



Smart Apps Creator Warak Ngendhog with SAVI Learning Model to Enhance Critical Thinking and Poetry Comprehension

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ABSTRACT

Purpose of the study: This study aims to design, assess the feasibility, and evaluate the effectiveness of *Smart Apps Creator Warak Ngendhog* as a digital learning medium to enhance critical thinking and poetry comprehension among Grade IV students at Elementary School Kalibanteng Kidul 01.

Methodology: Insects The research employed a Research and Development (R&D) approach using the Borg & Gall development model, completed up to the eighth stage. Participants included 28 Grade IV students. Data collection involved feasibility assessments by experts, teacher and student response questionnaires, normality testing, t-tests, and N-Gain analysis.

Main Findings: The *Smart Apps Creator Warak Ngendhog* media was successfully developed to address learning needs and promote both cognitive and literary skills. Feasibility ratings were highly positive, with scores of 96% from media experts and 90% from content experts. Statistical analysis confirmed its effectiveness, with t-test results showing Sig. (2-tailed) = 0.000 (< 0.05).

Novelty/Originality of this study: This research introduces an innovative integration of local cultural heritage—*Warak Ngendhog* poetry—into a modern, interactive digital application developed with *Smart Apps Creator*. Unlike conventional poetry teaching methods, the media adopts the SAVI (Somatic, Auditory, Visual, Intellectual) learning model, tailored to students' developmental levels, and incorporates HOTS (Higher Order Thinking Skills)-based evaluation questions. This dual emphasis on cultural literacy and 21st-century learning skills positions the media as both a preservation tool for local traditions and a catalyst for higher-order cognitive development.

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1. INTRODUCTION

Education is an essential aspect of human life that enables individuals to explore and develop their potential, acquire knowledge, skills, and values, and play a meaningful role in society [1]. Beyond cognitive development, education also shapes a superior generation capable of meeting the demands and challenges of an increasingly complex era. In today's digital age, the integration of technology in learning has become indispensable, offering opportunities to enhance student engagement, promote innovative teaching practices, and prepare learners for 21st-century competencies. At the elementary school level, Indonesian language learning plays a central role in developing students' language and literacy abilities, encompassing the four core skills—listening, reading and viewing, speaking and presenting, and writing—outlined in Kepmendikbudristek No. 033 of 2023 [3]. Furthermore, Indonesian language education is designed to foster students' appreciation of literary works such as poetry, short stories, and drama [2].

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Poetry, in particular, holds a significant position in the elementary curriculum as it nurtures linguistic proficiency, critical thinking, creativity, and socio-cultural awareness [4], [5]. Understanding poetry involves not only decoding words but also engaging with its aesthetic, moral, and cultural dimensions, making it an important avenue for character building and creative expression [6]. However, observations and interviews conducted at Elementary School Kalibanteng Kidul 01 Semarang reveal that Grade IV students often exhibit low critical engagement toward poetry lessons, preferring other subjects perceived as easier and more enjoyable. This lack of enthusiasm is compounded by the continued use of traditional, lecture-based instructional methods and limited learning media primarily textbooks and worksheets—that fail to stimulate interest or foster deep comprehension. As a result, student achievement in poetry comprehension remains low, with only 25% of the 28 students in Grade IV meeting the school's KKTP score of 70, leaving 75% below the expected competency level.

To address these challenges, it is crucial to implement innovative and engaging learning models. The SAVI (Somatic, Auditory, Visual, Intellectual) learning model offers a promising alternative, as it maximizes multiple learning modalities by integrating physical activity, auditory processing, visual representation, and intellectual engagement [13], [14]. When combined with technology-based instructional media, such as Smart Apps Creator (SAC), this approach can create more interactive, student-centered learning experiences [15]–[18]. SAC-based media allows for the development of digital learning applications tailored to student needs, providing accessible, interactive, and visually appealing resources. Previous research has demonstrated the effectiveness of SAC in improving critical thinking skills [19] and enhancing learning outcomes [20]. However, these studies have not specifically addressed poetry comprehension in elementary education, nor have they integrated the SAVI learning model or incorporated local cultural elements into the media design.

While prior studies have shown that Smart Apps Creator-based learning media can improve critical thinking skills and learning outcomes, there is limited research on its application to poetry comprehension in elementary schools, particularly when combined with the SAVI model and enriched with local wisdom. Moreover, existing studies have not explored the integration of culturally relevant content—such as the Warak Ngendhog icon of Semarang City—into digital learning tools, nor evaluated its impact on students' motivation, critical thinking, and literary understanding. This gap highlights the need for an innovative, culturally embedded, and multimodal learning solution to enhance poetry learning in primary education.

In response, this study aims to (1) develop Smart Apps Creator-based Warak Ngendhog learning media that integrates the SAVI model to improve Grade IV students' critical thinking and poetry comprehension, (2) test the feasibility of the developed media, and (3) evaluate its effectiveness in fostering both cognitive and affective learning outcomes in poetry at Elementary School Kalibanteng Kidul 01 Semarang.

2. RESEARCH METHOD

This study employs a Research and Development (R&D) design, adopting the Borg and Gall model as modified by Sugiyono. The R&D approach is aimed at producing and validating educational products through systematic stages of research, design, testing, and revision [21]. The product developed in this study is the *Smart Apps Creator* learning media, intended to enhance fourth-grade students' critical thinking and comprehension of the *Warak Ngendhog* poem at Elementary School Kalibanteng Kidul 01 Semarang.

The Borg and Gall model originally consists of ten stages: (1) identifying potential and problems, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) product trial, (7) product revision, (8) usage trial, (9) product refinement, and (10) mass production. Due to limitations in time and resources, this study was conducted only up to stage eight, focusing on assessing the feasibility and effectiveness of the product rather than proceeding to large-scale production [21]. The stages carried out include: (1) Identification of potential and problems. The researcher carried out pre-research activities by conducting observations, interviews, and documentation containing the learning outcomes of class IV students of Elementary School Kalibanteng Kidul 01 Semarang on the material on understanding poetry. This pre-research activity aims to find problems in class IV of Elementary School Kalibanteng Kidul 01 Semarang. The data obtained shows that teachers still use traditional learning methods that result in students showing decreased enthusiasm in engaging with the learning process and low student ability in understanding the contents of the poem. (2) Data collection. Researchers look for the causes of the problem. Researchers must collect various information to develop products that are expected to solve the problem. Researchers in collecting data using methods such as interviews, observations, documentation, questionnaires to analyze the requirements of educators and learners for the developed products, and review pertinent prior research findings. (3) Product design. Data obtained from the needs questionnaire are processed and designed to produce a product prototype that will be developed by researchers. The product developed in this study is the Smart Apps Creator Warak Ngendhog learning media by applying the SAVI learning model. Researchers design the Smart Apps Creator product design to understand the contents of the Warak Ngendhog poem based on the requirements of educators and learners, namely interactive media with illustrations, animations, practice questions, and audio with the theme of the Semarang song. (4) Design validation. At this stage, material experts and media experts test the

feasibility of the Smart Apps Creator media. Each expert conducts an evaluation or validation using an instrument to assess the feasibility of the Smart Apps Creator media design. Both experts suggest improvements to the media that has been assessed, so that researchers can make further improvements. (5) Design revision. Researchers make improvements or revisions to the design based on recommendations from material and media experts. The improved product will be re-consulted with material and media experts until it is determined that the media meets the eligibility criteria for testing. (6) Product trial. The product trial of this research shows the use of Smart Apps Creator media in a small-scale trial. Researchers apply the purposive sampling method. Researchers select heterogeneous samples of six students referring to class rankings: two students with the highest rankings, two students with middle rankings, and two students with the lowest rankings. Researchers distribute questionnaires to teachers and students to collect teacher and student responses regarding Smart Apps Creator. The results of the initial trial analysis are used as a guideline in starting improvements to the initial product. (7) Product revision. Researchers obtain information about aspects that need to be improved and deficiencies in the product based on teacher and student response questionnaires. These suggestions are used to enhance the product that has been created to make it more efficient in its use. The improved product is then tested for effectiveness in a product usage test. (8) Usage trial. The improved product was then tested at the trial usage stage involving fourth grade students of Elementary School Kalibanteng Kidul 01 Semarang (28 students) using saturated sampling techniques. The research design used pre-experimental with a one group pretest-posttest model to compare learning outcomes before (without media) and after (using media) treatment, but without an adequate control group.

The research was conducted at Elementary School Kalibanteng Kidul 01 Semarang in the even semester of the 2024/2025 academic year. The subjects in this study were grouped into two categories, namely small-scale trials and large-scale trials. The subjects of the small-scale study consisted of 6 fourth-grade students of Elementary School Kalibanteng Kidul 01 Semarang who were selected using a purposive sampling technique. The researcher selected a heterogeneous sample of six students referring to class ranking: two students with the highest ranking, two students with the middle ranking, and two students with the lowest ranking. Sampling through the purposive sampling technique aims to ensure that this product trial can be accessed by all students, both those in the upper and lower ranks. The subjects of the large-scale study consisted of 28 fourth-grade students of Elementary School Kalibanteng Kidul 01 Semarang.

Data were collected through observation, interviews, questionnaires, documentation, and tests. The researcher conducted structured observation. The researcher conducted observations before the study to determine the condition of the class, facilities and infrastructure, and learning media in class IV Elementary School Kalibanteng Kidul 01 Semarang. The instrument used was an observation sheet. The researcher recorded student behavior during learning, interactions between teachers and students, and the use of existing learning media (before product implementation). The interviews conducted were structured interviews, where the researcher had a supply of information to provide to respondents. The researcher collected data through interviews with teachers as sources. The instrument used was an interview guideline. Interviews with teachers aimed to dig up in-depth information about the poetry teaching methods that have been used so far, students' difficulties in understanding poetry, and expectations for new learning media. The questionnaire instruments used were a needs analysis questionnaire, an expert validation survey, a teacher feedback survey, and a student feedback survey utilize a 4-point Likert scale. The Likert scale responses are as follows: SS (Strongly Agree, with a value of 4), S (Agree, with a value of 3), TS (Disagree, with a value of 2), and STS (Strongly Disagree, with a value of 1). The questionnaire used is a closed questionnaire with the answer choices that have been provided. The questionnaire related to media needs is intended for teachers and students, which contains information about Indonesian language learning activities in schools. The needs analysis questionnaire involved teachers and students of grade IV Elementary School Kalibanteng Kidul 01 Semarang. The findings from this needs analysis will be used as the basis for designing the Smart Apps Creator media. The validation questionnaire was filled out by validators consisting of material experts and media experts, while the response questionnaire was filled out by teachers and students of grade IV Elementary School Kalibanteng Kidul 01 Semarang which aims to determine the responses of teachers and students after implementing learning using the Smart Apps Creator media. The documentation obtained in this study is a list of names, number of students, student grades, and the application of teaching modules. The test instruments used were pretest and posttest questions that were specifically designed to assess students' comprehension of the contents of the poem. The pretest was given before students used the Smart Apps Creator warak ngendhog media, and the posttest was given after the use of the media. Comparison of pretest and posttest results was used to measure the effectiveness of the media in improving students' understanding. The test questions covered various aspects of poetry understanding, such as identifying themes, implied meanings, messages, and other intrinsic elements as well as concluding and summarizing the contents of the poem.

A good question instrument is a valid and reliable question. This study uses the point biserial correlation formula to evaluate the validity of the instrument. If the r_{pb} exceeds the r table value, then the question is considered valid and if it is less than the r table, it is considered invalid. The r table used is the r table at a 5%

significance level, which is 0.3961. Based on the outcomes of the validity test, there are 7 questions that are categorized as invalid. The validity test values of the invalid questions are 0.2571; 0.1772; 0.2919; 0.2273; 0.3509; 0.3755; 0.3623. An instrument is said to be reliable if it is able to produce consistent data every time it is used to measure the same object. This research assessed the reliability of the instrument using the KR-20 formula. Gregory (2000) stated that a good test is if the reliability coefficient is more than 0.70 [22]. Based on the results of the reliability test, the overall instrument reliability score was 1.202 which is included in the very high category.

Data analysis techniques include media feasibility analysis, teacher and student response analysis, normality test, t-test, and N-Gain test. The media validation was conducted by two specialists, namely a media expert and a content expert. The assessment by the media expert is based on three aspects of assessment, namely the suitability of the media to learning objectives, language, and utilization. The assessment by the material expert is based on three aspects of assessment, namely the suitability of the content, the suitability of the presentation, and the suitability of the language. The analysis of media feasibility and the analysis of teacher and student responses were analyzed using a descriptive percentage test. The normality test is conducted to assess the distribution of learning outcome data (whether normal or not), which will affect the selection of statistical analysis techniques (parametric if normal). The normality test is performed using the Shapiro-Wilk method which is calculated using SPSS version 23. The normality test uses the Shapiro-Wilk formula if the amount of data is less than 50. This study applies a paired t-test assisted by the SPSS version 23 application to draw conclusions. The hypothesis tested is H_0 , which is no significant difference in learning outcomes using Smart Apps Creator media, while H_a indicates a significant difference in learning outcomes when using Smart Apps Creator media. The N-Gain test is used to evaluate the average improvement in learning outcomes before (pretest) and after (posttest) the use of Smart Apps Creator media.

3. RESULTS AND DISCUSSION

Based on the research on the development of the Media Smart Apps Creator Warak Ngendhog with the SAVI learning model to improve critical thinking and understanding of the contents of poetry, the following research results and discussions were obtained.

3.1. The Results of the Development of the Smart Apps Creator Warak Ngendhog Media with the SAVI Learning Model

The development of Smart Apps Creator media began with analyzing the potential and problems through pre-research activities by conducting observations and interviews. The findings from observations and interviews with fourth-grade teachers at Elementary School Kalibanteng Kidul 01 Semarang, found that poetry learning in grade IV of Elementary School Kalibanteng Kidul 01 faced several challenges, namely low interest and critical attitudes of students, less interesting learning methods, difficulties in understanding the contents of poetry, and limited interactive learning media. The solution to overcome the existing problems, researchers developed the Smart Apps Creator warak ngendhog media in improving critical thinking skills and understanding of the contents of poetry. This media is designed to contain various learning resources that arouse interest, so that it has the potential to enhance enthusiasm, critical attitudes, and student activity in learning activities. The development of this media is tailored to meet the needs of both teachers and students.

The researcher conducted an assessment of the needs of teachers and students for the media developed to solve existing problems. The results of the questionnaire analysis of the needs of grade IV teachers of Elementary School Kalibanteng Kidul 01, namely the teachers agreed that the Smart Apps Creator warak ngendhog media was used in learning to improve critical thinking skills and understanding of the contents of poetry with a percentage score of 93% based on 3 aspects, namely students' initial understanding (22.82%), the need for learning media (31.52%), and audiovisual communication aspects (39.13%).

Based on the results of the teacher needs questionnaire for Smart Apps Creator media to understand the contents of the warak ngendhog poem, it is known that students still have difficulty in understanding poetry material in the Indonesian Language subject. So far, teachers have relied on textbooks and worksheets in learning. Teachers expect learning media that can support the delivery of poetry material. Given the limitations of learning media in schools, it is necessary to develop Smart Apps Creator media Smart Apps Creator to understand the contents of the warak ngendhog poem which is equipped with attractive pictures and coloring to help students comprehend the content better. Moreover, the teacher suggested that the Smart Apps Creator media to understand the contents of the warak ngendhog poem can be expanded and applied further in the learning process, with animations that are adjusted to interesting backgrounds, thus creating a more interactive and enjoyable learning atmosphere.

In addition to teachers, students were also given a questionnaire on the needs of the Smart Apps Creator media to understand the contents of the Warak Ngendhog poem. The results of the student needs questionnaire were that students were interested and agreed that the Smart Apps Creator Warak Ngendhog media was used in

learning activities to improve critical thinking skills and understanding of the contents of poetry with a percentage score of 82.32% based on 3 aspects, namely students' initial understanding (15.64%), the need for learning media (30.60%), and audiovisual communication aspects (36.08%). Students had difficulty understanding poetry material in learning Indonesian. The limitations of learning media are one of the causes of students' low critical attitudes in studying the material. The majority of students agreed that the material for understanding the contents of poetry should be presented through media that can be accessed using electronic devices, such as cellphones. Students also supported the use of Smart Apps Creator media to understand the contents of the Warak Ngendhog poem with an attractive design. This learning media should be designed with bright colors and equipped with relevant images. In addition, most students agreed that delivering material for understanding the contents of poetry through the Smart Apps Creator media to understand the contents of the Warak Ngendhog poem would be more effective.

Based on the assessment of the needs of teachers and students, researchers developed Smart Apps Creator learning media to understand the contents of the Warak Ngendhog poem. This media is designed in the form of an application that contains Indonesian language material on understanding the contents of poetry for grade IV students of Elementary School Kalibanteng Kidul 01 Semarang. This application integrates text, images, and the "Let's Practice" feature to support student understanding. The development of this media is aligned with the needs of both teachers and students, with a landscape-based display. The components in the application include cover, main menu, foreword, table of contents, instructions for use, learning achievements and objectives, learning materials, practice questions, glossary, and bibliography.

Media Smart Apps Creator understands the content of the warak ngendhog poem developed as a learning resource that helps teachers create more interesting and interactive learning, so that it can improve students' understanding of the content of the poem. This is in line with the theory put forward by Prastowo, which states that the use of learning media can help teachers make the learning process more effective and interactive [23]. In line with Prastowo's opinion, interesting, effective, and efficient learning requires innovative learning media so that the learning process is more optimal.

The researcher developed the design into a Smart Apps Creator media to understand the contents of the warak ngendhog poem. The development process was carried out using the Canva application. The following is a picture showing the stages of designing the Smart Apps Creator media to understand the contents of the warak ngendhog poem through the Canva application.

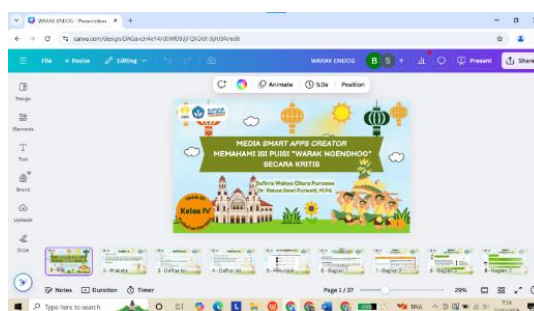


Figure 1. Design of smart apps creator media to understand the contents of the warak ngendhog poem on Canva

After the Smart Apps Creator media to understand the contents of the warak ngendhog poem was developed, the researcher exported the design into the Smart Apps Creator application. In the application, the researcher added elements such as arrow buttons and menu buttons to improve navigation in the learning media. The following is a picture showing the stages of designing the Smart Apps Creator media to understand the contents of the warak ngendhog poem through the smart apps creator application.

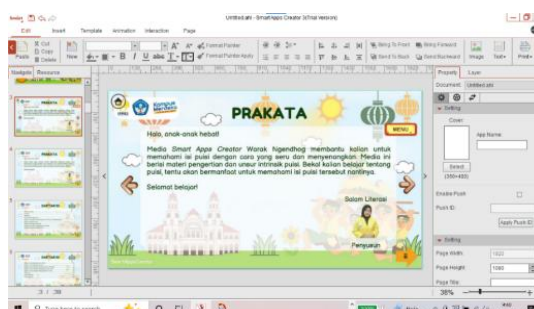


Figure 2. Development of smart apps creator media to understand the contents of the warak ngendhog poem in the smart apps creator application

In the smart apps creator application, researchers also added interactive animations to certain buttons so that if students press the button, they can be directed to the page they want. Researchers then exported the media design so that it becomes a learning application that can be downloaded and accessed by students easily. The material in the application focuses on learning Indonesian, especially understanding the contents of poetry, which includes the definition of poetry, intrinsic elements, how to summarize, and analyze poetry. The arrangement of the material is adjusted to learning achievements, especially in the elements of reading and viewing. The application design is themed warak ngendhog with attractive colors to increase learning motivation. Equipped with backsound so that users do not get bored easily, this application consists of a main page, main menu, foreword, table of contents, instructions for use, learning achievements and objectives, materials, practice questions (let's practice), glossary, bibliography, and author profile. Instructions for use are available on a special page that explains the function of each button. Practice questions in "Let's Practice" help students measure their understanding of the material.

3.2. Results of the Smart Apps Creator Warak Ngendhog Media Feasibility Test with the SAVI Learning Model

Researchers validated the Smart Apps Creator media feasibility assessment. Media validation is the process of assessing a product design to determine whether a new product is more effective than the previous one. This process is carried out by involving experts or experienced experts who are tasked with assessing the quality of the product that has been developed [21]. Through media validation, the strengths and weaknesses of the product can be identified. After knowing the aspects that need to be improved, revision steps can be taken to optimize the quality of the product [21]. The assessment of the feasibility of the Smart Apps Creator media to understand the contents of the Warak Ngendhog poem was conducted by two specialists, including a media expert and a content expert. Based on the assessment of the feasibility of the Smart Apps Creator media obtained from media experts and material experts who stated that the media was included in the category of very feasible for use in learning Indonesian. The evaluation conducted by media experts to assess the feasibility of the Smart Apps Creator media resulted in a total score of 62 out of a maximum of 64 with the percentage results of the overall Smart Apps Creator media assessment being 96% including the very feasible category based on aspects of media suitability with learning objectives (31 scores), language (8 scores), and utilization (23 scores). These indicators are in line with Arsyad's theory [24] which states that learning media needs to be adjusted to learning objectives, material content, students' language abilities, and consider the efficiency, effectiveness, and results to be achieved in the learning process. Smart Apps Creator media has been prepared by considering learning objectives, language abilities of grade IV elementary school students, and learning materials.

The evaluation results by content experts for the Smart Apps Creator media yielded a score of 105 out of a maximum of 116, with an overall assessment percentage for the Smart Apps Creator media of 90% with a very feasible category based on three aspects, namely the aspect of content feasibility (44 scores), presentation feasibility (30 scores), and language feasibility (31 scores). This assessment indicator is in line with Kristanto's theory (2016: 90–92) which states that the content needs to be aligned with the characteristics of students, especially their level of thinking, so that it is easier to understand. This adjustment reflects the feasibility of content that is relevant to learning needs, the feasibility of presentation that considers the appropriate delivery method, and the feasibility of language that is adjusted to students' language abilities.

Based on the evaluation by media experts on the feasibility of Smart Apps Creator media, there are several inputs provided for improving the Smart Apps Creator media to understand the contents of the Warak Ngendhog poem, specifically the class identity must be clearly visible and accompanied by a statement that the media is for elementary schools with the Merdeka Curriculum, the Warak Ngendhog image on the media cover must be visible, consistent use of capital letters in writing the title in each part of the media content, and correction of sentences in the foreword. Input from material experts, namely paying attention to the font size. The outcomes of revisions based on feedback from media and content experts are as follows.



Figure 3. Media cover repair



Figure 4. Correction of title writing in the media content section



Figure 5. Correction of sentences in the foreword section

Research related to this study includes the work conducted by Mustadi & Irvan (2021) entitled "Local WisdomBased Story Calendar: Improving Student's Narrative Writing Skills in Elementary School". The results of the study prove that the local wisdom-based story calendar media is very feasible to use. The evaluation by content experts resulted in a score of 96 out of a maximum of 100, with a percentage of 96%, categorizing it as very feasible. Similarly, the assessment by media experts also yielded a score of 96 out of 100, with a 96% percentage, placing it in the very feasible category [25]. Another study used to support this study is a study conducted by Saripudin et al., (2021) suggest that value-based digital storytelling learning media is highly suitable for use. The expert evaluation resulted in a percentage of 84.62%, placing it in the very feasible category [26].

3.3. Results of the Effectiveness Test of the Smart Apps Creator Warak Ngendhog Media with the SAVI Learning Model

A small-scale product trial was carried out to evaluate the effectiveness of the Smart Apps Creator media in understanding the contents of the warak ngendhog poem before being used in the trial usage. Clearly structured steps will help teachers in implementing the learning model. The following are the steps of the SAVI learning model: 1) Preparation stage, which focuses on preparing students for the learning process, 2) Delivery stage, which aims to help students find the material to be learned, 3) Training stage, which encourages students to integrate and combine knowledge through various methods, and 4) The stage of displaying results, which supports students in applying and developing the knowledge they have acquired.

The increase in students' understanding of the contents of poetry was obtained from the results of the pretest and posttest of learning activities conducted before and after the implementation of the Smart Apps Creator media to understand the contents of the warak ngendhog poem. The KKTP for Indonesian language learning content in class IV of Elementary School Kalibanteng Kidul 01 Semarang is 70. The results of the pretest and posttest scores can be seen in Figure 6 below.

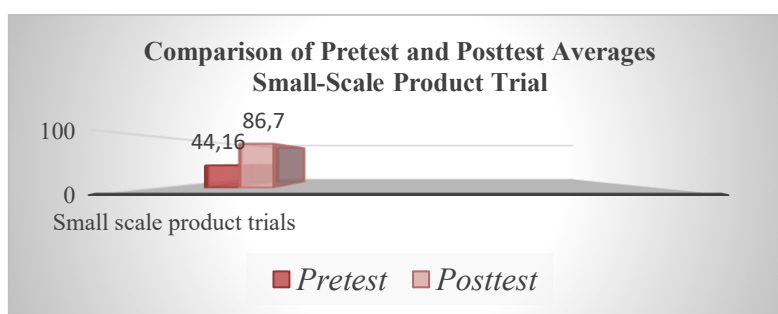


Figure 6. Results of the pretest and posttest scores for understanding the contents of poetry in small-scale product trials.

Based on Figure 6, the average value before (pretest) using the smart apps creator media to understand the contents of the warak ngendhog poem is 44.16, while the average after (posttest) using the smart apps creator media to understand the contents of the warak ngendhog poem is 86.70. This indicates that there is an increase. The difference in the average pretest and posttest values is 42.54. After conducting a product trial, the researcher distributed a questionnaire or response questionnaire to teachers and sample students of class IV C Elementary School Kalibanteng Kidul 01 Semarang to assess the feasibility of utilizing the Smart Apps Creator media product to understand the contents of the warak ngendhog poem. The teacher response questionnaire in the product trial received a score of 64 out of a maximum of 64, with a percentage of 100%, categorized as very feasible based on three aspects, namely technical quality and presentation of material (56.25%), presentation of material content (25%), and linguistic aspects and readability of the material (18.75%). Improvements to the media include adding backsound with a Semarangan theme. The results of the student response questionnaire during the product trial achieved a total score of 357 out of a maximum of 384, with a percentage of 92.96%, classified as very appropriate based on three aspects, namely technical quality and presentation of material (203 scores), presentation of material content (91 scores), and linguistic aspects and readability of the material (64 scores).

The revised product results can be used in large-scale usage trials. The usage trial was conducted in class IV B Elementary School Kalibanteng Kidul 01 Semarang. The usage trial was carried out with 28 students. This trial aimed to evaluate the effectiveness of the Smart Apps Creator media. It employed a one-group pretest-posttest design, where the researcher compared student learning outcomes before (pretest) and after (posttest) the use of the Smart Apps Creator media to determine the effectiveness of the media. The increase in learning outcomes of students' understanding of the contents of poetry was obtained from the results of the pretest and posttest of learning activities using Smart Apps Creator media to assess students' understanding of the contents of the *Warak Ngendhog* poetry. The KKTP of Indonesian language learning content in class IV Elementary School Kalibanteng Kidul 01 Semarang was 70. The results of the pretest and posttest of students in the large-scale usage trial are presented in Figure 7 as follows.

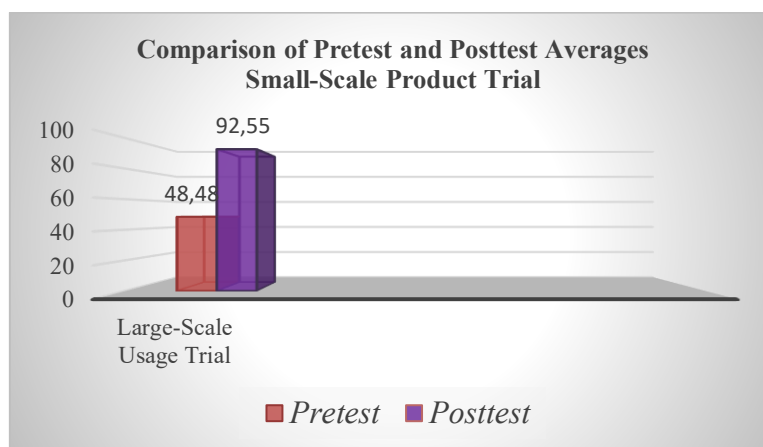


Figure 7. Results of the pretest and posttest scores for understanding the contents of poetry in the large-scale trial.

Based on the data presented in Figure 7, it is known that before using the Smart Apps Creator media to understand the contents of the Warak Ngendhog poem, the average pretest score obtained by students was 48.48. There were only 5 students who scored above the KKTP. This shows the level of students' understanding of the contents of the poem before being given treatment through the application of the learning media. While the average posttest score for understanding the contents of the poem after using the Smart Apps Creator media to understand the contents of the Warak Ngendhog poem reached 92.55.

Pretest and posttest data were analyzed using a normality test to determine whether the data were normally distributed. This test was conducted using the Shapiro-Wilk method using the SPSS version 23 application. In accordance with Setyawan's theory, the Shapiro-Wilk test is appropriate if the data set consists of fewer than 50 observations. The results of the analysis showed that the pretest significance value was 0.540 and the posttest was 0.055. Both significance values are greater than 0.050, so the data is normally distributed. This is in accordance with Setyawan's theory which states that data is categorized as normal if its significance value exceeds 0.050. Thus, the t-test can be performed using parametric statistical techniques [27]. The results you can see in Table 1.

Table 1. The effectiveness of Smart Apps Creator media in learning Indonesian and N-Gain

	Results	Conclusion
T-Test	0.000 (Sig.2-tailed)	Significant
N-Gain	0.8351	High Category

The effectiveness of Smart Apps Creator media in learning Indonesian, especially the material of understanding the contents of poetry, can be seen through a comparison of the average values before (pretest) and after (posttest). Based on the results of the paired t-test analyzed using the SPSS version 23 application, a significance value (2-tailed) of 0.000 was obtained which was less than 0.05, so that H_0 was rejected and H_a was accepted. This finding is in line with the theory of Nuryadi et.al which states that a significance value below 0.05 indicates that the t-count is significant, while a value above 0.05 indicates insignificance [28]. Thus, there is a significant difference in learning outcomes between before and after using Smart Apps Creator media.

The N-Gain test was conducted to analyze the average increase in learning outcomes before (pretest) and after (posttest) the application of Smart Apps Creator media. The results showed an increase of 0.8351 with an average difference of 44.07, which is categorized as high. This finding is in line with Supriadi's theory, which states that an N-Gain value above 0.7 is categorized as high, between 0.3 and 0.7 is categorized as moderate, and below 0.3 is categorized as low [29]. This increase shows that the use of Smart Apps Creator media is effective in learning Indonesian, especially in the material of understanding the contents of poetry.

Relevant research is research conducted by Mustadi & Irvan (2021), the local wisdom-based story calendar media is effective in enhancing narrative writing skills, as indicated by the t-test results with a significance level of <0.05 , specifically 0.000. The story calendar media contains images based on local wisdom so that students find it easier to write narrative texts [25]. Another study relevant to this study is conducted by Sumarmi et al., (2021) the t-test value of Sig.2-tailed 0.000 <0.050 then H_0 was rejected which means a statistically meaningful disparity exists between the scores of the control group and the experimental group [30]. Research conducted by Bulkani et al., (2022) the t-test calculation of the Sig.2-tailed value were 0.000 <0.050 , this indicates that a statistically significant difference exists between students' Mathematics learning outcomes, specifically between the pretest (before using animation learning media) and the posttest results (after using animation learning media), and the alternative hypothesis (H_a) is accepted while H_0 is rejected [7].

This study introduces the development of the *Smart Apps Creator Warak Ngendhog* media integrated with the SAVI (Somatic, Auditory, Visual, Intellectual) learning model to improve fourth-grade students' critical thinking and comprehension of poetry. Unlike previous research, this media incorporates local wisdom the Warak Ngendhog cultural icon of Semarang into interactive, technology-based learning content. It combines HOTS-based evaluation questions, attractive visual design, and culturally contextualized poetry to foster engagement and deeper understanding. The integration of a locally themed digital application with the SAVI model for poetry comprehension in elementary school is a new contribution that has not been addressed in prior studies [31]-[37]. The findings indicate that technology-enriched, culturally relevant, and multimodal learning media can significantly improve students' motivation, critical thinking, and comprehension in language and literature subjects [38]-[44]. The *Smart Apps Creator Warak Ngendhog* not only enhances learning outcomes but also supports the preservation of local culture through educational integration. This approach can serve as a pedagogical model for developing instructional media that bridges modern technology with cultural heritage, aligning with the Merdeka Curriculum's emphasis on contextual learning. Moreover, it highlights the importance of applying learning models such as SAVI to engage multiple learning modalities, which can be adapted for other subjects and contexts.

This research was limited to one school Elementary School Kalibanteng Kidul 01 Semarang and involved a relatively small sample size of 28 students in large-scale trials. The study also employed a pre-experimental design without a control group, which limits the ability to attribute improvements solely to the intervention. Additionally, the media's evaluation focused on short-term comprehension gains, without long-term follow-up to measure retention or sustained critical thinking skills. Technical constraints, such as students' varying access to digital devices at home, may also influence the generalizability and scalability of the results. Future research should replicate this study in multiple schools with larger and more diverse student populations, employing experimental designs with control groups to strengthen causal claims. Longitudinal studies are recommended to evaluate the lasting impact of the *Smart Apps Creator Warak Ngendhog* media on poetry comprehension and critical thinking. The application could be further developed to include adaptive learning features, additional local wisdom themes from other regions, and cross-curricular content integration [45]-[51]. Training programs for teachers on effectively integrating SAVI-based digital media into classroom instruction are also crucial to maximize its benefits.

4. CONCLUSION

The development and implementation of the Smart Apps Creator Warak Ngendhog media using the SAVI learning model has been shown to be highly feasible and effective in enhancing fourth-grade students' critical thinking skills and understanding of poetry. Expert validation from both media and content specialists placed the product in the "very feasible" category, and pretest–posttest results revealed a significant improvement in students' comprehension scores. By integrating interactive digital features, culturally relevant content, and multimodal learning principles, the media not only meets pedagogical objectives but also contributes to the preservation and promotion of local cultural heritage. The implications of this study extend beyond the immediate classroom context, suggesting that technology-based learning media grounded in local wisdom can foster deeper engagement, contextual understanding, and a stronger cultural connection among students, thereby supporting both educational quality and cultural sustainability. Although the research was limited in scope to a specific grade level and context, the findings offer valuable insights for educators, policymakers, and curriculum developers seeking to design innovative, culturally responsive learning tools that can be adapted to various subjects and regions.

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