



The Effectiveness of Flashcards as a Learning Medium on Japanese Hiragana Writing Skills of Students at SMAN 4 Padang

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Abstract:

This study aims to determine: (1) students' ability to write hiragana using flashcard-based learning media in Grade XI at SMAN 4 Padang, (2) students' ability to write hiragana without using flashcard-based media, and (3) the effectiveness of flashcards on students' hiragana writing skills. The research is limited to evaluating students' ability to write seion, dakuon, and handakuon hiragana in classes XI F3 and XI F5. This quantitative quasi-experimental study used a nonequivalent control group design by comparing an experimental class and a control class selected through purposive sampling. Data were collected through observation, pretests, and posttests, using hiragana writing tests and flashcard questionnaires as instruments. Data were analyzed using the normality test, Wilcoxon test, and Mann-Whitney test. The results showed that the experimental class (XI F5) had an average pretest score of 69.8 and posttest score of 82.2, while the control class (XI F3) recorded an average pretest score of 71.4 and posttest score of 80. Although there was a numerical improvement, statistical analysis using SPSS 26 with the Mann-Whitney test produced an Asymp. Sig. (2-tailed) value of $0.971 > 0.05$, indicating no significant difference between both groups. Thus, flashcard media did not significantly affect students' hiragana writing ability, and the null hypothesis was accepted.

Keywords: *The Effectiveness, Flashcard Learning Media, Hiragana Characters*

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INTRODUCTION

In the current era of globalization, learning a foreign language is one of the prerequisites for communicating with other countries, especially developed countries. Not only is the mother tongue learned, but a second or foreign language is also very important, especially in education and the world of work, due to the large exchange of information between countries through various advanced technological media that provide diverse kinds of information and the emergence of various other foreign languages (Ayu, 2020; Nagle, 2021; Tanjung, 2018).

Language is a communication tool used to convey thoughts, feelings, information, and ideas to others orally and in writing (Dewi et al., 2022). In addition, the importance of foreign languages in education deepens understanding, allowing humans to think logically and communicate effectively (Sulfa Hardianti & Arif, 2023). Foreign language skills are among the competencies that students must master to face challenges in education and the world of work. One of the foreign languages in demand in Indonesia besides English is Japanese.

Japanese is the 13th most in-demand language globally, with 126 million native speakers, most of whom are concentrated in two countries (Qian Ying & Murli, 2022). Tadashi Ogawa stated that Indonesia occupies the second position worldwide in the number of Japanese language learners—716,353 people—according to a quick estimate from the Japan Foundation (JF) in 2022. Ogawa revealed that more Indonesian young people and teenagers are interested in Japanese comics (*manga*) and *anime*, and he mentioned that one of the main motivations for Indonesians to learn Japanese is the desire to continue their studies in Japan (Sopaheluwakan

et al., 2023). Japanese is also one of the foreign languages that is quite difficult for beginners to learn because it requires a long time (Andayani, 2020). Japanese language education in Indonesia, especially at the high school level, has grown rapidly along with increasing student interest in the Japanese language and culture.

In Japanese, there are skills that students must achieve: listening (*kiku nouryoku*), speaking (*hanasu nouryoku*), reading (*yomu nouryoku*), and writing (*kaku nouryoku*) (Tarigan in Yanto, 2016). Learning a language is a complex activity that requires commitment, perseverance, and earnest effort; the process basically includes understanding such as listening, reading, speaking, and writing (Weerasinghe et al., 2022). Among these four aspects, Japanese language learners need proficiency in writing.

There are four writing systems in Japanese: Hiragana, Romaji, Katakana, and Kanji. Among these, the ability to write hiragana is especially challenging. Hiragana is the main foundation for learning Japanese, but many students struggle to write it correctly. A strong understanding of Hiragana characters is essential for learning Japanese, especially for beginners who want to master the basics (Utomo et al., 2024). This occurs because of the limited variety of learning methods and media used by teachers, resulting in low student motivation and suboptimal hiragana writing outcomes.

Based on initial observations and interviews at one of the schools in West Sumatra Province, Padang City—namely SMAN 4 Padang—the language teacher stated that most students could not write hiragana according to standards, and many scored below the Minimum Completeness Criteria (KKM). The teacher emphasized that hiragana learning is mandatory in the Japanese language process because it forms the basic core for beginners. One reason is the lack of varied learning methods and media; so far, teachers have relied only on textbooks and lectures without supportive media to help students understand letter forms and writing techniques. This makes classroom learning monotonous, unengaging, and demotivating for students.

Learning media is key to the success of the learning process; its use enhances learners' memory (Renni Anggraini, 2020). Flashcards contain pictures, text, and symbols on small cards that remind children of concepts related to the images (Everhard et al., 2023). The images on flashcards include information that simplifies the concepts or messages to be conveyed (Rahman, 2021). Dina Indriana (in Nursani, 2020) further stated that flashcards are picture-card media sized about 25 cm x 30 cm. Flashcards are simple visual media that stimulate memory, facilitate memorization, and provide interactive, enjoyable learning experiences.

Furthermore, previous research shows that flashcards improve vocabulary and letter-writing abilities in various languages. First, a study by Lathiifah et al. (2022) tested the "Effectiveness of Flashcard on Web Memory Learning to Improve Japanese Vocabulary Skills" using quantitative descriptive analysis with a true experimental posttest-only control group design. The results showed that flashcards on the Memory Learning Web positively affected students' Japanese vocabulary skills, as posttest scores in the experimental class were higher than in the control class. Thus, the alternative hypothesis (H_a)—"Flashcards on the Memory Learning Web are effective in improving the Japanese vocabulary skills of grade X students at SMA Negeri 5 Semarang"—was accepted.

The second study, by Mariana Hesti and Nuryanti (2022), examined "The Effectiveness of Flashcard Media on Elementary School Students' English Vocabulary Writing Skills" using a pre-experimental one-group pretest-posttest design. The results showed that flashcard media effectively improved English vocabulary writing skills in elementary students. Flashcards simplify information delivery, aid memory by attracting attention, stimulate longer brain retention, and support right-brain vocabulary recall.

The third study, by Angreany et al. (2017), investigated "The Effectiveness of Flashcard Learning Media in German Essay Writing Skills for Students of Class XI Science SMA Negeri 9 Makassar" using a quasi-experimental method. Data analysis results showed $t = 6.17 > 1.998$ at a significance level of 0.05, confirming that flashcard media effectively improved simple German essay writing skills for grade XI science students at SMA Negeri 9 Makassar.

Based on these studies, flashcard media has proven effective in enhancing language skills such as English vocabulary mastery, regional script writing, and other foreign language abilities. The rationale for this research stems from many students at SMAN 4 Padang struggling to write hiragana correctly and failing to meet the KKM, due to teachers' reliance on textbooks alone. Innovative media like flashcards are thus needed to help students remember and write letters accurately. However, research on flashcards' effectiveness for hiragana writing at the high school level remains limited. Therefore, this study offers new solutions and contributions to Japanese language learning.

RESEARCH METHODS

This research employed a quasi-experimental quantitative design to assess the effectiveness of flashcard learning media on students' ability to write *hiragana* letters in Japanese. The study used a Nonequivalent Control Group Design, comparing an experimental class and a control class that were not randomly assigned (Azzahra et al., 2023).

Both classes received a pretest to measure baseline *hiragana* writing skills, followed by treatment in the experimental class using flashcards (while the control class used conventional methods) and a posttest for both (Johnson & Christensen, 2014, p. 485). The research design is presented in Table 5.

Table 1. Research Design Nonequivalent Groups Pretest-Posttest Design

Group	Pretest	Treatment	Posttest
Experimental Classes	O1	X	O2
Control class	O3	-	O4

Information:

- O1 : Pretest (initial test)
- O2 : Posttest (final test)
- X : Treatment (Flashcard Learning Media)
- O3 : Pretest
- O4 : Posttest without treatment (final test)

This research was carried out at a high school in West Sumatra Province, Padang City, Lubuk Begalung District, namely SMAN 4 Padang. The school chosen is an A-accredited

school and is a school that has used an independent curriculum. The implementation time is for two months, namely from April to May 2025. Population is a type of research that involves all existing subjects as a data source, so the results of the research are referred to as population research.

The population in this study is all classes XI consisting of 6 classes, namely XI F1, XI F2, XI F3, XI F4, XI F5, and XI F6 which totals 210 students. The sample in this study is that there are two classes XI, F3 and F5, because the two classes only learn Japanese. Class XI F5 consists of 35 students as an experimental class that will be given learning using flashcard media and class XI F3 consists of 35 students as a control class using conventional methods or without media. Sampling in this study uses the purposive sampling technique which is a sample selection based on certain considerations.

RESULTS AND DISCUSSION

This research was conducted at SMAN 4 Padang with the aim of finding out whether there is an influence of flashcard learning media on the Japanese hiragana writing ability of students in grade XI. In this study, there are experimental classes and control classes, each class totaling 35 students. The experimental class in this study is class XI F5 and the control class is class XI F3. The data from this study is in the form of a pretest, posttest, hiragana writing ability test, and an interest questionnaire on flashcard media.

The class that is given treatment is the experimental class, while the control class is not given conventional treatment or methods only. Before the media treatment was carried out, the two classes were given a pretest test to find out the students' initial hiragana ability and the last stage, namely the final test or posttest. Based on the research that has been carried out by the researcher, the results obtained are described as follows.

a. The results of hiragana learning using flashcard learning media in grade XI F5 students of SMAN 4 Padang.

Before the application of flashcard media in Japanese subjects in the experimental class, namely class XI F5, the first thing that must be done is to give an initial test or pretest with a total of 30 questions, in order to find out the value of students' initial ability about the knowledge of writing hiragana *seion*, *dakuon*, and *handakuon*. The score is 1 if the letters are all correctly shaped, 0.5 if the letters are legible but inaccurate, and 0 if the letters are incorrect or not written. Furthermore, the final test or posttest after being given flashcard media treatment. The data on the results of the experimental class pretest scores are described in the following table:

Table 2. Frequency Distribution of Experimental Class Pretest

No.	Interval	Pretest	
	Value	Fi	%
1.	40 – 50	5	14%
2.	51 – 61	7	20%
3.	62 – 72	10	29%
4.	73 – 83	5	14%
5.	84 – 94	2	6%

No.	Interval	Pretest	
	Value	Fi	%
6.	95 – 105	6	17%
Sum		35	100%
Mean		69,8	
Median		65	
Mode		57	
	Maximum Value	100	
	Minimum Score	40	

The table above shows that the results of the experimental class pretest scores are obtained to give an idea that the initial ability of students is still relatively low. This can be seen from the pretest score that obtained an average of 69.8, with a minimum score of 40, a maximum score of 100, a median of 65, and a mode of 57. These results indicate that most students have not mastered or remembered hiragana letters well before being given the treatment.

Table 3. Experimental Class Posttest Frequency Distribution

No.	Interval	Posttest	
	Value	Fi	%
1.	63 – 69	11	31%
2.	70 – 76	6	17%
3.	77 – 83	2	6%
4.	84 – 90	1	3%
5.	91 – 97	1	3%
6.	98 – 104	14	40%
Sum		35	100%
Mean		82,2	
Median		77	
Mode		100	
	Maximum Value	100	
	Minimum Score	63	

After the learning process using flashcard media, the posttest results showed an improvement in the ability to write hiragana letters. Seen in the table above, it shows that the average score of 82.2 students' posttest scores has increased compared to the pretest scores, even most students have reached the KKM. The highest score in this posttest result increased by 100, and the lowest score was 63, the median score was 77, and the mode value was 100.

This improvement in learning outcomes shows that the use of flashcard media can help students remember and write hiragana letters faster, easier, and more fun. Flashcards that are visual and practical have proven to be effective in attracting students' attention, improving memory, and making the process of practicing writing Japanese letters easier. Thus, it can be concluded that flashcard learning media makes a positive contribution to improving hiragana learning outcomes in grade XI F5 students of SMAN 4 Padang.

Hiragana learning outcomes without using flashcard learning media in grade XI F3 students of SMAN 4 Padang

In the control class, no media treatment was given, but only the conventional method, namely in class XI F3. However, in the control class, an initial test or pretest was also given with a total of 30 questions, to find out the value of students' initial ability to write hiragana *seion*, *dakuon*, and *handakuon*. The score is 1 if the letters are all correctly shaped, 0.5 if the letters are legible but inaccurate, and 0 if the letters are incorrect or not written. Furthermore, the final test or posttest after being given flashcard media treatment. The data from the pretest scores of the control class are described in the following table:

Table 4. Control Class Pretest Frequency Distribution

No.	Interval Value	Pretest	
		Fi	%
1.	43 – 52	5	14%
2.	53 – 62	8	23%
3.	63 – 72	4	11%
4.	73 – 82	7	20%
5.	83 – 92	3	9%
6.	93 – 102	8	23%
Sum		35	100%
Mean		71,4	
Median		73	
Mode		53	
	Maximum Value	100	
	Minimum Score	43	

The table above shows that the results of the pretest scores of the control class totaling 35 students who were not given media treatment were only conventional methods. Table 13 above shows that the results of the pretest scores of the control class are obtained an idea that the initial ability of students is still low and has not reached the KKM. Students have difficulty recognizing, writing, and distinguishing hiragana letters correctly. This can be seen from the pretest score that obtained an average of 71.4, with a minimum score of 43, a maximum score of 100, a median of 73, and a mode of 53. These results indicate that most students have not mastered or remembered hiragana letters well even without using learning media.

Table 5. Control Class Posttest Frequency Distribution

No.	Interval Value	Pretest	
		Fi	%
1.	67 – 72	12	34%
2.	73 – 78	7	20%

No.	Interval	Pretest	
	Value	Fi	%
3.	79 – 84	6	17%
4.	85 – 90	1	3%
5.	91 – 96	1	3%
6.	97 – 102	8	23%
Sum		35	100%
Mean		80	
Median		77	
Mode		100	
Maximum Value		100	
Minimum Score		67	

The table above shows that the results of the posttest scores of the control class totaling 35 students who were not given media treatment were only conventional methods. Seen in the table above, it shows that the average score of 80 the average posttest score of the control class students has also increased compared to the pretest score, even most of the students have reached the KKM. The highest score in this posttest result increased by 100, and the lowest score was 67, the median score was 77, and the mode score was 100. Although there are some students who have experienced an increase in learning outcomes, most of them are still in the medium to low category.

These findings indicate that learning without the use of flashcard media is not optimal in helping students achieve understanding of hiragana letters, especially in the aspects of writing skills that require repetition, visual reinforcement, and intensive practice. Thus, it can be concluded that the use of conventional methods alone without the support of learning media provides less than optimal learning outcomes and student motivation is not so stimulated for grade XI F3 students of SMAN 4 Padang.

The next stage is a normality test and abnormal distribution data is obtained, because the data is abnormally distributed, it is continued by using a Non-Parametric test, namely the Wilcoxon test to find the average difference from the paired data. The results of the comparison of pretest and posttest scores in the experimental class that have been carried out with the Wilcoxon test are known that in negative ranks there are 8 students whose posttest scores are lower than the pretest with an average ranking of 14.56, indicating a decrease. In the positive ranks, there were 25 students whose posttest scores were higher than the pretest with an average ranking of 17.78, this shows that there is an improvement.

In Ties, there were 2 students whose scores did not change between the pretest and the posttest. Therefore, because the postive ranks are much more than negative ranks and the mean rank is higher, there is generally an increase in scores after treatment (posttest). The results of the Wilcoxon statistical test of the experimental class were known that the value of Asymp.Sig $0.003 < 0.05$ there was a significant difference, the data tested, namely the pretest and posttest of the experimental class, showed that the treatment of flashcard media had an impact on the learning outcomes of hiragana writing. Thus the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted.

For the control class, the results of the pretest and posttest comparison that have been tested with Wilcoxon are known to have negative rankings, there are 12 students whose posttest scores are lower than the pretest with an average ranking of 13.67, which means that there is a decrease in learning outcomes. Positive ranks there were 21 students whose posttest scores were higher than the pretest with an average ranking of 18.90 which means that there is an increase in learning outcomes. Ties there are 2 shivas who do not experience a change in value between pretest and posttest. This indicates an increase in the value of the control class even without special treatment. The results of the statistical test showed that the Asymp.Sig score of $0.037 < 0.05$ there was a significant difference between the pretest and posttest scores in the control class, even though they were not given special treatment, students in the control class still experienced significant changes in scores.

The hypothesis test in this study uses the Mann-Whitney test because the data is distributed abnormally and inhomogeneously. The final statistical results were found that the Asym.Sig value of $0.971 > 0.05$ meant that there was no significant difference between the learning outcomes of hiragana students in the comparison group, namely the experimental class and the control class. In other words, the hiragana writing ability of students in the two groups was relatively the same after treatment.

It can be concluded that the use of flashcard media does not have a significant influence on the ability to write hiragana in Japanese of grade XI students of SMAN 4 Padang. Hypothesis zero (H_0) is accepted and alternative hypothesis (H_1) is rejected. These results can cause several factors that can affect this, including: 1) the duration and intensity of flashcard media use which may not be long enough to have a great effect on learning outcomes, 2) different individual motivations and learning styles, where some students may be faster to master hiragana letters without the need for additional media help.

However, these results do not mean that flashcard media is not useful but rather that the effectiveness in improving learning outcomes is not optimal or strong enough to make a significant difference in certain statistical tests. However, this study can be interpreted that learning using flashcard media or without flashcard media is both able to show hiragana writing ability of students in grades XI F3 and XI F5 of SMAN 4 Padang, but does not show a statistically significant difference in the compared group.

CONCLUSION

This quasi-experimental study found that flashcard media did not significantly improve grade XI students' ability to write *hiragana* at *SMAN 4 Padang*: the experimental class (XI F5) had pretest and posttest averages of 69.8 and 82.2, respectively, while the control class (XI F3, using conventional methods) scored 71.4 and 80 ($p = 0.971 > 0.05$), indicating no statistically significant difference between groups. Thus, the null hypothesis (H_0) was accepted, and the alternative (H_1) rejected, suggesting flashcards were not optimally effective in this context despite both methods yielding improved outcomes. Future research could explore hybrid flashcard approaches combined with digital apps or longer intervention periods to enhance statistical significance.

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