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Multimedia Development Android-based Learning of History at SMP Negeri 2 Paranggupito

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ABSTRACT

History learning at the junior high school level still faces several challenges, such as low student learning interest, dominance of lecture methods, and limited use of interactive learning media. These conditions make students difficult to understand chronology, cause-effect relationships, and historical events comprehensively. This study aims to develop Android-based learning multimedia for eighth-grade history subjects at SMP Negeri 2 Paranggupito and determine the feasibility of the media based on expert validation. This research used the Research and Development (R&D) method with the ADDIE development model consisting of analysis, design, development, implementation, and evaluation stages. The product was developed using Smart Apps Creator (SAC) in the form of an Android APK application containing historical materials, images, audio, animations, and interactive quizzes. Data collection techniques included observation, interviews, and validation questionnaires. The results showed that the Android-based learning multimedia obtained a "Very Good" category based on material expert and media expert assessments, indicating that the product was feasible for use in history learning. The Android-based multimedia learning application provides a more engaging, interactive, flexible, and relevant learning experience for digital generation students.

Keywords: *Learning Multimedia, Android, Smart Apps Creator, History, ADDIE*

INTRODUCTION

Twenty-first-century education requires students to possess critical thinking, creativity, communication, and adaptability skills in response to the rapid development of digital technology. In this context, the use of instructional media has become an essential component in creating effective and meaningful learning experiences. Instructional media serves as a means of delivering information that helps students understand learning materials in a more concrete, engaging, and interactive manner (Arsyad & Hali, 2014). According to Mayer and Richard E. (2009), the use of multimedia in learning enhances student understanding by simultaneously integrating visual and verbal information. The current development of digital multimedia confirms that supporting technology is increasingly easy to use and is becoming a trend across regional boundaries (Setyaningsih, 2023). While previously limited to sound and text, multimedia has now undergone a massive transformation to include graphics, animation, video, and interactive links, triggering a shift in thinking about educational issues (Setyaningsih, 2023).

The urgency of utilizing interactive media is also driven by the shift in the educational landscape post-COVID-19 pandemic, where the learning process has shifted completely from face-to-face to screen-to-screen, which demands educators' mastery of digital science and technology to deliver meaningful content (Peramtasari, 2023; Pinilih, 2023). The use of cloud computing and digital platforms has been shown to improve learning efficiency at the vocational school level (Purnama et al., 2024), and future immersive technologies such as the Metaverse are also being explored for their potential to create natural 3D interaction spaces in various institutions worldwide (Alhakimi, 2023). Furthermore, the development of educational technology has also encouraged the use of adaptive and multimodal digital media to train critical thinking skills and problem-solving creativity (Yasni et al., 2025; Sasongko et al., 2025). Therefore, creative learning variations through interactive media are essential for teachers to eliminate boredom, embrace the diversity of student learning styles, and foster an inclusive classroom atmosphere (Arifin et al., 2025).

However, the reality on the ground reveals a significant gap. History instruction at the junior high school (SMP) level generally still faces significant challenges in the form of low learning interest, the dominance of conventional lecture methods, and limited variety of supporting media, resulting in low student learning outcomes (Fitriani & Ridhani, 2025). Based on initial observations at SMP Negeri 2 Paranggupito, history instruction was dominated by one-way lectures and the use of static printed textbooks, leading to student passivity and a lack of motivation. The abstract nature of historical content, which demands chronological reasoning and cause-and-effect relationships, often triggers misconceptions when presented without adequate visualization (Wahyudi, 2020). As a result, student engagement in classroom activities is minimal. Students' smartphone use has not been optimized for academic purposes, but is instead limited to non-instructional activities.

To address this gap, systematic pedagogical innovation is needed. One key alternative is designing interactive multimedia environments using measurable instructional design models such as ADDIE or Dick & Carey, which have proven valid in organizing digital content comprehensively (Yasni et al., 2025; Sasongko et al., 2025). Other innovative models, such as Game-Based Learning (GBL), using simulations or serious games, have also been shown to be effective in increasing intrinsic motivation and academic performance in the vocational education sector (Raziana & Wibawanto, 2025). Structured instructional approaches combined with visual media have been shown to significantly enhance students' conceptual understanding (Fitriani & Ridhani, 2025). Through the integration of Smart Apps Creator (SAC) software, teachers can produce interactive Android-based multimedia applications with APK extensions without the need for complex coding skills. This application can present text, audio, video, animation, and interactive quizzes in a single, flexible, user-friendly interface. Previous research confirms that Android-based learning media positively impacts student learning motivation (Hermansyah & Sari, 2020), while the use of interactive animations helps reconstruct historical imagination contextually (Hasan, 2024).

Based on the urgency and gaps, this research focuses on two main objectives, namely: (1) developing Android-based learning multimedia for the History subject of Class VIII at SMP Negeri 2 Paranggupito by systematically combining visual-verbal elements, and (2) testing the level of suitability of the media based on assessments from material experts and media experts in order to produce valid and relevant products for the characteristics of today's digital generation.

METHODS

This research method uses a Research and Development (R&D) approach, applying the ADDIE development model, which consists of five main stages:

1. Analysis Phase: The analysis phase was conducted to identify learning needs, characteristics of eighth-grade students, obstacles in history learning at SMP Negeri 2 Paranggupito, and the technical requirements for media devices. The analysis results showed that the majority of students already owned Android-based devices but had not yet utilized them as learning instruments.
2. Design Phase: The design phase included developing a competency map, creating a media flow storyboard, designing the user interface, navigation structure, selecting historical materials, and evaluating instruments in the form of interactive quizzes. The interface was designed to be simple for ease of use by junior high school students.
3. Development Phase: The development phase translated the storyboard design into Smart Apps Creator (SAC) software. The final output was an Android-based application with an APK extension that integrated text, historical visual illustrations, audio narration, animation, navigation buttons, and interactive quiz instruments.

RESULTS AND DISCUSSION

Results

1. Results of Multimedia Development

The product produced in this research is an Android-based multimedia learning application for History in grade VIII of junior high school. The application was developed using Smart Apps Creator (SAC) and packaged into an APK (Android Package) file format that can be installed directly on students' Android devices. The main menu components in this application include: a welcome page (splash screen), core and basic competency menus, history learning materials, a gallery of educational videos and animations, interactive quizzes, and a developer profile. The visual aspects harmoniously combine color composition, historical reconstruction images, audio narration, and animated transitions to optimize students' sensory stimulation during learning.

2. Subject Matter Expert Validation Results

Validation by subject matter experts focused on assessing the suitability of the material's substance with the applicable curriculum, the accuracy of historical chronology concepts, the systematic presentation of the material's sequence, and the readability of the linguistic aspects. Based on the tabulation of validation questionnaire data, the subject matter experts gave a qualitative rating of "Very Good" and declared the product suitable for classroom implementation. High ratings were obtained for indicators of alignment of learning outcomes and the accuracy of illustrations supporting abstract concepts. Some constructive input from the content experts included simplifying sentences in overly lengthy narrative descriptions and adding timeline infographics for certain historical events to strengthen the chronological structure.

3. Media Expert Validation Results

The validation by the media experts evaluated the quality of the interface design, navigation efficiency, level of interactivity, layout aesthetics, and ease of installation on mobile devices. The overall assessment by the media experts resulted in a "Very Good" category. Ease of operation and responsiveness of the menu buttons received optimal scores. Recommendations for improvement provided by the media experts included adjusting the contrast of the text font size on some background pages and optimizing the placement of the back button to prevent it from overlapping with the visual elements of the content.

Discussion

The findings of this research confirm that the developed Android-based learning multimedia is suitable and effective for use as an instructional medium in history teaching at the junior high school level. The application's ability to integrate text, visuals, audio, and interactive quizzes provides a multidimensional stimulus that can significantly improve student attention.

The theoretical implications of these results align with Mayer's Multimedia Learning Theory, which states that students' memory retention and conceptual understanding will develop optimally when information is processed through visual and verbal channels simultaneously. The integration of these digital multimedia elements reduces the cognitive overload caused by one-way text exposure (Mayer & Fiorella, 2021). Furthermore, the development of this interactive media with the APK extension addresses the challenges of multimedia modernization, which demands high flexibility, allowing users to navigate, create, and interact independently across spatial and temporal boundaries (Setyaningsih, 2023).

In the context of classroom management and student engagement, this Android-based media provides a solution to the problem of student boredom caused by monotonous lecture methods. As synthesized by Arifin et al. (2025), variations in learning through adaptive digital media have proven successful in building a dynamic, inclusive classroom climate that supports 21st-century skills. This effectiveness is also similar to the implementation of interactive digital platforms such as Nearpod, developed with structured instructional design, where significant improvements in students' higher-order thinking and critical analysis skills were observed (Sasongko et al., 2025). Through concrete visualizations, historical content initially perceived as abstract and boring can be transformed into contextual and engaging material, similar to the positive impact of using concrete media in improving student learning outcomes in the classroom (Fitriani & Ridhani, 2025).

This mobile technology innovation also offers the flexibility to use devices as self-regulated learning tools. When device use is properly controlled and supported through educational media, digital technology becomes the foundation for positive character and habits for the digital generation (Pinilih, 2023). This flexibility is also relevant to the principles of differentiated learning and the utilization of the Zone of Proximal Development (ZPD), where students can interactively learn material at their own pace (Pawitra et al., 2025). Furthermore, the integration of interactive quizzes within the SAC application provides instant feedback (formative assessment) that is essential for students' cognitive development, aligning with the urgency of technology-based metacognitive assessments that train planning, monitoring, and self-evaluation in problem-solving (Buwono et al., 2025).

Utilizing this media also contributes to students' readiness to face a more complex digital ecosystem. The introduction of Android-based media from elementary school helps foster digital literacy, technical problem-solving, and emotional management when interacting with media, which are crucial assets for future career development in the era of Industry 4.0 and the digital society (Septyventia et al., 2024; Vitariyanti et al., 2024). The integration of authentic scenarios and game elements within the interactive SAC quizzes also adopts the essence of Game-Based Learning (GBL) pedagogical innovation, which has been proven effective in triggering intrinsic motivation and in-depth understanding (Raziana & Wibawanto, 2025). Thus, Smart Apps Creator (SAC) has proven to be a highly applicable and efficient alternative instrument for teachers to produce independent mobile media to realize innovative transformations in history learning.

CONCLUSION

This research has successfully developed an innovative product in the form of an Android-based history learning multimedia application for eighth-grade students at SMP Negeri 2 Paranggupito, adopting the structured ADDIE instructional design model. This learning

multimedia was independently produced using the Smart Apps Creator (SAC) platform and produces an APK file that integrates text components, historical image visualizations, audio narration recordings, transition animations, and interactive evaluation quizzes. Assessments by both material and media experts consistently placed this product in the "Very Good" quality category, thus declaring this Android application valid and highly suitable for implementation in history learning in schools. This Android-based multimedia application has proven to be able to provide a more engaging, interactive, and flexible history learning experience, while also being a relevant solution for optimizing the potential of devices to increase the active engagement of digital-generation students.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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