

Indonesian students' perceptions of mnemonic strategies to recognize Japanese kanji characters

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ABSTRACT

The purpose of this study is to explore university students' perceptions of the effectiveness of recognizing Japanese Kanji characters by using mnemonic strategies and of understanding Kanji's meanings. Fifty Indonesian university students majoring in Japanese Language Education participated in this study. Data were collected through an online questionnaire survey and an in-depth interview with Japanese as a foreign language (JFL) students. Drawing on the analysis of questionnaire and interview data, students reported that the use of mnemonic strategies successfully enhanced their comprehension of Japanese Kanji characters lexically and semantically. The findings also showed that the mnemonic strategy was so applicable that students could recognize Japanese Kanji characters. The use of technology also mediated the adoption of the mnemonic strategy. Thus, the implication of the study is that by using different mnemonic strategies along with the use of technology, Japanese teachers could teach Japanese Kanji characters to students whose writing systems background is other than Latin/Roman alphabet systems.

Keywords: Cognitive process; Japanese as a foreign language (JFL); Kanji; mnemonic strategies; Roman Alphabets

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INTRODUCTION

Students with Roman alphabet backgrounds perceive that learning Japanese as a foreign language (JFL) is difficult because the Japanese writing system called Kanji is different from that of Roman-influenced languages, such as Spanish and English (Esposito, 2017). In addition to using two phonetic syllables (*Hiragana* and *Katakana*), Japanese also deploys Kanji, the adopted logographic Chinese characters that are used in the Japanese writing system. Kanji is the most difficult to learn compared to *Hiragana* and *Katakana* because of linguistic complexities. Previous studies show that students with the first language (L1) background following the Roman alphabet systems find

learning Kanji complicated (see Matsumoto, 2013; Rose & Harbon, 2013; Shimizu & Green, 2002; Tamaoka, 2014; Tamaoka & Yamada, 2000; Toyoda & McNamara, 2011).

Psycholinguistic studies on word recognition in alphabets and Chinese characters have led to conflicting theories about how Chinese characters are processed in mental lexicons. Research on *Kanji* recognition among JFL learners (Chikamatsu, 1996; Koda, 1990; Mori & Nagy, 1999) also indicated the implications of different processing mechanisms for students from alphabetical and Chinese character backgrounds (better known as alphabetical and background characters of students respectively) (Gamage, 2003). For this reason, much

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research has accentuated the importance of strategy training in learning *Kanji* for students with Roman-Alphabet background (Douglas, 1992; Fujiyoshi, 1996). Previous studies suggest that direct strategy training, helps JFL students become more aware of the possibility of learning *Kanji* instead of repetitive writing. One of the best ways to enhance *Kanji* acquisition is to increase students' exposure to cognitive processing strategies that are oriented towards their orthographic background.

In other words, students of the Roman-alphabet background rely on more visually oriented strategies. This concurs with the findings of Okita's (1995) questionnaire study. Additionally, it was also found that students with character backgrounds tend to depend on phonological strategies than those of alphabetical backgrounds. Although the questionnaire method only revealed the learner's surface-level strategy, the results of this study were consistent with a certain limit of character recognition studies on the processing of Chinese and Japanese characters (Chikamatsu, 1996; Mori, 1998) that processing strategies seem to differ according to the orthographic background of students.

Further, previous studies (Ho, Ng, & Ng, 2003; Klingborg, 2012) show that a mnemonic method could help learners remember *Kanji* meanings. In these studies, students learned *Kanji* through a component analysis or through form structures (*radicals*) or parts of *Kanji* (*bushu*). The relevant literature review shows the need to design effective methods that address fundamental disconnections between orthographic symbols and phonological representations, which become the main obstacle for second language learners, especially for JFL students with Roman-Alphabet backgrounds. *Kanji* learning is very complex for *Kanji* learners who are not set in *Kanji* characters because they are required to memorize the *Kanji kun-yomi* and *on-yomi* reading methods. In addition, students are supposed to understand the meaning and method of writing (Hermalin, 2015). As Toyoda (1995) reported through his survey, middle-level learners found learning *Kanji* the most difficult learning because lexical loads increased. Students' difficulties included retention, some readings from one character (such as Chinese), and visual similarities and complexities (Ivarsson, 2016; Toyoda, 1995). Thus, this study aims to investigate the influence of mnemonic strategies on the perceptions of JFL students with Roman-Alphabet backgrounds. The scopes of the study include students' perceptions of forms, ways of reading and writing Japanese *Kanji* characters, difficulties in recognizing and understanding *Kanji* characters, and ways of dealing with such characters.

METHOD

Participants and context

One of the Japanese language education majors at a state university in West Java, Indonesia allowed the researchers to collect data following ethical protocols. In this study, fifty (50, n = 17 males, n = 33 females)

Japanese students who majored in Japanese Language Education agreed to participate in the study. They learned Japanese for 1 year and 200 *Kanji* characters. These students were in the first year. They were also recruited to take a Random Controlled Test (White, Sabarwal, & de Hoop, 2014). All the students aged between 18 and 20 also consented to participate in the interview session. Figure 1 provides a summary of the research design, RCTs. This study, part of a larger research project employed a qualitative methodology to explore the perceptions of Indonesian students of Japanese as a foreign language (IJFL). It specifically aims to explore the extent to which IJFL students perceive the effectiveness of mnemonic strategies to help them recognize and understand the characters and the meaning of *Kanji*. In doing so, the following questions guiding this study are

- To what extent do students recognize the form of Japanese *Kanji* characters?
- To what extent do students perceive a mnemonic strategy as an effective technique for understanding the form and meaning of Japanese *Kanji*?

The intervention implementation of mnemonic strategies

The study began by identifying various contradictory findings regarding to the benefits of mnemonic strategies in the learning of *Kanji* and continued to explore the use of mnemonic strategies as reported in previous studies, which tended to be quasi-experimental or survey designs (Rose, 2013). Therefore, mnemonic strategies were a pedagogical intervention implemented in two classes of first-year students in the Department of Japanese Language Education at a state university in Indonesia. During the intervention, all the participants were given a pre-test to determine their initial *Kanji* knowledge and ability based on the Standardized Japanese Language Proficiency Test known as JLPT (Levels: N5 and N4), and the initial questionnaire was administered. After taking the test, the students received *Kanji* instruction that adopted mnemonic strategies (see Figure 1).

After the introduction session in each class, only one experimental class received the intervention, that is, the learning of *Kanji* that adopted the Mnemonic Strategy. This treatment session was conducted for one semester (February to May 2018); in this case, each class period met four times on a monthly basis. There were a total of 16 class periods. The details of the implementation of the intervention are presented in Table 1.

In the last class period, a final test and a second questionnaire were administered to the experimental class. A qualitative interview was then conducted to all participants at the last stage or called a deep interview to obtain more information from the recruited participants who had different language abilities. Thus, the total number of participants in a deep interview was 30 people.

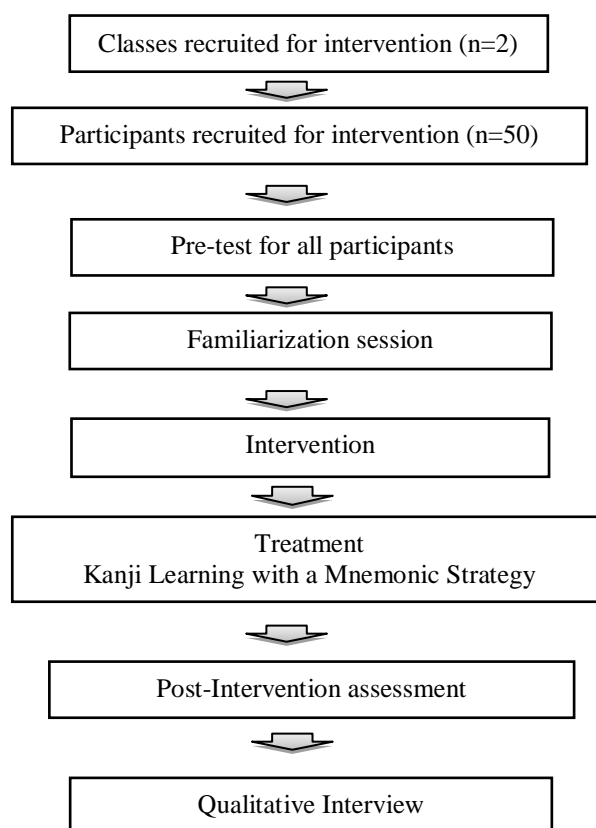


Figure 1. Study flow chart (taken from Bennie, Peralta, Gibbons, Lubans, & Rosenkranz, 2017)

Table 1. Procedural timeline of the intervention implementation (Bennie et al, 2017)

Procedures	Experimental Class
Pre-test & 1 st Questionnaire	Evaluation of the participants' Kanji knowledge
Familiarization session	Introducing a Mnemonic Strategy
Follow-up lesson 1 - 14	Kanji learning with the Mnemonic Strategy
Post-test & 2 nd Questionnaire	Evaluation of Kanji learning and Kanji knowledge
Qualitative Interview	Feedback on Kanji learning with the Mnemonic Strategy
Deep Interview	Reflecting on Kanji learning with the Mnemonic Strategy

Data collection and analysis

In this study, data were collected through writing feedback & assessment worksheets, online questionnaires, and structured interviews to see the influence of mnemonic strategies on recognizing Japanese *Kanji* characters, reading *Kanji*, writing *Kanji*, memorize Japanese *Kanji* effectively, and sustaining students' motivation to learn *Kanji*. Following this, we conducted in-depth interviews. Due to time constraints, the participants were asked to complete an online questionnaire (Google Form) and have online interviews through WhatsApp.

This study adopted an inductive analysis (Thomas, 2016). In this respect, we read all the data several times to obtain recurring themes, consistency and core meaning of raw data. 50 text segments were encoded from online questionnaire transcripts. In addition, 159 codes of the interview were applied to the category of "recognizing the form of Japanese *kanji* characters," 153 codes and categories in "the effectiveness of mnemonic strategy in Japanese *kanji* learning" 155 codes. And then, the researchers linked the same code in each transcript into the generic list of 15 themes regarding

mnemonic intervention strategies applied to the treatment class. From this list, 4 categories were developed related to two overall concepts of *kanji* character recognition and the effectiveness of mnemonic strategies as shown in Tables 1 and 2.

To protect the identity of participating students, codes relating to their gender (female or male) and background in Japanese language skills (N5, N4, not following JLPT yet) were applied. For example, a student with an N5 level of Japanese language skills was coded as FN5-1, or a male student with a Japanese language level N4 level was coded as MN4-1. Meanwhile, if a male student who never attended JLPT was coded as MN0-1.

After we encoded and allocated themes for all data from each category, we asked colleagues to review the data to double check the accuracy of coding and theme creation. The raw quotes and related codes were categorized into a list of common themes and to set the theme (from the list provided) to all codes for each group of Japanese language abilities. Inter-rater reliability checks led to a 75% overall agreement on thematic allocations. Previous qualitative research

suggested that 70% was acceptable (Guerin & Hennessy, 2002). The next analysis phase was to scrutinize similar themes and look for different themes from the related themes. For the final stage of the analysis, we deductively analyzed the categories into two broad concepts based on research questions with perceptions of introducing Japanese *Kanji* forms and the effectiveness of the mnemonic strategy towards *Kanji* learning for JFL students.

Recognizing Japanese *kanji* characters: Japanese students with for Roman alphabet background

For students who learn Japanese as a foreign language, especially those with Roman-Alphabet background, different writing systems and typological differences between *Kanji* and Alphabets are attributable to linguistic difficulty (Toyoda, 1998; Watanabe & Toyoda, 1994). Previous studies on character recognition suggest that orthographic backgrounds also contribute to processing Chinese and Japanese *Kanji* characters (Chikamatsu, 1996; Koda, 1990; Mori, 1998). However, with a visual association strategy through which the original object becomes a focus, a mnemonic method can be successful and effective in helping students remember *Kanji* meanings (Ho et al., 2003; Klingborg, 2012). Interview data in this study show the following:

"If the form is similar to the original object, it is easier to understand its meaning" (NOM1).

"Imagine something similar to the meaning of *Kanji*." (NSF3)

As reported by students, the strategy of recognizing *Kanji* characters assisted them in knowing the origin/history of the formation of *Kanji*.

"Given that the origin of the *Kanji* exists, such as *tori, uma, ashi*, etc." (N3F1)

"Looking at the philosophy, like the shape that resembles something or others." (N4M10)

This data showed that the association technique is very effective and easy to apply to the basic level of *Kanji*. The advanced level of *Kanji* whose forms and streaks are complex for *Kanji* learners are not set in *Kanji* characters. Another way to deal with this is to memorize the *Kanji kun-yomi* and *on-yomi* reading, required to understand the meaning and method of writing (Hermalin, 2015). This could be complemented by the use of technology as reported by this student:

"See examples of sentences that use *Kanji* and use *Kanji* quiz application that can sharpen our memory to remember *Kanji*." (N5M31)

Based on the total number of two tables (Table 2 and Table 3), IJFL learners consider the mnemonic strategy of "association into other forms" to be the most effective and acceptable strategy for improving students' understanding, motivation, and ability to read and write to recognize the form of *Kanji* characters.

Tabel 2. Japanese *Kanji* character recognition: Categories and themes drawing from the questionnaire and deep interview data

<u>Recognition</u>		<u>Number of codes</u>	
<u>Categories</u>	<u>Themes</u>	<u>Questionnaire</u>	<u>Deep interview</u>
Kanji characters	Similar streaks	5	+7
	Other forms of associations	16	+9
	Part of <i>Kanji (bushu)</i>	10	+77
Kanji Writing's way	Easy to copy	2	8
	Application media	5	
	Repeated writing	24	+4
Reading <i>Kanji</i> 's name	In-pairs memorizing (<i>kun-yomi + on-yomi</i>)	7	-10
	Reading and memorizing	15	-8
	Repeated writing	5	
	Applied to sentences	4	
Kanji's meaning	Part of <i>Kanji (bushu)</i>	3	+5
	Need its association	10	+1
	Reading a lot	7	
	The origin/history of <i>kanji</i>	3	
	Application/other media	8	
Total		15	90

Students' perceptions of the mnemonic strategy

The research findings as seen in Table 3 show that Indonesian students who studied Japanese as a foreign language (IJFL) reported that the mnemonic strategy could help them enhance their understanding of Japanese *kanji* form and meaning. Stimulated recall data suggest the types of mnemonic strategies used by the

students, together with the latest recommendations for the inclusion of these instruments in strategy research (Dörnyei, 2005; Rose, 2012).

Qualitative interview data reveal the rationale behind choosing or avoiding mnemonic strategies, and the students assumed that they were learning. By comparing data from questionnaires and interviews, the

limitations of self-report instruments also revealed that the students who did use mnemonic strategies but could be observed in stimulated memories. This agrees with previous studies that have warned against the reliability of self-report research (Rose, 2012) as shown in the following data:

"Firstly, I memorized the form/then practiced writing while understanding the meaning and yomi (N4M10)

"I usually watch music videos with Japanese lyrics and when I find *kanji* or a new word I will note it and look up in the dictionary which means writing *kanji* that is being learned in the notebook." (N5M20)

Tabel 3. Kanji Learning with Mnemonic Strategies: Categories and themes drawing from questionnaire and interview data

Recognition Categories	Themes	Number of codes	
		Questionnaire	Deep interview
Effective	Yes	29	10
	No	2	5
Easy way	Yes	6	4
	Some	22	7
	Not easy	3	4
Association with its original form	Yes relevant	29	15
	Not relevant	2	0
Memorizing strategy	Repeated writing	15	9
	Other media		
	Android based-application	6	3
	Association	4	2
	History of Kanji	4	2
Total	12	126	61

Questionnaire and interview data suggest that the strategies of "repeated writing" and "in-pairs memorizing" from *kanji* reading (*kun-yomi* and *on-yomi*) are considered the most successful.

"Writing, reading, and remembering *Kanji* form while looking at its writing (*hiragana*) and the form of objects (pictures or real items) and the meaning of each *Kanji*." (N4F12)

"Writing, reading, and remembering *Kanji* form while looking at its writing (*hiragana*) and the form of objects (pictures or real items) and the meaning of each *kanji*." (N5F45)

"I frequently notice song lyrics that I like, and from which I get new *Kanji* that I didn't know before." (N5M19).

It was also found out that the next strategy "association with a similar form" was considered to be the next most successful, and the strategy of "recognizing part of *Kanji* (*bushu*)" was found to be less successful, but this perception varies depending on the context of basic *Kanji* characters, while it was not applicable in advanced *Kanji* characters. The results of the data show that by applying the strategy regularly together with the use of other media such as android applications, videos, and songs, students found such integration could assist them in recognizing Japanese *Kanji* characters.

CONCLUSION

The results showed that the mnemonic strategy benefited the students, such as helping them acquire Japanese *Kanji* characters. In terms of attitudes towards

the intervention, student participants considered a mnemonic strategy useful in learning *Kanji* characters, but they reported that not all *Kanji* characters could be associated with any objects. This suggests that the use of mnemonic strategies could be complemented by the use of technology. This study also reaffirms the fact that alphabetical background students rely more on visually-oriented strategies, and JFL learners are more aware of the possibilities of learning *Kanji* that complement the mnemonic method. One of the best ways to improve proficiency in *Kanji* or *Kanji* acquisition is to increase learners' exposure to cognitive processing strategies oriented to their orthographic background. By constructing their orthographic metacognitive awareness, the difficulty in remembering different letters of the writing system will be very easy to overcome with the suitable learning strategy. Additionally, because the use of technology complements that of the mnemonic strategy, language teachers and educators must think about emerging digital literacies that students experience and use on a daily basis. They play an important role in guiding their students in how they use and utilize technology to enhance their foreign language skills.

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