penelitian ini bertujuan untuk mengembangkan media pembelajaran berbasis web pada materi sejarah kerajaan-kerajaan Hindu-Buddha untuk siswa kelas X di SMA Negeri 7 Semarang. Latar belakang penelitian ini didasarkan pada belum tersedianya media pembelajaran berbasis web yang digunakan dalam proses pembelajaran sejarah, khususnya pada topik kerajaan-kerajaan Hindu-Buddha. Guru mata pelajaran sejarah juga mengharapkan adanya media inovatif yang dapat mendukung kegiatan belajar mengajar secara lebih interaktif dan fleksibel. Penelitian ini menggunakan metode Research and Development (R&D) dengan model pengembangan ADDIE yang meliputi tahap analisis, desain, pengembangan, implementasi, dan evaluasi. Produk yang dihasilkan berupa website pembelajaran yang dapat diakses secara daring dan menyajikan materi ajar, video pembelajaran, serta latihan soal. Media ini diharapkan dapat menjadi solusi dalam meningkatkan kualitas pembelajaran sejarah di sekolah.

Kata kunci: media pembelajaran, berbasis web, sejarah hindu-buddha.

Abstract

This study aims to develop web-based learning media for the topic of Hindu-Buddhist kingdoms in history subjects for tenth-grade students at SMA Negeri 7 Semarang. The background of this research lies in the absence of web-based learning media applied in the history learning process, particularly for the topic of Hindu-Buddhist kingdoms. History teachers also expressed the need for innovative media that can support teaching and learning activities in a more interactive and flexible manner. This study employed a Research and Development (R&D) method using the ADDIE model, which includes analysis, design, development, implementation, and evaluation stages. The product developed is a web-based learning platform accessible online, containing instructional materials, educational videos, and practice questions. This media is expected to serve as a solution to improve the quality of history education in schools.

Keywords: learning media, web-based, Hindu-Buddhist history.

INTRODUCTION

History learning in senior high schools plays an essential role in shaping students' historical awareness and national character. However, in practice, history learning is often associated with lecture methods and rote memorization. This condition makes history lessons monotonous and less engaging for students. This is reinforced by a survey conducted by Zenius in 2023, involving

3,217 respondents consisting of Indonesian high school and university students. The results showed that 27.94% of respondents preferred practical and contextual learning methods over conventional lectures and memorization.

Moreover, history learning is often perceived as irrelevant to everyday life. Much of the material delivered tends to focus solely on past events without contextualizing their relevance to the

present. In fact, one of the main objectives of history education is for students to draw lessons from the past to face future challenges.

The success of a teacher is determined not only by their mastery of the subject matter and teaching strategies but also by their ability to integrate technological advancements into the learning process. Prensky (2001) stated that today's learners are digital natives who prefer learning through interactive, technology-based media. Therefore, there is a need for web-based learning innovations that can be accessed anytime and anywhere while meeting students' learning preferences.

Based on observations at SMA Negeri 7 Semarang, web-based learning media has not yet been utilized in history lessons, particularly for the topic of Hindu-Buddhist kingdoms. History teachers also expressed their wish for media that could support interactive learning and align with the development of information technology today.

Based on this background, this study aims to: (1) develop web-based learning media for Hindu-Buddhist history materials; and (2) describe the development process of the media as an innovative alternative to improving the quality of history learning at SMA Negeri 7 Semarang.

METHODS

This research employed a Research and Development (R&D) method using the ADDIE development model, consisting of five stages: Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model was selected for its systematic approach to developing learning media products.

The research subjects consisted of 3 classes at SMA Negeri 7 Semarang, namely classes X-3, X-5, and X-6, with a total of 92 students. Additionally, 1 history teacher was involved as a partner in the media implementation process.

The analysis stage was carried out through classroom observations and interviews with the teacher to determine the appropriate media needed in the learning process. In addition, student learning needs were identified using a distributed questionnaire.

The design stage included planning the content, website structure, user interface design, and preparation of evaluation instruments in the form of interactive quizzes.

The development stage covered the preparation of learning materials, production of visual media, creation of instructional videos, and preparation of quizzes. The resulting media was validated by subject matter experts and media experts before implementation in the classroom.

The implementation stage involved trying out the web-based learning media with students during history lessons. Students were asked to access the media, study the materials, watch the videos, and complete quizzes online.

The evaluation stage consisted of both formative and summative evaluations. Formative evaluation was conducted during development through expert validation, while summative evaluation was carried out after implementation through student response questionnaires and teacher reflection.

Data analysis techniques in this study utilized descriptive quantitative and qualitative approaches. Questionnaire data were analyzed quantitatively using percentages to determine students' responses to the media, while observation and interview data were analyzed qualitatively to describe the learning dynamics and the teacher's feedback on the media.

RESULTS AND DISCUSSION

This section explains the results of each stage of web-based learning media development using the ADDIE model. Each phase is described in detail, supported by both quantitative data and theoretical reflections.

The analysis stage aimed to identify learning needs and problems in the field. Observations at SMA Negeri 7 Semarang, particularly in history learning

for tenth-grade students, showed that classes were still dominated by lectures and textbook reading. Technology-based media that could support visual and interactive learning had not been utilized. Interviews with the history teacher revealed that students often struggled to comprehend the materials due to the lack of visualization, such as maps of kingdoms, cultural heritage artifacts, or the process of cultural acculturation. Teachers expressed a strong desire for technology-based learning media accessible anytime to support contextual, independent learning.

The learning needs survey distributed to students showed that more than 80% of students found it difficult to understand history through lectures alone, while over 85% stated that they would be more interested in learning if supported by visual and interactive media. These findings reinforced the importance of developing web-based learning media to overcome history learning challenges.

Based on the analysis results, the next step was to design the learning media according to the identified needs. The media was developed as an interactive website using the WordPress platform due to its flexibility, ease of use, and support for multimedia integration such as videos, images, quizzes, and text.

The website structure consisted of: (1) Homepage, (2) Materials menu, (3) Historical heritage gallery, (4)

Instructional videos, (5) Online quizzes, and (6) Student discussion forum.

The learning materials were restructured to be concise, thematic, and aligned with students' learning styles. Each subtopic included infographics, interactive maps, and images of historical artifacts. Interface elements such as color choices, fonts, and navigation were selected to optimize readability and user experience.

This stage transformed the design into a functional learning product. The process involved compiling content from textbooks, journals, and other credible academic references aligned with the curriculum. The materials were converted into digital formats, with instructional videos produced in short durations (3-5 minutes) narrated by the history teacher for better contextual engagement.

All materials were uploaded to a WordPress-based website with additional educational plugins for interactive quizzes and embedded videos. An alpha test was conducted to ensure full functionality, followed by validation by two experts (subject matter expert and media expert). Feedback led to revisions in material order, video explanations, and simplification of textual content.

The developed media was implemented in tenth-grade history classes X-3, X-5, and X-6 at SMA Negeri 7 Semarang over two learning sessions (each 90 minutes long). Students accessed the

website via their respective devices to engage with materials, watch videos, view the gallery, and complete quizzes.

During implementation, teachers guided students, while researchers documented student responses. Overall, students appeared more engaged, enthusiastic, and independent in exploring the learning materials.

After the learning sessions, students filled out a questionnaire covering five aspects: ease of use, visual appearance, clarity of materials, usefulness, and willingness to use the media again.

Table 1. Questionnaire Results

Aspect	Positive Response (%)
Ease of use and navigation	86%
Clarity of content and visuals	84%
Relevance to history learning	90%
Quality of instructional videos	88%
Benefits of practice quizzes	83%
Willingness to use the media again	78%

The history teacher also provided positive feedback, stating that the media facilitated the delivery of complex concepts and helped students engage actively and independently in the learning process.

Evaluation was conducted to assess the overall effectiveness and feasibility of the media. Formative evaluation involved expert validation during the development stage, while summative evaluation

included analysis of student questionnaires and teacher reflections after implementation.

The evaluation results showed that the web-based learning media was highly accepted, both technically (navigation, display) and pedagogically (improving understanding and engagement). Students who previously showed little interest in history demonstrated increased enthusiasm. The teacher's reflections highlighted that the media supported differentiated learning by allowing students to access materials at their own pace.

Each development stage demonstrated that the web-based learning media using the ADDIE model was effective and relevant. The media addressed the needs of both teachers and students for interactive, flexible, and contextual history learning.

The integration of multimedia elements—text, images, videos, and quizzes—successfully enhanced students' motivation and comprehension of Hindu-Buddhist history. Additionally, the media empowered students to explore learning materials independently, aligned with the principles of *Merdeka Belajar* (Independent Learning).

These findings support constructivist theory, emphasizing the importance of active student involvement in building knowledge. Prensky (2001) emphasized that digital natives require

interactive, technology-based learning approaches. Similarly, Munir (2012) and Sadiman (2010) argued that integrating ICT into learning increases student motivation, independence, and achievement.

With these results, the developed web-based learning media is not only feasible for classroom use but is also recommended for further development in other historical topics or even across different subjects.

CONCLUSION

This study produced a web-based learning media developed using the ADDIE model for Hindu-Buddhist history materials for tenth-grade students at SMA Negeri 7 Semarang. The media was designed as an interactive website featuring instructional materials, educational videos, images, and online practice exercises. Based on student questionnaires and teacher feedback, the media was found to be user-friendly, engaging, and supportive in improving students' comprehension of historical materials. Therefore, this web-based learning media can serve as an innovative alternative to enhance the quality of history learning in schools.

It is recommended that web-based learning media continue to be developed and utilized in history education and other subjects requiring visual and interactive approaches. Teachers are encouraged to integrate this technology into their

instructional practices to make learning more engaging and relevant to the characteristics of digital-native learners. Future researchers are expected to expand the development of this media by incorporating automatic evaluation features, online discussion forums, or collaborative projects to make the media even more interactive and communicative.

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