

Analysis of Elementary School Students' Literacy Ability of Javanese Script Through the Use of Script Card Reviewed Based on Critical Thinking Skills

Matsuri¹, Idam Ragil Widiyanto Atmojo², Chumdari³, Fadhil Purnama Adi⁴, Roy Ardiansyah⁵, Dwi Yuniasih Saputri⁶, Annisa Rahma Pradesiwi⁷

¹ Universitas Sebelas Maret, Surakarta, Indonesia; matsuri@staff.uns.ac.id.

² Universitas Sebelas Maret, Surakarta, Indonesia; idamragil@fkip.uns.ac.id

³ Universitas Sebelas Maret, Surakarta, Indonesia; chumdari@staff.uns.ac.id

⁴ Universitas Sebelas Maret, Surakarta, Indonesia; fadhil@staff.uns.ac.id

⁵ Universitas Sebelas Maret, Surakarta, Indonesia; royardiansyah@staff.uns.ac.id

⁶ Universitas Sebelas Maret, Surakarta, Indonesia; dwiyuniasihsaputri@staff.uns.ac.id

⁷ Universitas Sebelas Maret, Surakarta, Indonesia; annisarahma539@student.uns.ac.id

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ABSTRACT

Students should learn and understand Javanese script because it is a local wisdom culture that must be preserved through regional languages like Javanese script to prevent the nation's language culture from becoming extinct. The aims of this study were (1) to analyze the increase in Javanese script literacy skills and (2) to describe the increase in Javanese script literacy in terms of critical thinking skills. This is mixed methods research with a sequential explanatory strategy. The research sample consisted of fifth-grade students from Tegalsari Public Elementary School and Mangkuyudan Public Elementary School. Data gathering was conducted through the utilisation of tests, interviews, and documentation. From the findings and deliberation, the researchers are able to deduce the subsequent conclusions: (1) The proficiency in Javanese script among fifth-grade students in elementary schools improves following the implementation of script media by teachers. (2) Proficiency in critical thinking is closely correlated with the ability to read and write in Javanese script. Critical thinking skills account for 39.3% of the variation in students' literacy skills in Javanese script, leaving 60.7% to other factors. Advanced Javanese script literacy students are critical thinkers. Moderate Javanese script literacy indicates good or medium critical thinking. Students with inadequate Javanese script skills have moderate or poor critical thinking. The authors of this study recommend that primary school instructors use script cards to improve students' Javanese script and critical thinking skills.

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Corresponding Author:

Matsuri

Universitas Sebelas Maret, Surakarta, Indonesia; matsuri@staff.uns.ac.id

1. INTRODUCTION

Javanese script is very important for students to learn and understand because it is cultural local wisdom that must be preserved to protect the nation's language culture and prevent it from extinction through the use of regional languages such as the use of Javanese script as a means to carry out verbal and written communication and as a cultural expression. Writing is an important factor for students to be able to record events that happened in the past. In addition to proper interpretation, writing is also vital so that important events and information in history and science can be preserved at any time (Wahyudianto et al., 2016). Teaching and learning activities in terms of developing writing skills should get better attention from teachers and instructors because it is one of the language learning processes that is quite complex (Rinawati et al., 2020). Furthermore, writing is a communication tool that is done indirectly as outlined in written language. Additionally, writing is the process of reducing or repainting symbols, graphics, and things that can describe language to be understood by others so that the recipient of the information can interpret the language well (Putra et al., 2019). Therefore, writing can be used as an indicator that describes student understanding.

Writing Javanese script becomes one of the materials in which students are less interested. As many as 68% of the students think that they find it difficult to read and write Javanese script because they are not familiar with and are not accustomed to Javanese script letters (Utari, 2012). Another factor that causes students to be uninterested in the Javanese script is the conventional technique of learning at schools. It means, teachers carry out teaching and learning activities using only the lecture method and rarely use proper learning media. As a result, students have low Javanese script writing skills, which is the effect of students' less involvement in learning activities. Moreover, teachers who teach written Javanese tend to prioritize the results, but not the writing process (Rahim, 2022). One way to preserve Javanese script as one of the assets of Javanese culture is by training students in the language and instilling some understanding of it. Thus, improving Javanese script writing skills for students is very important so that their understanding of one of the Javanese cultures becomes optimal.

Students' low understanding of Javanese scripts causes students' low Javanese script writing skills. Writing Javanese script is one of the materials that students are less interested in. As much as 68% of students think that they find it difficult to read and write Javanese script, the reason is that they are not familiar and are not familiar with Javanese script letters (Utari, 2012). Another factor that causes students not to be interested in the Javanese script is learning in schools that are still very conventional. Teachers only carry out teaching and learning activities using the lecture method and very rarely use appropriate learning media, so the main impact of the lack of student involvement and interest in the Javanese script is the low writing skills of the Javanese script owned by students. Understanding and skills in writing Javanese script need to be instilled and trained from an early age so that one of the assets of Javanese culture can be preserved and not lost with time. Improving Javanese script writing skills for students is very important so that their understanding of one of the Javanese cultures becomes optimal.

In addition, from the results of observations, when teaching and learning activities were in progress, teachers were reluctant to use learning media as a means of delivering materials so students are not enthusiastic to be involved in the learning activity. Besides, the learning materials were delivered verbally and there was no two-way interaction between the teacher and students. Accordingly, students did not focus on their learning activities. In addition, the lack of time provided to learn Javanese at the school contributed to another new problem in students' understanding of Javanese scripts. Thus, teachers need a new approach or strategy to help students learn Javanese scripts in a fun and easy way.

Education has the goal of developing students' higher-order thinking skills as a provision to face challenges in everyday life through learning activities that encourage the use of higher-order thinking skills such as critical thinking, reasoning, reflection, and science process skills (Saido et al., 2015). Higher-order thinking makes students able to interpret, analyze and provide alternative solutions to problems. Accordingly, one of the higher-order thinking skills is critical thinking. It is a key competence that must be possessed to solve problems for individuals to live successfully and responsibly. Furthermore, in

society, it is useful to face present and future challenges. Scriven dan Paul (2013), explained that it is important to develop critical thinking because it can improve the quality of thinking for an individual to be skillful at analyzing, assessing, and reconstructing certain things to solve problems.

There are several ways to improve students' writing skills. One of them is by selecting and applying accurate learning media. One of the factors that can affect the improvement of student learning outcomes is the learning media used by teachers when carrying out the learning process in class (Elhefni, et. al, 2023). On the other hand, implementing learning media can increase the effectiveness of the learning process. Besides, it can make teaching and learning activities more interesting so that the learning objectives can be achieved optimally because they become clearer (Tafonao, 2018). Moreover, the use of creative and innovative learning media can make students more enthusiastic and interested so students can understand teaching materials more easily. Besides, learning media can also be used to evoke students' thoughts, feelings, attention, and abilities or skills that can encourage the formation of the learning process (Nurrita, 2018). Students prefer learning media that are interesting and fun (Wahyuni, et. al., 2023). Additionally, learning media such as audio, visual, and audio-visual can be used as an intermediary to train students to think more critically so that they can achieve the basic competence set by the government (Karo-Karo & Rohani, 2018).

The variety of learning media that is usually applied in learning activities is visual media, such as the use of letter cards which can be implemented as a tool to help students recognize and memorize letter shapes. Card media is learning media consisting of pieces of paper containing various things such as images, writing, pictures, symbols, and letters. The media can be used to maximize students' understanding related to these symbols (Kustiawan, 2016). Letter card media implemented in teaching and learning activities can increase the stimulation of students' interest to understand symbols and letters more quickly. It can also help students explore certain information during learning activities to find new vocabulary from a series of experiments assembling symbols (Astuti, 2016). Letter cards are media that can be used as aids in the learning process. The letter cards have Javanese script on one side. In one package, this media has 20 letters which are adjusted to the number of letters contained in the Javanese script (Lestari, 2013). In addition, visual media can facilitate students in remembering Javanese script symbols. While, the character card media can encourage students' interest and motivation to learn and is easy to use as well (Putri, 2016). With the use of card media, students can remember the symbols of the Javanese script and become more skilled in writing Javanese script.

This research is important to carry out because writing skills are an important aspect of the learning process. Teaching and learning activities in terms of developing writing skills should receive better attention from teachers and instructors. Because this skill is one of the language learning processes that are quite complex and can be used as an indicator that describes student understanding. However, this research only focuses on a few elementary schools in the city of Surakarta, so the scope is still limited. In addition, researchers also only focused on the ability to write Javanese scripts based on critical thinking indicators.

Based on the aforementioned background, this study aims to analyze the literacy skills of the Javanese script using the script card media in terms of critical thinking skills in the Javanese script materials of elementary schools. It is expected that the implementation of the script card media can have a good impact on students' Javanese script literacy and critical thinking skills through presenting text using Javanese script.

2. METHODS

This research used a mixed method (combination research) design, with a sequential explanatory strategy. The quantitative method was used to analyze the increase in students' literacy skills before and after the treatment in the experimental class (one group pretest-posttest design), to measure literacy in Javanese script materials, and to analyze the relationship between literacy and critical thinking skills. While the qualitative method was used to describe critical thinking skills, as well as describe literacy abilities in terms of students' critical thinking skills.

Data collection techniques used tests, observation sheets, and interviews. The literacy ability instrument used a test. The research instrument was tested using a test based on the indicators of critical thinking skills. The stages in the validity test are as follows:

a. Content Validity Test

The content validity test is the validity test that is done using the calculation of V-Aiken. The V-Aiken test was carried out using expert judgment. The value of the Aiken validity index has a range of values between 0V1 (Budiyono, 2015). Expert judgment is a process of asking for consideration from experts or experienced people. Based on the aspects measured, it can be concluded that an average of 0.994 was obtained so that the test questions were feasible to use.

b. External Validity Test

At this stage, the instrument was tested on a different sample from the research sample used. It aimed to find an instrument that can be generalized to the population. There were two aspects of the test carried out in the external validity test, namely the level of difficulty and discriminating power of the questions. The level of difficulty of the question is a number that shows the number of participants who answered the question correctly from all test takers (Budiyono, 2015). The difficulty index is between 0.00-1.0 with good results in the range of 0.30 (<) P (<) 0.70 (Budiyono, 2015). While the discriminating power of an item is the ability of the item to classify students according to their abilities. The criteria for a good item are if the difference power index is in the range of 0.30 (<) P (<) 0.70.

c. Construct Validity Test

At this stage, the researchers compared the contents of the instrument with the subject matter that had been taught (Sugiyono, 2014). In this study, construct validity used the principles of confirmatory factor analysis (CFA) using the Lisrel software. The following are the results of the analysis using the Lisrel software.

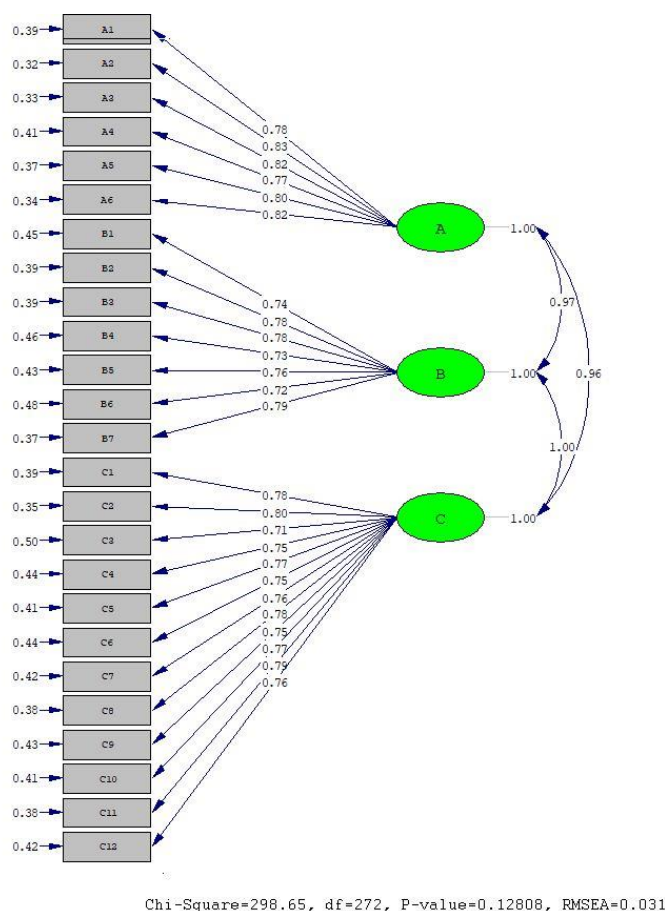


Figure 1. The results of the instrument construct test using the Lisrel application

CFA data can be said to be valid if the results of the chi-square value divided by the df value are not more than 2, the $P\text{-value} > 0.05$, and the RMSEA value < 0.05 . Figure 1 showed that the Chi-square value was 298.65, the df value was 272; the P-value was 0.12808 and the RMSEA value was 0.031.

An instrument is considered reliable if the measurement results remain consistent when it is measured at different times or individuals but under similar conditions. The instrument was tested using Cronbach's Alpha to detect inaccurate indicators. The instrument can be said to be reliable if the reliability coefficient is 0.70 or more (Budiyono, 2015). The calculation results showed that the Cronbach Alpha value of $0.94 > 0.70$, so it can be concluded that the instrument was reliable.

The analysis strategy employed encompassed both quantitative and qualitative analysis methods. The quantitative study comprised a normality test, a homogeneity test, a two-sample paired t-test, a Gain test, and a product-moment correlation analysis examining the relationship between literacy and critical thinking skills. The qualitative data analysis employed an interactive paradigm, consisting of three primary activities: data reduction, data presentation, and conclusion/verification. The data on the outcomes of critical thinking skills, science process skills, and learning motivation was classified into three categories: high, moderate, and low. In order to assess the reliability of qualitative data in this study, the method of triangulation was employed, which involved cross-referencing many sources of data and theoretical frameworks.

3. FINDINGS AND DISCUSSION

3.1. Findings

3.1.1 Javanese Script Literacy Improvement

The final data obtained in this study were data on the fifth-graders at SDN Tegalsari and SDN Mangkuyudan in the form of data on pre-test scores and data on post-test scores concerning Javanese

script literacy skills after the treatment on Javanese script writing materials. Based on the research results, the average pre-test and post-test scores of experimental class students were 57.39 and 74.17. The increase in Javanese script literacy skills in this study was tested by the paired sample t-test and the gain test. Based on the calculation, the sig value obtained (2-tailed) was 0.025. Because the value (2-tailed) is smaller than the commonly used significance level of 0.05 ($0.025 < 0.05$), it can be concluded that there was a significant difference between the data on student learning outcomes from the experimental class and the control class. The results of the calculation showed high criteria of 6 students, moderate criteria of 18 students, and low criteria of 6 students. The increase in students' critical thinking skills was 80.83% consisting of students who obtained moderate and high gain normality values. The average increase in the gain normality value (g) of 30 students was 0.49 with moderate criteria. The detailed results of classifying students based on the achievement of research results on Javanese script literacy skills and critical thinking skills with high, moderate, and low criteria can be seen in Tables 1 and 2 below.

Table 1. Levels of Javanese Script Literacy

Scores	Category	Number of students
$67 \leq x \leq 100$	High	6
$34 \leq x < 67$	Moderate	18
$0 \leq x < 34$	Low	6

Table 2. Levels of Critical Thinking Skills

Scores	Category	Number of students
$67 \leq x \leq 100$	High	10
$34 \leq x < 67$	Moderate	15
$0 \leq x < 34$	Low	5

3.1.2 Correlation Test

The product-moment correlation test (r) was employed to determine the presence of a link between the variables of Javanese script literacy skills and critical thinking skills. The correlation coefficient (r) between Javanese script literacy and the critical thinking skills of the experimental class was 0.777, indicating a good link. The coefficient of determination can be determined by examining the r square value, which in this case is 0.393. Approximately 39.3% of students' proficiency in Javanese script can be attributed to their level of critical thinking skills, while the remaining 60.7% may be influenced by other factors.

3.1.3 Profile of Javanese Literacy Ability from the View of Critical Thinking Skills

Students with advanced literacy skills typically demonstrate elevated levels of critical thinking ability. Students who possess advanced proficiency in Javanese script and strong critical thinking abilities demonstrate the capacity to engage in deep and consistent problem-solving. They are able to effectively utilise their intuitive understanding of concepts to solve problems presented in written texts, and are skilled in writing using the Javanese script.

Students with a reasonable level of literacy in Javanese script demonstrated a corresponding level of critical thinking skills, ranging from moderate to high. Students with a moderate level of proficiency in reading and writing Javanese script, as well as moderate critical thinking skills, were unable to fully develop their higher-level thinking abilities. This was evident from their tendency to ask questions that just expressed conclusions and their inadequate analytical results. The thought process was classified

as part of the domain of preliminary cognition. Students that possess a reasonable level of literacy in Javanese script and a high level of critical thinking have the ability to enhance their cognitive processes, since they operate at an advanced level of thinking. Consequently, people can enhance their intuitive capacity to accurately respond to queries.

Students with limited proficiency in Javanese script literacy shown a correlation with both low and moderate levels of critical thinking abilities. This is shown in the attainment of the seven benchmarks of critical thinking. Each of these demonstrated a moderate level of academic success in kids with moderate levels of critical thinking. Students who demonstrated deficient essential skills of thinking often exhibited a lack of awareness regarding suitable standards of clarity, accuracy, and relevance. Additionally, their thinking was constrained in terms of cognitive stages.

3.2. Discussion

The utilisation of instructional media is crucial for facilitating the learning process in elementary school classrooms. According to Piaget's theory of cognitive development (McLeod, 2018), students between the ages of 7-11, who are in the concrete operational stage, can benefit greatly from the usage of instructional media in the learning process (Juwantara, 2019). At this point, the utilisation of educational media can facilitate pupils as they can employ tangible media that can be physically grasped and directly viewed. This aligns with the findings of a study conducted by Widyastutik and Chumdari (2016), which concluded that the utilisation of script card media has the potential to enhance students' proficiency in writing Javanese scripts. Ausubel (Gagra et. al., 2019) posited that students can attain favourable learning outcomes when the content of their lessons is unambiguously delineated and effectively communicated to them through the use of an Advanced Organiser. This strategy has the potential to have a favourable impact on the pupils' learning ability. An advanced organiser is a comprehensive framework that encompasses all the course materials that students acquire. Gagne (Pettry, et.al., 2018) defines learning as the cognitive process by which the human brain processes information. Within the realm of learning, there exists a mechanism by which information is transmitted and subsequently processed to yield tangible results in the shape of acquired knowledge and skills. The following is a picture of the use of Javanese script media in elementary schools:



Figure 2. The use of Javanese script media in elementary schools

Figure 2 showed that the students were enthusiastic about learning to use Javanese script media because writing activities became more interesting and fun. Furthermore, writing is an important thing because through writing, a person can discover new things, generate new ideas, practice the ability to organize, and clarify the concepts or ideas they have, and practice existing objective attitudes. In addition, writing also helps a person understand, process information and trains the ability to think actively (Dewi, 2013). Writing Javanese script is also material that must be studied in learning Javanese from elementary to high school (Yermiandhoko, 2022).

According to Cahyadi (2019), the function of the media can overcome the limitations created by space and time. Thus, the use of learning media encourages significant utilization of a subject. In addition, learning media also makes the learning process more interesting for students and helps them generate learning motivation. According to Linayanti (2022), the use of King Card media in the learning process also had a positive effect on student learning outcomes. The use of Kartu Raja media in learning

also had a positive impact on students' writing abilities. In addition, it is easier for students to understand the forms of the Javanese script symbols and the writing procedures for the Javanese script diacritics which were introduced through the King Card media. Students also looked more active and motivated during the learning process when using the King Card media.

The use of media can display messages and material more clearly. As a result, students can easily understand the learning materials (Primasari et. al., 2014). The use of appropriate learning media has a useful function and contribution to improving the quality and efficiency of learning in the classroom. Consequently, students' best potential can increase (Smaldino, et. al., 2012) because the implementation of learning media can provide an interesting experience in learning activities. Such a situation can attract students' attention and have an impact on their understanding of the learning materials. The use of learning media in the classroom is a form of learning experience that is based on the theory that supports the use of the media. One of the relevant concepts is Dale's theory (1946), which classifies the experience of learning outcomes based on the level from the most obvious (concrete) to the least understandable (abstract).

4. CONCLUSION

Based on the results of the research and discussion, the researchers can draw the following conclusions: (1) The fifth-graders' literacy skills in Javanese script have increased after teachers implement script media (2) Critical thinking skills have a strong relationship with Javanese script literacy. Students with high Javanese script literacy have a high tendency to think critically. Students with moderate Javanese script literacy have high or medium critical thinking skills. Meanwhile, students with low Javanese script literacy have moderate or low critical thinking skills. Based on the results of this study, the researchers recommend teachers in elementary schools use character cards so that learning can run well. In addition, the character cards positively impact Javanese script literacy and students' critical thinking skills. This research is limited to only examining the Javanese script literacy factor in grade V elementary school, so the research scope is still narrow. In addition, researchers also have limitations in controlling other variables that affect Javanese script literacy. Suggestions for further research are the need to examine various factors simultaneously on critical thinking skills and Javanese script literacy.

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