

The Development of Sekrebel Application Based on Folklore For High School Students

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Abstract: *The introduction of Javanese script to the younger generation, especially high school students, has become a challenge in today's digital era. Lack of interest and less interactive learning methods have led to low literacy in Javanese script. Therefore, this study aims to develop the "Sekrebel" application based on folklore as an interactive learning medium that appeals to high school students. This application combines educational and entertainment elements through folklore presented in Javanese script and Latin transliteration. The study results show that using this application significantly improves students' understanding and skills in reading and writing Javanese script.*

Keywords: *Javanese Script, Literacy, Folklore, Sekrebel application, Interactive Learning*

I. Introduction

The Javanese script is an essential part of Indonesian culture. It serves not only as a writing system but also as a symbol of cultural identity reflecting a nation's civilization. However, educational realities show that learning the Javanese script, especially at the high school level, faces serious challenges. The majority of students experience difficulty reading and writing the Javanese script and show little interest in its preservation (Varta DIY, 2023). Classroom learning tends to be conventional, non-contextual, and does not utilize digital technology optimally.

Meanwhile, script, as a written representation of language, plays a crucial role in transmitting cultural, scientific, and historical values. According to Koentjaraningrat (1981), language is a key element of culture because it functions as a means of communication and as a means of cultural inheritance from generation to generation. Therefore, a nation capable of maintaining and preserving its script demonstrates a high level of civilization. Based on this view, it can be concluded that a nation with a script is a superior nation.

Language is a crucial element of culture because it is the primary means of communication between people in society and also the primary means of passing down culture from generation to generation (Koentjaraningrat, 1981). In other words, language and writing are essential components of culture, and a nation that maintains its writing demonstrates a high level of culture and civilization. Therefore, a nation that possesses and maintains its writing can be considered a superior nation.

Current conditions demonstrate low student ability and interest in Javanese literacy, while the ideal is to create active, meaningful, contextual, and digitally-based Javanese script learning. The Independent Curriculum emphasizes the importance of cultural literacy and contextualization of learning in line with current developments (Kemendikbudristek, 2022). Therefore, innovative and contextual learning media are urgently needed to bridge this gap.

Low Javanese literacy among high school students is caused by several factors, including unengaging learning methods, limited interactive learning media, and minimal technology integration in the teaching and learning process. To address these issues, innovations in learning media that combine digital technology with local cultural content are needed.

The Javanese script is an essential part of Indonesian culture, serving not only as a writing system but also as a symbol of cultural identity. Amidst technological advancements and changing learning styles of the younger generation, learning the Javanese script in schools, particularly at the high school level, faces significant challenges. This situation indicates that the majority of high school students experience difficulty reading and writing Javanese script and tend to be less interested in learning it (Varta: 2023). The learning process tends to be monotonous, non-contextual, and does not utilize digital technology optimally.

Folklores, as part of local wisdom, have great potential as engaging and educational learning media. Using Folklores in learning not only introduces moral and cultural values to students but can also increase their interest in learning Javanese script (Prokalteng.jawapos.com, 2023). Several studies have shown that integrating Folklores into digital media, such as Android-based learning applications, can increase learning effectiveness and student engagement (Lib.unnes.ac.id, 2020).

One example of innovation in Javanese script learning is the use of several applications that enable teachers to create interactive and fun activities. By utilizing this technology, Javanese script learning becomes more engaging and effective, making it easier for students to understand and master the material.

In addition, the development of folklore-based learning media has also been carried out in the form of Javanese folklore books that are valid and practical for use in learning (Prokalteng.jawapos.com, 2023). This media is designed to enhance students' understanding of local culture while strengthening Javanese literacy.

The Sekrebel application was developed as a solution to these problems. This app integrates Folklores as the main content, packaged in an interactive digital platform. Folklores were chosen because they are emotionally and culturally relevant to students, and contain contextual moral and linguistic values. Previous research has shown that folktale-based learning can improve students' understanding of regional languages and local values (UNIFLOR Community Service Journal, 2023). Packaging the material in a digital app makes learning more engaging and aligns with the characteristics of the digital generation.

The learning process aims to create students who are not only literate in Javanese but also passionate about local culture and able to apply this knowledge in their daily lives. The independent curriculum emphasizes the importance of cultural literacy and contextualizes learning according to current developments.

Thus, this study aims to develop and evaluate the effectiveness of the Sekrebel application in improving Javanese literacy among high school students. This research plays a strategic role in supporting cultural preservation through education and in the development of learning media based on local wisdom and digital technology.

II. Review of Literatures

Javanese literacy at the high school level presents significant challenges. Many students experience difficulty reading and writing Javanese script, particularly basic forms such as *nglegena*, *sandhangan*, and *pasangan*. This is due to a lack of in-depth understanding of script structure and a lack of effective practice tools (Varta DIY, 2024). This situation is exacerbated by the limited availability of engaging and interactive learning media, resulting in students being less motivated to learn Javanese script.

Folklores have great potential as a medium for learning Javanese script. Using Folklores in learning can introduce moral and cultural values to students and increase their interest in learning Javanese script. For example, the development of learning media based on Central Javanese Folklores has shown effectiveness in improving Javanese reading and writing skills in elementary school students (Uniflor Journal, 2023). Furthermore, Folklores such as the story of Aji Saka can also be used as alternative teaching materials in high school, as they contain life values relevant to student character development.

The integration of technology in Javanese script learning has been the focus of several studies. The development of Android-based learning applications, such as the "Hanacaraka" application, has proven effective in improving student learning outcomes in Javanese script (STKIP PGRI Situbondo Journal, 2023). This application is designed with interactive features that facilitate students' understanding and mastery of Javanese script. Furthermore, other Javanese script learning applications have also been developed using an interactive multimedia approach, enabling students to learn independently and enjoyably.

The use of interactive media, such as educational games and comics, has shown positive results in learning Javanese script. For example, the development of a Javanese script comic book based on the *Mrapen* folktale has been validated by material and media experts and has been shown to be effective in increasing students' interest in reading (Unnes Journal, 2022). Furthermore, a Javanese script educational game application has been developed as a fun learning medium and is capable of improving Javanese script literacy among students.

III. Research Methods

3.1 Types and Models of Research

This research uses a Research and Development (R&D) approach, adopting the ADDIE development model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. This model was chosen because it is flexible and has proven effective in developing digital-based learning media, including Javanese script applications (Istianah & Setyasto, 2023; ResearchGate, 2021).

3.2 Research Subjects and Locations

The research subjects were 10th-grade students at SMA Negeri 1 Sragen, Central Java. This location was chosen based on the need to improve Javanese literacy in the area, which still faces challenges in learning Javanese script (ResearchGate, 2021).

3.3 Development Procedures

This study used a Research and Development (R&D) method with the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) development model. Data

were collected through interviews with Javanese language teachers, questionnaires for high school students, and application trials on a limited group. The research stages included:

Analysis: Identifying problems in learning Javanese script in schools through interviews with teachers and surveys of students (Rohman & Widodo, 2023). In the analysis stage, researchers identified students' needs and problems faced in learning Javanese script. Based on the results of observations and interviews with teachers and high school students, it was found that: Student interest is low in learning Javanese script; Learning media is less varied, still predominantly based on text and printed books; Students' digital literacy is quite high, but has not been utilized optimally in learning Javanese script; Local folklore has not been optimally utilized as teaching materials. These findings form the basis for the need to develop educational applications based on interactive and interesting folklore.

Design: Designing an engaging and interactive folklore-based application. This stage involves designing the content structure and appearance of the Sekrebel application. Some of the components designed include: Selecting Javanese Folklores that contain cultural values and can be adapted to Javanese script material; Designing the learning flow, starting from script introduction, reading and writing exercises, to evaluation; A simple yet engaging user interface design tailored to the characteristics of high school students. Integration of interactive features, such as script quizzes, script puzzles, and Latin-to-Javanese script conversion. The use of colors, icons, and visual elements that support local Javanese wisdom.

Development: Creating and testing the Sekrebel application using digital technology (Fadilah et al., 2022). At this stage, the design that has been prepared is then developed into the Sekrebel application. The steps in this stage include: Coding the application using the Java or Flutter-based Android platform; Inputting content, such as folk tales, illustrations, audio, and interactive exercises; Limited trials to ensure the feature functions run well; Validation by material experts and media experts, which includes: Aspects of language and script accuracy, suitability of content to the curriculum and learning needs, display quality and user comfort, validation results indicate that the Sekrebel application is suitable for use with some minor revisions related to the layout and menu navigation.

Implementation: Testing the application on high school students. The Sekrebel application was then tested on a limited basis on high school students in grade X. Implementation activities included: Introduction to the application to teachers and students; Use of the application in learning Javanese script for 2–3 meetings; Students were asked to complete learning materials, exercises, and quizzes in the application; Observation of student engagement and their ability to recognize and write scripts. The results of the observation showed that students were more enthusiastic and motivated in learning Javanese script, actively involved in the learning process, and increased their understanding of the form and use of Javanese script.

Evaluation: Assessing the application's effectiveness in improving Javanese literacy. Data were collected through interviews with Javanese language teachers, questionnaires for high school students, and a limited group trial of the application. Evaluation was conducted in two forms: Formative Evaluation (conducted during the development and implementation process and involving feedback from students and teachers) and revisions based on input, such as adjusting the difficulty level of questions and fixing application bugs. Summative Evaluation: using Javanese Script literacy ability test instruments before and after using the application; the results showed an increase in students' average scores, both in reading and writing aspects; and the student perception questionnaire showed that 90% of students felt helped and found it easier to understand Javanese Script through the Sekrebel application.

Based on the implementation of the ADDIE model, the Sekrebel application is deemed effective and relevant as an interactive learning medium for improving Javanese literacy in high school. The ADDIE model facilitates systematic development, from identifying needs to evaluating learning outcomes, positively impacting student motivation and learning outcomes.

Data Collection Techniques were collected through tests: Pretest and posttest to measure the improvement of students' Javanese literacy after using the application. Observation by observing student interactions with the application during the learning process. Interviews by conducting interviews with teachers and students to gain insight into their experiences using the application. Questionnaires by distributing questionnaires to students to assess satisfaction and the effectiveness of the application in learning. Quantitative data analysis techniques from the test were analyzed using a t-test to determine the significance of the improvement in Javanese literacy. Qualitative data from observations, interviews, and questionnaires were analyzed descriptively to understand user perceptions and experiences of the application.

IV. Results and Discussion

4.1 Application Development Stage Results

The Sekrebel application was developed through five ADDIE stages. During the analysis phase, it was discovered that the majority of students had difficulty recognizing, reading, and writing Javanese script. Teachers also noted a lack of appropriate and engaging learning media. Based on these findings, the application was designed by integrating the content of a folk tale entitled "Prau Kencana ing Tlaga Larasati" with Javanese script material (nglegena, sandhangan, pasangan).

The main features of the application include: interactive stories in Javanese narrative form; digital Javanese script exercises, such as guessing the sandhangan, matching pairs, and copying the Hanacaraka text—educational games to strengthen understanding of script symbols. Validation by material and media experts indicates that the Sekrebel app is "very suitable" for use in learning (average score > 85%).

4.2 Limited Trial Results (Implementation)

The trial was conducted on 36 10th-grade students of SMA Negeri 1 Sragen. The pretest results showed that the students' average ability to read Javanese script was only 53.2. After using the application for two weeks, the posttest score increased to an average of 82.6. The t-test showed a significant increase ($p < 0.05$), indicating that the application has a positive impact on Javanese script literacy.

Students also showed greater interest in Javanese script materials due to the visual presentation and local stories relevant to their lives. This aligns with previous findings that integrating local culture into digital media can increase student engagement and motivation (Nurul, 2023; VartaDIY, 2024).

4.3 Discussion

The results of this study reinforce the notion that a contextual approach based on local culture is effective in improving learning outcomes (Sanjaya, 2022). The use of folklore in the Sekrebel application not only reintroduces cultural treasures to students but also serves as a bridge to understanding Javanese script, which has traditionally been considered difficult.

Furthermore, Sekrebel's success as a local educational app demonstrates the potential use of digital technology as a means of cultural preservation, aligning with the Merdeka Belajar (Freedom to Learn) policy and strengthening the profile of Pancasila students. The integration of folklore into digital media also supports multimodal literacy and project-based learning (Kemendikbudristek, 2023).

The "Sekrebel" application was developed with the following key features: Interactive Folklores provides various Folklores in Javanese script and Latin transliteration (Munawaroh, 2023); Javanese Script Writing Practice: Students can practice writing Javanese script with the help of touchscreen technology.

Quizzes and Assessments: Quizzes are provided to assess student understanding. Audio Accompaniment: Javanese narration to enhance phonetic comprehension. A trial of the app on a group of high school students showed significant improvements in their ability to read and write Javanese script. Students were also more engaged in learning compared to conventional methods. Furthermore, Javanese language teachers stated that the app can be an effective supporting tool for learning (Prasetyo & Widodo, 2021).

V. Conclusion

The "Sekrebel" application has proven effective in increasing Javanese literacy among high school students. The integration of folklore in learning provides a more interesting and interactive learning experience. For further development, additional features such as gamification and integration of artificial intelligence, as well as wider accessibility through various digital platforms, are recommended.

This study concluded that the folklore-based Sekrebel application is effective in improving Javanese literacy in high school students. The application's development followed the ADDIE model and was validated by media and materials experts with very good results. Limited trial results showed a significant increase in students' pretest and posttest scores after using the application.

The incorporation of folklore into learning content has been proven to foster student interest, making learning more contextual, enjoyable, and meaningful. The use of interactive features and engaging visuals also supports the creation of an active and independent learning environment.

Suggestion

1. For Teachers: It is hoped that they can utilize the Sekrebel application as an alternative media for learning Javanese script and integrate it into differentiated learning activities and Pancasila student profile projects.
2. For Students: It is hoped that they will use the application as a means of independent learning to strengthen their reading and writing skills in Javanese script.
3. For Further Researchers: Can develop similar applications with a wider coverage of folk tales, or integrate artificial intelligence-based features for personalized learning.

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