

# EFFECT OF MULTIMODAL LITERACY ON READING ABILITY OF INDONESIAN JAVANESE LEARNERS

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*Manuscript received 10 January 2024*

*Manuscript accepted 24 November 2024*

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<https://doi.org/10.33736/ils.6472.2024>

## ABSTRACT

Over the past few years, the use of multimodal literacy in education has emerged as an effective educational tool in language instruction worldwide. As a result, language instruction methods have been replaced by conventional instruction with multimodal literacy, which has the potential to enhance learners' engagement and comprehension of reading, particularly Javanese script. This quasi-experimental study aims to determine the effect of using multimodal literacy on reading ability of Javanese script learners and to find out Javanese learners' attitudes of using multimodal literacy on their reading ability. The sample included 72 language learners at a senior high school in central Java, Indonesia. The pretest and posttest mean scores in Javanese script reading ability between the control group and the experimental group were analysed. The results indicate that the use of multimodal literacy as an approach effectively enhances the ability and fluency of Javanese script reading in underperforming learners. Additionally, learners reported positive attitudes towards multimodal literacy. This study suggests that multimodal literacy may be integrated into the Javanese language curriculum as it is more relevant to students' learning preferences, and it is more responsive to diverse learning modes.

**Keywords:** Indonesian Javanese learners; multimodal literacy; reading ability; instruction approach; quasi-experimental study

## **Introduction**

While digital technology for language instruction has advanced rapidly, most teachers still use the conventional teacher-centred model (Agrahari, 2016; Oo et al., 2023; Rafiq et al., 2022). It is also reflected in language reading instruction in Indonesia, particularly Javanese language in schools, where many teachers still use the traditional methods (Sukoyo et al., 2023). This method involves lecturing and drilling with reading material limited to Javanese language textbooks. This method can be rather monotonous and leads learners to lose interest in reading Javanese script since it is considered stressful and tedious. Their loss of interest in reading also contributes to their low mastery of reading abilities. It indicates that the instruction methods used by teachers are less effective. Most teachers still use this method because they could not explore more innovative instruction approaches that align with the latest developments in education. Teachers' inability to explore technology-based learning media results in boredom among learners during learning. As a result, many learners do not enjoy their learning experience and are inattentive during class, which in turn also leads to lower reading ability scores (Malacapay, 2019).

Where conventional method instructions are concerned, Murodullayevna (2023) argues that in the digital era, this method is no longer sufficient to meet the demands of today's learners. Today's learners, known as digital natives, are literate not only in the traditional sense but also in an innovative way (Ekşi & Yakışık, 2015). This type of literacy involves texts that incorporate static and dynamic images, gestures, audio, spoken language, and written language. It will hinder learners' ability to improve their reading abilities if teachers in schools continue to apply ineffective instruction methods. Hence, teachers are required to be keen and selective in selecting Javanese reading methods that can be useful and can accommodate various needs of learners. To address this issue, teachers need to adopt modern instruction methods to keep up with current trends and cater to learners' diverse learning styles. This is essential in supporting the implementation of the current Merdeka Curriculum in Indonesia, which emphasises differentiated learning to fulfil different needs among learners. In this regard, multimodal literacy emerges as an approach that provides different types of learning media (Bezemer & Kress, 2016; Forceville, 2020; Lim & Tan, 2018) which reinforce the essence of differentiated learning that focuses on meeting learners' diverse needs (Brevik et al., 2018; Elliot et al., 2020; Moosa & Shareefa, 2019).

The multimodal literacy has been identified as a learner-friendly language instruction approach (Wijewantha, 2021). This is due to the incorporation of different learning materials and methods which ensures a variety of learning experiences. This combination can result in better memory retention, increase learners' enthusiasm, motivation and comprehension. Thus, this approach can contribute to better student performance. Prior studies have shown that the use of multimodal literacy has a positive effect on learners' reading ability (Astarilla & Warawan, 2018; Fälth et al., 2023; Yimwilai & Phusri, 2018; Wang et al., 2023). Sakulprasertsri (2020) also found that this approach is relevant to different learning styles in the 21st-century era. The use of multimodal literacy is an appropriate approach to enhance learners' Javanese reading ability. Yet, this approach has not gained attention from Javanese language

teachers as they only focus on designing learning media to improve Javanese reading ability. In fact, using learning media will be much more optimal if it is designed with an appropriate learning model.

The study aimed to examine the effect of a multimodal literacy approach on high school learners' ability to read Javanese script in Central Java, Indonesia. The research questions are:

- (1) Is there a significant difference between the pretest and posttest mean scores in reading ability of Javanese script between the control group and the experimental group?
- (2) To what extent does the use of multimodal literacy affect learners' ability to read Javanese script?
- (3) What are learners' attitudes toward the use of multimodal literacy approach in their lessons?

### **Theoretical Framework**

Multimodal literacy, a concept rooted in social semiotics, involves the study of a language by integrating multiple modes of meaning (Mills & Unsworth, 2017). In the context of a social semiotic approach, modes are the resources or organised semiotic structures shaped by society and culture for creating meaning. The application of multimodal literacy in this study is aimed at enhancing learners' involvement, particularly in improving their oral reading abilities in Javanese script. The study draws from Kennedy's (2020) proposed five-phase approach for integrating multimodal literacy into Javanese script reading instruction, which includes instructional games, think-pair-share activities, case-based learning, individualised diaries, and multimedia research projects. These instructional strategies are chosen intentionally to incorporate various modes of communication, including visual, auditory, and kinaesthetic elements, to create an engaging and immersive learning environment.

The first approach, educational games, engage learners in learning Javanese script by offering online activities and in-class exercises. Through this approach, learners are encouraged to participate in interactive games and complete exercises that focus on Javanese script. The second approach, think-pair-share, intends to boost learners' interaction, participation, and critical thinking. This approach involves collaborative learning, where learners choose readings from multimodal e-books with Javanese script texts. They then collectively analyse the messages conveyed via the texts, while also improving their oral reading skills and addressing challenges encountered using the multimodal e-books. Throughout this process, teachers provide explanations using presentation slides and teaching materials. The third approach involves paired Javanese reading sessions, where learners read aloud selected texts in groups. After every three groups, the teacher reviews their practice notes using case-based learning. Learners receive detailed explanations for any difficulties faced in reading and they also identify unfamiliar vocabulary for discussion. The fourth approach focuses on personalised journal entries. Learners are required to keep daily Javanese script literacy journals to encourage consistent practice and reflection. These journals serve as a way for learners to track their progress in reading Javanese script texts on a daily basis. Teachers diligently review and correct these

journals, offering individualised feedback to improve learners' learning experiences and oral reading skills. The final approach involves multimedia research projects, where learners create presentations of Javanese script text content using infographic-based multimedia formats. Through this approach, learners engage in research and create informative presentations that showcase their understanding of Javanese script.

### **Literature Review**

Multimodal literacy has gained significant attention in global education. With the rapid development of technology, teachers and researchers increasingly recognise the crucial role of multimodal literacy in improving learners' learning experiences and skills. This recognition stems from the understanding that traditional reading skills alone are insufficient to prepare learners for the complex communication demands of the digital age. Learners with multimodal literacy can engage with learning materials in ways that align with their individual preferences and styles (Li, 2022). By integrating various communication modes, such as text, photos, videos, and interactive features, learners can effectively engage with learning materials based on their individual preferences and styles leading to enhanced comprehension, higher academic achievement and learners' autonomy, and improved motivation to learn (Ganapathy & Seetharam, 2025). According to Freyn (2017), the integration of different learning modes fosters creativity and meaning making, thereby enhancing the learning environment. Pan and Zhang (2020) suggest that by combining words, images, videos, and other audiovisual symbols in the teaching process, through the rich input of information and the stimulation of different senses, multimodal teaching can enhance learners' reading abilities and facilitate their deep understanding and effective communication of the material. Yimwilai and Phusri (2018) discovered that using multiple modes, such as printed materials, pictures, audio, music, videos, and advertisements, a student-centred multimodal environment can be created in the classroom, offering new advantages for learning and presenting multiple representations of information. Furthermore, Sakulprasertsri (2020) found that incorporating various teaching methods, such as visuals, texts, and animated images, resulted in increased student engagement during lessons. This was because the class became more enjoyable, interactive, and dynamic. Therefore, the adoption of multimodal literacy in reading instruction is effective, as it allows learners to select learning materials based on their modality preferences (Al Fajri, 2020; Nouri, 2019), ultimately enhancing their comprehension, participation, concentration, and interaction (Lian, 2023; Viray, 2023).

Multimodal literacy has been widely used by scholars to enhance reading ability in language instruction. Previous studies (e.g., Anari & Abudaeedi, 2019; Baharani & Ghafournia, 2015), which applied multimodal text on reading instruction for Iranian learners, have shown significant improvement in reading comprehension achievement. Similarly, Cahyaningati and Lestari (2018) have shown that a multimodal approach can elevate the English reading comprehension of engineering students. Likewise, Boshraadi and Biria (2014) observed a positive impact on reading comprehension skills and motivation among Iranian high school learners through a

multimodal approach, fostering extensive reading habits. Recent research by Sherwani and Harchegani (2022) reported positive effects on Iraqi EFL learners' reading comprehension skills through the incorporation of pictures and video. Pan and Zhang (2020) demonstrated improved English reading proficiency and increased participation among Chinese learners through multimodal teaching. Furthermore, Bao (2017) and Lewis III and Lewis (2020) highlighted the creation of a dynamic classroom atmosphere and enhanced learners' motivation through multimodal reading instruction. Multimodal approach to the teaching of reading have also been found to promote learner anatomy and foster critical thinking skills (Varaporn & Sitthitikul, 2019). These findings suggest that employing multimodal literacy is effective in enhancing learners' reading abilities. The effectiveness of multimodal literacy in reading instruction had fostered positive attitudes towards learning (Fadilah et al., 2022; Ilmi & Dewi, 2022; Lian, 2022; Pan & Zhang, 2020; Sakulprasertsri, 2020; Varaporn & Sitthitikul, 2019; Yimwilai & Phusri, 2018).

Despite the widespread use of multimodal instruction in reading, there is a lack of studies examining its application in local languages, especially among Indonesian Javanese learners. Existing research has mainly focused on specific contexts like EFL classrooms, leaving a gap in understanding the impact of multimodal literacy on multimodal literacy on learners' Javanese reading ability. Therefore, it is crucial to investigate the impact of a multimodal literacy approach on the reading ability of Javanese learners in order to fill this gap and improve teaching practices in literacy instruction. By studying the effects of multimodal approaches on Javanese learners' reading abilities, teachers can gain valuable insights into effective teaching methods that are tailored to diverse linguistic and cultural backgrounds. This research has the potential to promote a more inclusive and effective literacy instruction, supporting the academic success of Javanese learners and contributing to the overall improvement of educational practices in Indonesia.

### **Methodology**

A quasi-experimental design was used to examine the effect of a multimodal literacy approach on high school learners' ability to read Javanese script in Central Java, Indonesia. The quantitative data consisted of learners' pretest and posttest scores for reading Javanese ability tests and scores obtained from online questionnaires.

### **Participants**

The participants were 72 Javanese language learners from senior high schools in Central Java, Indonesia, of which (N=43) were female and (N=29) were male. Most learners were at the age of 16 (50 or 69.44%), and 6 (or 8.33%) were above 17. In addition, 36 learners were in the control class and 36 in the experimental class.

### **Research Instrument**

The instrument used in this study was a reading test that learners had taken orally. There were two exams: a pretest and a posttest. Using standard methods, the teacher

created the pretest to examine the learners' reading abilities. Conversely, the posttest was administered using texts selected by each group and taught using a multimodal literacy approach. Individual post-testing allowed learners to read the book aloud to evaluate their reading comprehension after being taught via multimodal literacy. In addition, 14 questionnaire items were collected following an experiment to measure learners' opinions toward practicing multimodal literacy. There were four response scores on the questionnaire: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The statements were modified from the questionnaire developed by Yimwilai and Phusri (2018).

### **Research Procedures**

During the academic year 2023–2024, this study was carried out across eight weeks, from July to September 2023. In the pretest phase, each participant completed a 15-minute pretest and turned in their pretest assignment using a Google Form. The learners read aloud in Javanese script as they went through the traditional process of finishing the reading test. The researchers then examined the learners' scores to evaluate the pretest outcomes.

The researchers notified the teacher during the experimental phase, beginning in the second week of classes. They set up a room for a six-week multimodal literacy-based Javanese letter-reading practice. The learners were seated in two groups according to the researchers' seating arrangements during the implementation phase. The learners gathered with their group members and listened as the researchers provided explanations and instructions on learning the material through multimodal literacy. Before this implementation, the learners had been introduced to the letter form of the Javanese script and how to read it by their classroom teacher. They were also introduced to the learning log and alternative Javanese multimodal e-books containing concise materials. The performance consisted of five reading comprehension phases, including educational games, think-pair-share activities, case-based learning, personalised journal entries, and multimedia research projects. The progress of each group was tracked using their learning logs.

Next, each group chose a text and used a multimodal literacy approach to study it. Then, the learners took a posttest to assess their reading comprehension by reading the text orally. Afterward, the learners in the experimental group filled out questionnaires to gather information about their attitudes toward the instructional strategies used in the study.

### **Validity and Reliability**

The study instruments were tested for validity and reliability. The validity of each item was checked using the Pearson product-moment correlation coefficient. The 13 items are valid because  $r > .339$ , and the reliability is good because the Cronbach Alpha score is .920.

## Data Analysis

First, a normalised gain (N-Gain) test was conducted to determine the difference in the average pretest and posttest scores. An independent sample t-test (see Table 1) was used to compare the means of both the experimental and control groups. Second, to understand the effect of multimodal literacy in the experimental group, the researchers employed a general linear regression (see Table 2), followed by an effect size test (see Table 3). In this case, the researchers combined Cohen's and Sawilowsky's (2009) effect size interpretations. Third, to find out the learners' perceptions, this study used an online questionnaire with five items of closed statements analysed using descriptive statistics.

**Table 1**

*N-Gain Interpretation (Hake, 1999)*

Percentage (%)	Meaning
$g < 40$	<i>Ineffective</i>
40 – 55	<i>Less Effective</i>
56 – 75	<i>Quite Effective</i>
$g > 76$	<i>Effective</i>

**Table 2**

*Regression Coefficient Interval Interpretation (Frost, 2019)*

Coefficient Interval	Coefficient Correlation
$0.0 <  r  < 0.3$	<i>Little correlation</i>
$0.3 <  r  < 0.5$	<i>Low correlation</i>
$0.5 <  r  < 0.7$	<i>Moderately correlated</i>
$0.7 <  r  < 0.9$	<i>Highly correlated</i>
$0.9 <  r  < 1.0$	<i>Very highly correlated</i>

**Table 3**

*Effect Size Interpretation*

Size ( <i>d</i> )	Interpretation
$0 < 0.20$	Very weak (Sawilowsky)
$0.20 < 0.50$	Weak (Cohen)
$0.50 < 0.80$	Moderate (Cohen)
$0.80 < 1.20$	Strong (Cohen)
$1.20 < 2.00$	Very (Sawilowsky)
2 or more	Extremely strong (Sawilowsky)

## Results

### Differences in Javanese Script Reading Ability Using Conventional Method and Multimodal Literacy

The difference in learners' reading ability in Javanese script can be observed by comparing two groups, the control group (using a conventional method) and the experimental group (using a multimodal literacy approach). This comparison can be measured through the N-Gain scores derived from the difference between pretest and posttest scores. Before conducting the independent t-test, it is necessary to perform prerequisite tests such as normality and homogeneity tests. The results of the normality test indicate that the significance values for both the control class ( $p=.200$ ) and the experimental class ( $p=.182$ ) are greater than  $p = 0.05$ . This suggests that the data in both classes is normally distributed. Additionally, the homogeneity test using Levene's Test for Equality of Variances yielded a significance value of  $p=.187$ , which is also greater than  $.05$ . Thus, it can be concluded that the learners in the experimental class have abilities that are comparable to those of the learners in the control class before the start of the experiment.

According to Table 4, the experimental group had a mean N-Gain score of 78.92 ( $M = 78.92$ ,  $S.D. = 7.42$ ), placing it in the high category. In contrast, the control group had a mean N-Gain score of 68.59 ( $M = 59.61$ ,  $S.D. = 10.24$ ), categorising it as low. The improvement in the mean N-Gain score (78.92%) after the treatment indicates that the multimodal literacy approach is an effective learning model for enhancing Javanese script reading abilities, with a minimum N-Gain score increase of 67% and a maximum increase of 90%. However, conventional learning methods are also reasonably effective (68.59%) in improving Javanese text reading abilities, with a minimum N-Gain score increase of 49% and a maximum increase of 89%. However, the experimental group using the multimodal literacy approach achieved better scores in reading Javanese script compared to the control group.

**Table 4**  
*Tests of Normality Result*

	Treatment	Mean	Std. Deviation	Kolmogorov-Smirnov <sup>a</sup>		
				Statistic	df	Sig.
N-Gain score A	Control	69.59	10.246	.089	36	.200*
	Experiment	78.92	7.420	.123	36	.182

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

### Effects of Using Multimodal Literacy on Reading Javanese Script Ability

The effect of using a multimodal literacy approach on learners' ability to read Javanese script was further explored using a correlation test. The correlation test requires the data to meet the prerequisites of normality and linearity. The results of the linearity test indicate a Deviation from linearity significance value of  $.059$ , which



is greater than 0.05. Therefore, it can be concluded that there is a significant linear relationship between the pretest score variable (X) and the posttest score variable (Y).

Table 5 shows that the significance in the experimental group ( $p=.000$ ) is less than .05, so the null hypothesis ( $H_0$ ) was rejected. This means that multimodal literacy affects learners' ability in reading Javanese script. In addition, the value of R square ( $R^2$ ) = .597, where R square is a value that shows the percentage contribution of the independent variable in influencing the dependent variable. This value indicates that 59.7% of the results of learning to read Javanese script are affected by the use of the multimodal literacy learning model, while other variables influence the remaining 40.3%.

**Table 5**  
*Correlation Test Results*

	N	R	Correlation (R Square)	Sig.
Experiment Pretest and Posttest	36	.773 <sup>a</sup>	.597	.000

a. Predictors: (Constant), Pre-test experiment group

Furthermore, Table 6 provides the regression equation for the experimental group,  $Y = 66.568 + 0.600X$ . This equation indicates that if learners' scores before receiving multimodal literacy treatment increase by one unit, their learning outcomes will increase by 0.600 after the treatment. Additionally, the coefficient value of the variable suggests that the multimodal literacy-based learning model significantly affects learners' ability to read Javanese script.

**Table 6**  
*Coefficients Correlation Test Results*

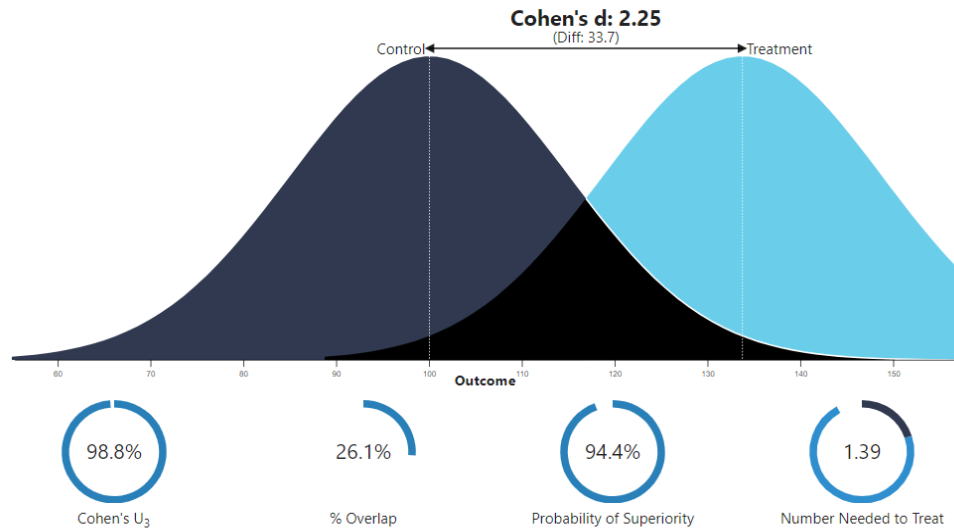
Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	66.568	2.677		24.868	.000
Pre-test experiment group A	.600	.085	.773	7.097	.000

a. Dependent Variable: Post-test experiment group A

Cohen's d-effect size test reveals that the treatment effect between the experimental and control groups is 2.25 (see Figure 1). According to the effect size interpretation table, 2.25 falls into the > 2.0 category. It indicates that using multimodal literacy as a treatment strongly effects the mastery of Javanese script reading abilities. Specifically, 98.8% of learners in the experimental group who received the multimodal literacy treatment performed on par with the control group's average (Cohen's U3). There is a 26.1% overlap between the two groups. Furthermore, there is a 94.4% likelihood that a randomly selected learner from the experimental group will outperform a randomly selected student from the control group (likelihood of superiority). Additionally, to achieve better results in the

experimental group compared to the control group, at least 1.4 learners, on average, need to be educated. It means that if there are 100 learners in each group and we assume that 20 learners achieve good results in the control group, then 20 + 72.0 learners in the experimental group will achieve good results.

**Figure 1**  
*Effect Size Result*



**Learners’ Attitudes Using Multimodal Literacy**

The learners’ attitudes towards reading Javanese script using multimodal literacy were assessed through a 11-item questionnaire. This assessment was conducted in the experimental group after the treatment. All learners in the experimental group were given a copy of the questionnaire, and 36 valid responses were collected. The mean, standard deviation, frequency, and percentage of the data are presented in Table 7.

**Table 7**  
*Learners’ Attitudes in Javanese Script Reading after Treatment*

No	Variable	Mean	S.D.	Level
1	I feel comfortable with class activities.	3.97	0.17	Highly positive
2	The materials used by the instructor in class, such as audio, picture, video, or PowerPoint slides, effectively helped me understand the lesson.	3.97	0.17	Highly positive
3	Activities in class help me understand Javanese script texts better.	3.94	0.24	Highly positive
4	I had a lot of fun with the activities in class.	3.94	0.24	Highly positive
5	Activities in class are too easy for me.	3.94	0.24	Highly positive

6	After attending this class, I found that Javanese script is easy.	3.94	0.24	Highly positive
7	I can apply what I learn to my daily life.	3.94	0.24	Highly positive
8	Activities in class are exciting for me.	3.94	0.35	Highly positive
9	I am enthusiastic to come to class.	3.94	0.35	Highly positive
10	Activities in class are enjoyable for me.	3.94	0.35	Highly positive
11	Passages assigned to read in class are very interesting.	3.91	0.29	Highly positive
12	I have more chances to participate in class activities.	3.91	0.29	Highly positive
13	Activities in class are effective in developing my Javanese script-reading abilities.	3.91	0.29	Highly positive
14	After attending this class, I can read Javanese script text better.	3.91	0.29	Highly positive
<b>Average</b>		<b>3.96</b>	<b>0.27</b>	<b>Highly positive</b>

Table 7 reveals that learners had highly positive attitudes toward instructions on reading Javanese script using a multimodal literacy approach (M=3.96). Learners favoured the lesson material and felt comfortable in the class activities. The statements of the highest agreement were: "The materials used by the instructor in class, such as audio, picture, video, or PowerPoint slides, effectively helped me understand the lesson" (M=3.97) and "I feel comfortable with class activities" (M=3.97). The results from the observation in the experimental class supported these questionnaire results. During the treatment, texts in Javanese script equipped with picture illustrations, audio, and animated videos at the end of the reading and assessments in interactive games make learners comfortable to participate in lessons. Many learners opined that they were helped by the presence of various exciting and new learning modes they have discovered.

Furthermore, learners also felt that the approach instruction was fun and beneficial to their reading ability. As shown in Table 7, it is backed by high scores for statements such as "Activities in class help me understand Javanese script texts better" (M=3.94), "I had a lot of fun with the activities in class" (M=3.94), and "Activities in class are enjoyable for me" (M=3.94). Furthermore, all observations indicated that the class activities helped learners overcome challenges in reading Javanese script texts. The learners displayed great enthusiasm in following each stage of the learning model provided. The initial treatment of providing educational games related to Javanese script material became addictive for the learners. Learners also seemed more active in asking the teacher when they encountered difficulties in understanding the material. Learners' creativity in exploring and understanding reading content in Javanese through digital learning modes could be seen when they presented their group work results.

### Discussion

This study examines the effect of multimodal literacy strategies on the Javanese reading ability of learners in senior high schools in Indonesia. The results indicate a

significant difference between the pretest and posttest scores between the group class using conventional methods and multimodal literacy strategies. The experimental group that applied the multimodal literacy approach performed better than the control group. This result is consistent with the study by Yimwilai and Phusri (2018), who observed significantly higher reading proficiency among EFL learners in the experimental group compared to the control group. Similarly, Sherwani and Harchegani (2021) and Varaporn and Sitthitikul (2019) demonstrated that the experimental group, subjected to multimodal approach, outperformed the control group in reading comprehension skills. This suggests that multimodal literacy has a positive impact on comprehension abilities, as observed in Iran and China (Anari & Abusaeedi, 2019; Boshrabadi & Biria, 2014; Pan & Zhang, 2022). These results indicate that the use of multimodal strategies not only improves learners' English reading abilities but also enhances a learner's ability to read Javanese script. On the other hand, the use of conventional methods by teachers has a minimal impact on learners' ability to read the Javanese script. This finding contradicts the study conducted by Baharani and Ghafournia (2015), which found that traditional methods had no significant effect on reading abilities. Therefore, it is not advisable to rely on this method in teaching language reading skills to learners in the long term.

The use of multimodal literacy strategies in the experimental class had a significant impact on learners' achievement and reading abilities in Javanese script. Previous researchers have also found similar results, indicating that this approach positively affects learners' reading ability (Astarilla & Warawan, 2018; Cahyaningati & Lestari, 2018; Varaporn & Sitthitikul, 2019; Yimwilai & Phusri, 2018). Additionally, this approach enhances learners' reading fluency. According to Viray (2023), the multimodal approach effectively improves reading fluency among learners. These findings demonstrate that multimodal literacy effectively enhances learners' ability to read Javanese script. Hence, multimodality in reading instruction is effective (Bao, 2017). Its effectiveness in improving learners' ability in reading language script was influenced by using different modes during instruction. The modes used included text, images, audio, video, and games. The modes were used to accommodate learners' various learning styles. According to Li (2022), using this mode helps organise activities, create an authentic learning environment, engage multiple senses to motivate learners to actively participate in language learning, and improve learners' reading ability. Pan and Zhang (2022) utilised a range of methods, such as visual aids, colours, mind maps, music, video clips, and group discussions to engage learners' senses, eventually fostering their interest in learning English and encouraging their active participation in the classroom. According to Freyn (2017), combining different learning modes can promote creativity and meaningful learning via an enriched learning environment. Teachers ought to adopt diverse approaches to address reading difficulties among high school learners. By incorporating multiple, semiotic modes in language learning, learners can enhance their language skills and apply their knowledge effectively in real-life situations (Sakulprasertsri, 2020).

Implementing multimodal literacy strategies in Javanese reading instruction offers learners a diverse array of texts tailored to their interests, fostering a personalised approach to reading. This approach aims to cultivate a habit of reading based on individual preferences and interests, making it particularly suitable for

accommodating various learning styles. Additionally, it enables teachers to customise activities to suit the needs of their learners (Sakulprasertsri, 2020). By considering learners' preferences, this approach serves to motivate and engage them in comprehending texts (Ganapathy & Seetharam, 2016). Julinar (2018) highlights that employing multiple modalities not only encourages post-lesson reading but also contributes to a more relaxed classroom atmosphere. Moreover, it can bolster learners' confidence in mastering Javanese script, aligning with Lee's (2014) assertion that such modalities enhance learners' self-assurance, benefiting particularly those with limited proficiency in the Javanese language.

With regards to learners' attitudes towards the use of multimodal literacy strategies, it has been observed in this study that learners generally have a positive attitude. Previous research (e.g., Ilmi & Dewi, 2022; Lian, 2022; Pan & Zhang, 2020; Yimwilai & Phusri, 2018) also supports this finding. This positive attitude is reflected in their strong interest in using multimodal approaches to read Javanese script, which has led to improvements in their Javanese script-reading abilities as well as enhanced content comprehension and communication skills. The application of this approach has also sparked increased interest and motivation in learning among the learners. Consequently, the learners improved in their achievement of learning outcomes, formed collaborative workspaces in their lessons, and enhanced their creativity. Furthermore, the learning process becomes more learner-centred, with the teacher serving as a facilitator. This finding is consistent with the study by Ganapathy and Seetharam (2016), who found that meaningful learning can be promoted by engaging learners in self-directed learning experience.

### **Conclusion**

This study shows that multimodal literacy effectively enhances the reading abilities of Javanese learners. There are significant differences between pretest and posttest scores in both conventional methods and multimodal literacy strategies. The use of multimodal literacy as an instruction approach in Javanese language classes in high school has significant differences in reading comprehension of Javanese script. This treatment significantly affects learners' achievement. Moreover, this treatment also has a significant effect on learners' reading abilities in Javanese script. Each step of multimodal literacy consists of strategies that offer different learning experiences to learners. Multimodal literacy assists learners in reading Javanese script by allowing them to discuss their understanding of the text with their peers, leading to improvements on learners' reading fluency, prior knowledge, vocabulary acquisition, and social abilities. As a result, learners responded positively to these benefits.

However, it is essential to acknowledge the limitations of this quasi-experimental study. Consequently, the results may not be generalisable to other contexts. This study specifically examines Javanese reading abilities and does not take into account other skills like speaking, writing, and vocabulary. However, understanding the implications of this study can help teachers effectively implement multimodal literacy strategies in their teaching practices. By recognising the positive effects of these strategies on Javanese learners' reading abilities, teachers can incorporate similar approaches into their curriculum to improve learners'

understanding and engagement with the Javanese script. Additionally, the findings of this study can be used to inform the development of teacher training programmes that equip teachers with the necessary knowledge and skills to integrate multimodal literacy strategies into their teaching methods. Therefore, the study's implications emphasise the necessity of further research in developing a more comprehensive understanding of the field by conducting empirical study involving diverse comparison groups and potentially incorporating action interaction in the classrooms. It will yield more impactful results that can contribute to the teaching profession, particularly in the reading ability of Javanese language.

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