

SEMANTIC SIMILARITIES BETWEEN JAPANESE AND MALAY: TEACHING KANJI TO MALAYSIAN STUDENTS

ABSTRACT

Over many decades, an abundance of Japanese-as-a-foreign-language textbooks and learning materials written in English have been published in English-speaking countries and Malaysia. In addition to conventional textbooks and other resources, online materials enable learners to improve their language proficiency autonomously. However, very few Japanese-language textbooks and learning materials have been published in the Malay language. This study examines the effectiveness of Malay as a learner's first language in the instruction of basic Chinese characters (*Kanji*) in Japanese. A multiple-choice Kanji test was administered to groups of 116 native Malay-speaking Malaysian university students. Their major was engineering. The experimental group was provided with a list including written instructions in Malay and Japanese words which respectively comprised 28 frequently used Kanji. The control group was given a list with the same words but without such instructions. The listed vocabulary was presented to the experimental group as pairs of two similar words. Each pair included a common Kanji component or Malay root that indicated semantic similarities between Japanese and Malay. In total, the average scores of the experimental and control groups were 17.03 and 10.58, respectively ($n = 116$). At a 5% significance level, a significant difference was found between the scores of the experimental and control groups ($p < 0.001$, $t = 8.10$). Therefore, explicitly presenting similarities between Japanese words and their Malay equivalents helps native Malay-speaking university students to learn basic Kanji.

Keywords: Japanese; Kanji; Malay; similarity; vocabulary

INTRODUCTION

Characteristics of the Japanese Language

Learning vocabulary is one of the most important elements in language learning. According to a 2015 survey conducted by the Japan Foundation (2017, p. 13), 33,224 Malaysians have studied the Japanese language; furthermore, the number of learners and textbooks has been increasing. Despite the increase in Japanese students, many experience Japanese as a difficult language to learn. One of the primary reasons for this difficulty is the use of Chinese characters in the Japanese language (Kanji). Hereafter, in this study, the term Kanji is employed for Chinese characters that are currently used in Japanese. Chikamatsu (2005) indicates that learners of Japanese as a foreign language (JFL), particularly, whose first language has a phonological writing system frequently face difficulties in learning Kanji characters. This is because Kanji do not have systematic one-to-one correspondence between their components and pronunciation.

Many Kanji have multiple pronunciations. For example, the Kanji 人 (person) can be pronounced *hito* as an original Japanese word that means person, and *jin* as part of Chinese-origin loanwords such as *Nihon-jin* 日本人, which means Japanese man or woman; this is dependent on the contexts. The majority of Kanji consists of two parts: a component that indicates the holistic meaning of the character and a second component that shows an approximate pronunciation of the whole character (Hadamitzky & Spahn, 2012, p. 43). More than 80% of high-frequency Kanji characters in Japanese consist of a combination of semantic and phonetic components (Koda, 2005, p. 79).

Over many decades, an abundance of JFL textbooks and learning materials written in English have been published in English-speaking countries and Malaysia. In addition to conventional textbooks and other resources, online materials enable learners to improve their language proficiency autonomously. However, very few JFL teaching and learning materials have been published in the Malay language. Chin et al. (2010), Ismail and Ito (2011), and Lee et al. (2012) are examples of Japanese-language textbooks written in Malay for Malaysian secondary school students. In these textbooks, although vocabulary items such as those related to clothes are shown as a unit in the same category, Kanji characters that include a common component are not explicitly presented.

Objective

The objective of this study is to suggest and examine an efficient method of explicitly presenting groups of Kanji characters, including a common semantic component, along with semantically similar Malay equivalent words, to facilitate the learning of Kanji characters by native Malay-speaking university students in Malaysia.

The research questions of this study

1. Does presenting similarities between Kanji characters and their Malay equivalents help Malay-speaking students learn Kanji characters?
2. Do the three Kanji types proposed in this study help Malay-speaking students learn basic Kanji characters?

Characteristics of Malay Vocabulary

Prefixes and suffixes in the Malay language enable a significant capacity of derivation, which is based on a stem referred to as the root or root word. For example, the Malay root word *lelaki* (man) forms compounds such as *anak lelaki* (son) and *adik lelaki* (younger brother). *Anak* means child and *adik* means younger sibling. These words (*anak* and *adik*) are usually specified by a word that indicates their gender. A verb-based Malay root word such as *dengar* (to hear) is usually followed by the verbal prefix, *men-* in formal written Malay. In addition, *dengar* can also be the radical of a noun such as *pendengaran* (hearing as a physical sense). The combination of the prefix *pen-* and suffix *-an* nominalizes a root. A Malay root, which can usually be used independently as a noun or an adjective, and its derivatives have a

semantic scope similar to that of Japanese words that include a common semantic component, which is usually called *bushu* or radical.

According to Nation (2001), learners' first language has a considerable impact on the processes of second language (L2) acquisition, and many studies have suggested the usefulness of the first language for learning L2 vocabulary. Larsen-Freeman and Anderson (2011, p. 97) also highlight that language learners' understanding and confidence can be enhanced by using their first language as it can help in efficiently conveying the meanings of words from the target language. Demonstrating Japanese words that share meanings and common Kanji characters to Malay-speaking students will assist students in learning Kanji characters as groups of Japanese words that contain a common Kanji.

LITERATURE REVIEW

Malays are the principal ethnic group in the majority of Malaysians (Bumiputera), who constitute approximately 68% of the total population of Malaysia (Department of Statistics Malaysia, 2019); they mostly speak Malay as their first language and are neither accustomed to Kanji characters nor to Kana phonetic characters. Therefore, Japanese-language textbooks published or used in Malaysia and the teaching of Kanji characters in classrooms have restrictions, such as the number of Kanji characters taught at each level and their number of strokes.

Shaharuddin et al. (2016) is a textbook for early beginners, used by students learning Japanese as an elective course at a major Malaysian university. This textbook and the two other volumes of the same series are written in Romanized Japanese and do not teach pronunciations of Kanji characters because the content has to be taught within the limited duration of the elective courses. However, pronunciation and order of strokes of Hiragana phonetic characters are taught in this textbook.

Japanese-language teaching in Malaysia and the teaching of Japanese Kanji in Malaysian secondary schools has considerable restrictions. In particular, only one specific pronunciation is shown for each Kanji to minimize confusion. A third-year Japanese textbook by Lee et al. (2012) avoids linking the Kanji 毎 *mai* (every) to the word 毎日 *mainichi* (every day). Instead, the textbook shows the word as まい日 by replacing the Kanji with two Kana phonetic characters of the same pronunciation (p. 13). Although the Kanji 毎 (*mai*) is avoided in that part of the textbook, a following unit of the very same textbook introduces the character and the word 毎日 (“every day”) but this time in Kanji characters (p. 203). To maintain coherence, the word could have been spelled in Kanji characters throughout the whole textbook, and small phonetic spellings could have been added above the Kanji in parts where the characters were yet to be taught. The majority of Kanji vocabulary consists of two-character compounds. It would certainly be beneficial for students to be able to recognize the combinations of two or more Kanji characters as used by native speakers. As a result, the current policy for demonstrating Kanji characters in

Japanese-language textbooks for Malaysian secondary school students, which aim to reduce learner confusion, hinder Malaysian students from learning Kanji characters.

Daulton (2008) focused on utilizing Japanese English-based loanwords in teaching English as a foreign language. According to Daulton's (2008) study, loanwords included in the most frequent 3,000 words in Japanese especially benefited Japanese learners of English. In Japanese, loanwords from Western languages are spelled with Katakana, a type of syllabics that is different from Hiragana, the other type of syllabics used to write Japanese. One of the significant findings of Daulton's (2008) study is that it demonstrated that a positive transfer could occur between languages that belong to very different language families such as English and Japanese. In addition, it was proved that despite the difference in scripts, English-based loanwords could benefit Japanese English-language learners.

Toyoda (2007) proposed several approaches that emphasized the improvement of word-level processing skills to enhance autonomous Japanese vocabulary learning. In particular, Toyoda highlighted the importance of the explicit demonstration of the Kanji radical of each character and its holistic meaning. In addition, to enable learners to realize how the semantic connections between Kanji characters and the radicals indicate the basic meaning, Toyoda recommended explicitly presenting pairs or groups of Kanji characters with a common semantic indicator that maintained a close semantic relation to the actual meaning of the characters.

According to Mori (2014), Japanese-language learners who speak European languages as their first language need to enhance visual processing strategies for learning Kanji characters and their semantic components. Japanese has adopted a mixed orthography of Kana phonetic characters and Kanji characters. Students of Japanese are required to become proficient in both phonologic and logographic reading.

Horiba (2012) compared first-language knowledge types primarily utilized by native Chinese- and Korean-speaking learners of Japanese when developing reading comprehension of Japanese texts. In her study, 50 Chinese and 20 Korean students were asked to complete a word-definition matching test and another test that required them to select three word associates from among seven options for assessing their text comprehension. The results indicated that Chinese-speaking participants mostly depended on Chinese characters and morphemic information to extract meaning from the Japanese texts provided, in which most nouns and the main part of the verbs had been written using Kanji characters (p. 116). In contrast, Korean-speaking participants frequently relied on the syntagmatic information obtained from the Japanese texts provided, such as word order and sentence structure, as these elements in Japanese share a high level of similarity with those in Korean. The abovementioned studies contribute to the elaboration of the vocabulary instructions and test used in this study.

METHODOLOGY

Participants and Materials

The participants were 116 Malaysian university students who are native speakers of Malay. Their major was engineering. The author of the study obtained official written permission from a Malaysian university and collected data from the participants. Prior to administering the test, the researcher randomized the participants by asking each of them to draw a folded piece of paper from a box which assigned them to either the experimental group (56 participants) or the control group (60 participants). The researcher inquired as to whether the participants had learned Japanese at any institution formally or informally. Those having any prior learning experiences were excluded. Since phonetically similar pairs are limited in number between Japanese and Malay, this study does not aim to associate the pronunciation of selected Kanji characters with either their forms or the phonetic features of their Malay equivalents.

Tables 1, 2, and 3 respectively exemplify Type 1, 2, and 3 Kanji characters and their Malay equivalents proposed in this study, as demonstrated to the experimental group participants in the test administered during this study. Common components in each pair of Type 1 and 2 characters mostly comprise fewer than 10 strokes. However, the number of strokes for second Kanji characters of these types mostly exceeds 10. Among Type 1 word pairs, a common Kanji component and common Malay root in some of the word pairs (e.g., the Kanji component 火 “fire” and the Malay root *bakar* “burn”) have less semantic connections than other Type 1 words and all Type 2 words.

Table 1

Examples of Type 1 Kanji and Malay Words Shown to the Experimental Group

First Kanji in the pair	Second Kanji in the pair	Common components
光 (light) and <i>cahaya</i> (light)	輝 (part of “to shine”) and <i>bercahaya</i> (to shine) (Root: <i>cahaya</i> “light”)	光 (light)
魚 (fish) and <i>ikan</i> (fish)	漁 (part of “fishery”) and <i>perikanan</i> (fishery) (Root: <i>ikan</i> “fish”)	魚 (fish)
火 (fire) and <i>kebakaran</i> (destructive fire)	燒 (part of “to burn”) and <i>membakar</i> (to burn) (Root: <i>bakar</i> “burn”)	火 (fire)

The Malay equivalents for Type 2 characters are compound words that include a common Malay word. The meanings of the shared Kanji components (女 “woman” and 目 “eye”) and those of the Malay equivalents (*perempuan* “woman” and *mata* “eye”) is almost

identical. This is a major advantage of Type 2 similarity. Additionally, the position of the shared Kanji components is fixed to the left side of each listed Type 2 character.

Table 2

Examples of Type 2 Kanji and Malay Words Shown to the Experimental Group

First Kanji in the pair	Second Kanji in the pair	Common components
妹 (younger sister) and <i>adik perempuan</i> (younger sister)	娘 (“daughter”) and <i>anak perempuan</i> (daughter) (Root: <i>perempuan</i> “woman”)	女 (woman)
眼 (part of “eyeglasses”) and <i>cermin mata</i> (eyeglasses)	瞳 (pupil of the eye) and <i>anak mata</i> (pupil of the eye) (Root: <i>mata</i> “eye”)	目 (eye)

Table 3

Examples of Type 3 Kanji and Malay Words Shown to the Experimental Group

First Kanji in the pair	Second Kanji in the pair	Common components
聞 (part of “to hear”) and <i>mendengar</i> (to hear)	聽 (part of “hearing”) and <i>pendengaran</i> (hearing) (Root: <i>dengar</i> “hear”)	耳 (ear)
鉄 (iron) and <i>besi</i> (iron)	鋼 (steel) and <i>besi waja</i> (steel) (Root: <i>besi</i> “iron”)	金 (gold, metal)

Common Kanji components in Type 3 characters and their Malay equivalents maintain a certain semantic connection. Thus, characters in this category will encourage learners to imagine and understand a shared basic meaning between the common components of the listed Kanji characters and the shared element shared by their corresponding Malay words. Moreover, the majority of Type 3 characters include more than 10 strokes and three (聞, 聽, and 鋼) of them contain approximately 15 strokes, which would be the most difficult for participants to learn. Therefore, the presentation method would allow them to quickly discover the most important components of these complex characters.

Table 4 demonstrates an example of word pairs and instructions shown in the instruction sheet for the experimental group. The instructions shown below are English translations of those used in the test. Table 5 exemplifies words shown in the sheet for the control group.

Table 4

Malay Words with their Japanese Equivalents

Root: <i>perempuan</i> “woman”	
<i>adik perempuan</i> “younger sister”	妹 imōto
<i>anak perempuan</i> “daughter”	娘 musume
The left-side component of both characters 妹 (younger sister) and 娘 (daughter) originates from the Kanji 女 (woman). Similarly, the root <i>perempuan</i> shared in their Malay equivalents also means woman.	

Table 5

Excerpt from the Vocabulary List for the Control Group

眼鏡 megane	cermin mata (glasses)
魚 sakana	ikan (fish)
輝く kagayaku	bercahaya (to shine)
聴力 chōryoku	pendengaran (hearing)

Examples of the questions used in the test of this study are presented in Table 6. The total number of questions was 28.

Table 6

Excerpt from the Vocabulary Test

Directions (English translation)	
“()” indicates characters which are asked. Please choose and circle a correct answer (a, b, c, or d.)	
1. dilahirkan	()まれる umareru
a. 姓 b. 産 c. 性 d. 生	
2. perikanan	()業 gyogyō
a. 泣 b. 魚 c. 漁 d. 点	

Three Kanji Types Suggested in This Study

This section compares the major characteristics of the three similarity types proposed in this study. Japanese Kanji characters and their Malay equivalents are categorized based on types of cross-linguistic similarities between the listed Japanese and Malay words. The main differences between the three similarity types exist in degrees of semantic similarities. In addition, the structures of Malay words equivalent to the listed Japanese words also relate to the three types, as all Type 2 Malay words are compound (e.g., *adik perempuan* “younger sister” and *anak perempuan* “daughter”). Word structures for Types 1 and 3 differ for each

word pair. The degree of semantic similarities between the listed Type 2 Japanese and Malay words was highest among the three similarity types, as both Type 2 Japanese and Malay words and their shared elements have the same meanings. The Type 2 characters 妹 and 娘 only include 10 or fewer strokes, and the other Type 2 characters 眼 and 瞳 include more than 10 strokes. Therefore, 妹 and 娘 were categorized as Type 2a, and 眼 and 瞳 were categorized as Type 2b. Type 1 Kanji characters and their Malay equivalents also share a high level of similarity. The similarity level between common Kanji components and shared Malay words in some Type 1 word pairs was lower than in Type 2 pairs. While Type 3 Kanji characters and the corresponding Malay words have almost identical meanings, their Kanji components and the shared Malay word share fewer similarities in meaning such as “ear” in Japanese and “hear” in Malay. Word structures of the Malay equivalents are simple or compound for Types 1 and 3, and the structure of Type 2 Malay words is compound only. The listed Japanese and Malay words have the same meanings (e.g., “light” for both the Japanese *hikari* 光 and the Malay *cahaya*). Similarly, Japanese and Malay words based on Type 2 and Type 3 similarities are very close in meaning.

RESULTS

Average Scores of the Experimental and Control Groups

Table 7 demonstrates the detailed results. In total, the average scores of the experimental and control groups were 17.03 and 10.58, respectively ($n = 116$). At a 5% significance level, a significant difference was found between the scores of the two groups ($p < 0.001$).

Table 7

Details of Results (n = 116)

	Experimental group	Control group
Group total	954	635
Mean scores	17.03 (maximum: 28)	10.58
<i>SD</i>	4.93	3.47
Number of participants	56	60
<i>p</i> -value	< 0.001	
<i>t</i> -value	8.10 (> 1.98)	
<i>DF</i>	114	

Multiple linear regression indicates that the experimental group had an effect size of 6.4 more correct answers than the control group ($df = 114$, $R^2 = 0.3651$, $p < 0.001$). This shows that the use of the presentation method enabled an improvement of 6.4 points, i.e., 22.9% in the scores of the experimental group. Figure 1 demonstrates the mean and standard deviation of the experimental and control groups.

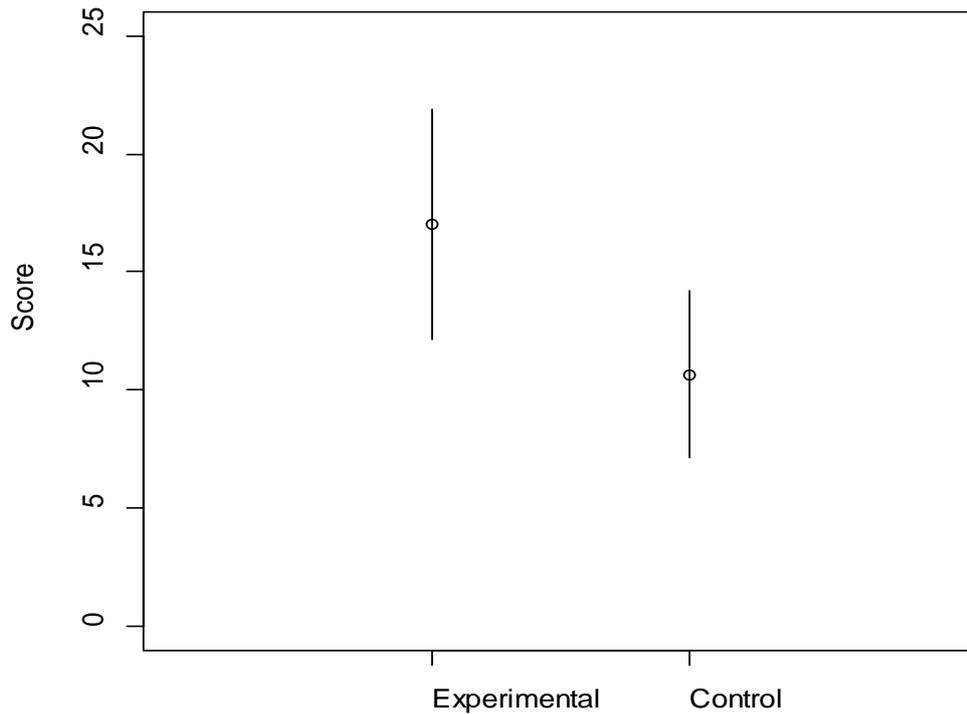


Figure 1. Mean and Standard Deviation of the Experimental and Control Groups

Figure 2 demonstrates the Bootstrapped means and 95% confidence intervals for the proportion of correct answers regarding Types 1, 2a, 2b, and 3 Kanji characters (1000 Bootstrap replicates). Statistically significant differences were found between Types 1 and 3 and between Types 2a and 2b; however, no significant difference was observed either between Types 1 and 2a or between Types 2b and 3. The analysis of variance (ANOVA) was not employed to analyze the data because the factors (Kanji types) in the test were not independent, that is, each participant's score for each factor was not statistically independent.

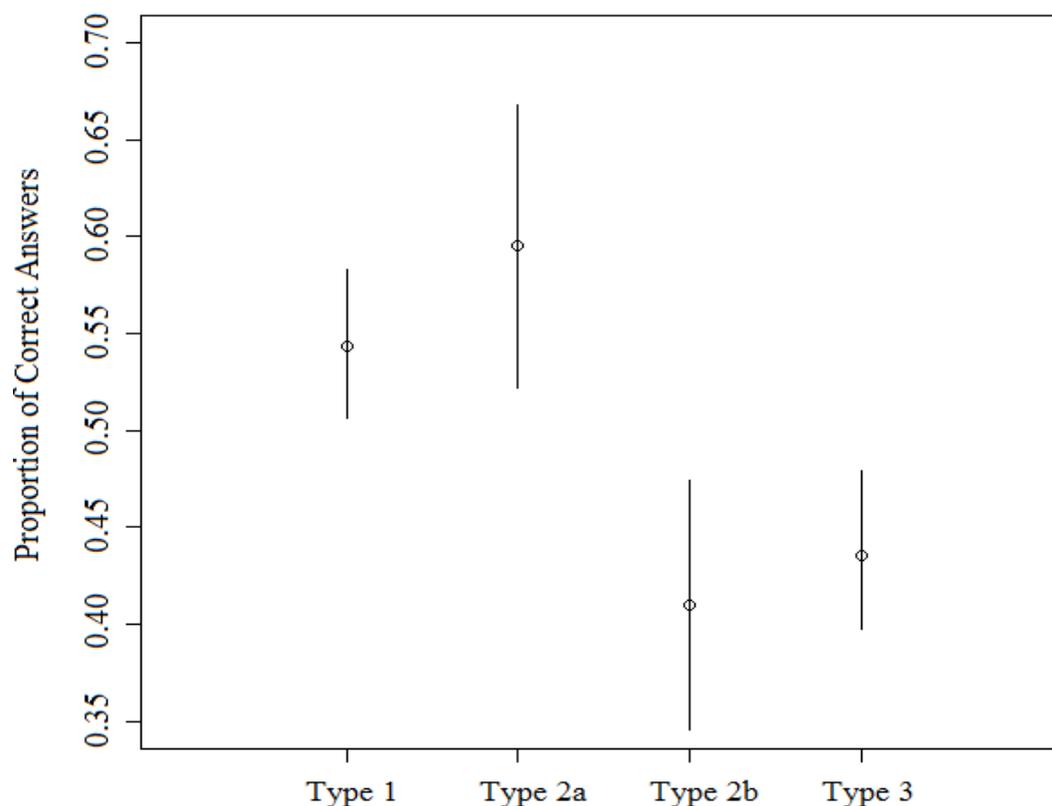


Figure 2. Bootstrapped Means and the 95% Confidence Intervals for Proportion of Correct Answers regarding Types 1, 2a, 2b, and 3

Numbers of participants who chose correct answers

Table 8 demonstrates the numbers of correct answers for each question. The characters 魚, 火, 漁, 光, 妹, 言, 海, 娘, 痛, 鋼, and 生 were the 11 most correctly identified characters for the total participants in the vocabulary test. Among these, Type 1 characters were 魚, 火, 漁, 光, 言, and 生. Type 2 characters were 妹 and 娘 (Type 2a). Type 3 characters were 痛, 海, and 鋼. Characters with 10 or more strokes were 魚, 漁, 娘, 痛, and 鋼. On the other hand, the 10 least correctly identified characters were 場, 病, 地, 産, 瞳, 眼, 過, 聴, 聞, and 輝.

Table 8

Numbers of the Correct Answers and Kanji (n = 116)

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
60	76	78	75	57	56	67	60	60	47
生	漁	火	光	語	見	海	痛	鋼	瞳
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
43	68	55	49	40	78	64	53	51	48
産	言	視	過	地	魚	娘	洋	聞	眼

Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
55	37	29	52	53	51	74	57
鉄	病	場	輝	通	聴	妹	焼

The Kanji 場 was correctly identified by only 29 out of the total of 116 participants. Among these, Type 1 characters were 産 and 輝. The two Type 2b characters 瞳 and 眼 were correctly identified by 47 and 48 out of 116 participants, respectively. These appeared to be more difficult than the Type 2a characters 妹 and 娘 that were correctly recognized by 74 and 64 participants, respectively. Among Type 3 characters (場, 病, 地, 過, 聴, and 聞), the character 場 was correctly identified by 29 participants and was the least correctly recognized character.

Table 9

The 10 Characters Which Demonstrated the Maximum Differences

Kanji (T: Type)	Experimental Group (<i>n</i> = 56)	Control Group (<i>n</i> = 60)	<i>t</i> -test Results (* Significant to 0.05, ** Significant to 0.01, *** Significant to 0.001)
鋼 (T3)	43 (76.8%)	17 (28.3%)	$t = 5.9271, df = 113.997, p < 0.001^{***}$
見 (T1)	40 (71.4%)	16 (26.7%)	$t = 5.3405, df = 113.053, p < 0.001^{***}$
光 (T1)	49 (87.5%)	26 (43.3%)	$t = 4.3691, df = 85.411, p < 0.001^{***}$
娘 (T2)	43 (76.8%)	21 (35.0%)	$t = 4.9601, df = 113.697, p < 0.001^{***}$
輝 (T1)	37 (66.1%)	15 (25.0%)	$t = 4.8223, df = 111.19, p < 0.001^{***}$
漁 (T1)	48 (85.7%)	28 (46.7%)	$t = 4.864, df = 106.029, p < 0.001^{***}$
聞 (T3)	35 (62.5%)	16 (26.7%)	$t = 4.1169, df = 111.149, p < 0.001^{***}$
魚 (T1)	46 (82.1%)	32 (53.3%)	$t = 3.4719, df = 110.014, p < 0.001^{***}$
語 (T1)	34 (60.7%)	23 (38.3%)	$t = 2.4502, df = 113.367, p < 0.05^*$
痛 (T3)	35 (62.5%)	25 (41.7%)	$t = 2.2757, df = 113.692, p < 0.05^*$

As shown in Table 9, the 10 characters in the test, which demonstrated the maximum differences in scores between the experimental and control groups, were 鋼, 見, 光, 娘, 輝, 漁, 聞, 魚, 語, and 痛. More than 60% of the experimental group correctly recognized these 10 characters, and the smallest difference between the percentages of correct responses from the two groups was 20.8% for 痛. Among the 10 characters demonstrated in Table 9, 見, 光, 輝, 漁, 魚, and 語 were Type 1 characters. 娘, a Type 2a character, was ranked fourth. Type 3 characters 鋼, 痛, and 聞 were ranked first, sixth, and eighth, respectively.

The difference between percentages of correct answers for 漁 was 39%, and 85.7% of

the experimental group selected the correct answer. 光 was correctly identified by 87.5% of the experimental group, and the difference between percentages of correct responses given by the two groups was 44.2%. In addition, 76.8% and 66.1% of the experimental group correctly recognized 娘 and 輝, respectively, and the difference between the percentages of correct answers given by both groups for both characters was approximately 41%. The proportion of the correct responses from the control group for 輝 was 25.0%, the lowest among the 10 characters in Table 9. The differences between the experimental and control groups may justify the importance of the explicit demonstration of Kanji components.

The results also indicate that the presentation method used for the test facilitated the learning of characters with 10 or more strokes. More than 70% of the experimental group correctly identified 鋼, 見, 光, 娘, 漁, and 魚, among which 魚 was the most correctly identified (53.3%) by the control group. In contrast, 鋼, 聞, and 見 were correctly recognized by only 28.3%, 26.7%, and 26.7% of the control group, respectively. The visual complexity of 鋼 and 聞 may have been the primary reason for the low percentage of correct answers observed in the control group. The presentation method suggested in this study enabled an increase of at least 35% in scores for the three characters, which appeared to be difficult for the majority of the control group participants. The difficulty primarily faced by the control group was similar to that described in Matsumoto (2013), who reported that beginners of Japanese whose first language is based on an alphabet were required to improve their semantic processing skill to learn Kanji characters more effectively.

CONCLUSION

The aforementioned results suggest that an explicit presentation of similarities between Japanese Kanji characters and their Malay equivalents could assist Malay-speaking university students in learning basic Kanji characters. In relation to the two research questions, the primary significance of the study is analyzed as follows:

1) Usefulness of Malay, the learners' first language

The results of the Kanji test conducted in this study revealed that written instructions in Malay assisted Malay-speaking university students in learning the listed Kanji characters with statistically significant differences. The experimental group often correctly recognized characters, such as 魚 (“fish”) (Type 1), 漁 (part of 漁業 “fishery”) (Type 1), 妹 (“younger sister”) (Type 2a), 娘 (“daughter”) (Type 2a), and 海 (“sea”) (Type 3). The Type 1 characters 輝 (“to shine”), 焼 (“to burn”), 視 (part of 視力 “eyesight”), and 漁 (part of 漁業 “fishery”) included more than 10 strokes and appeared to be visually complex for the Malay-speaking students who participated in the test. The Malay words *bercahaya* (“to shine”) from *cahaya* (“light”) and *membakar* (“to burn”) from *bakar* (root meaning “burn”) were the equivalent of the listed Japanese words 輝く (“to shine”) and 焼く (“to burn”). Both the Malay words were derived by prefixes. This type of derivation could assist the participants of the experimental group in learning these characters. The Malay words

penglihatan (“eyesight”) from *lihat* (root meaning “see”) and *perikanan* (“fishery”) from *ikan* (“fish”) that correspond to the Japanese words 視力 (“eyesight”), and 漁業 (“fishery”) comprised a combination of a prefix and a suffix. The Type 3 characters 場 (“place”) and 海 (“sea”) were introduced with the Malay words *tempat* (“place”) and *laut* (“sea”), both of which are root words. Therefore, during the test the participants of the experimental group may have been able to concentrate on the details of the form of the characters while learning them.

2) Benefits of the three Kanji types proposed in this study

Most of the Type 1 characters included pictograms such as 火 (“fire”) and were the easiest of all the types for the experimental group. However, the Type 2a characters 妹 (“younger sister”) and 娘 (“daughter”) were included among the easiest to learn in the test. The similarities between the Japanese 妹 (“younger sister”), including the radical 女 (“woman”), and its Malay equivalent *adik perempuan* (“younger sister”) and those between the Japanese 娘 (“daughter”), which also included the component 女, and its Malay equivalent *anak perempuan* (“daughter”) appeared to be the easiest to comprehend for the participants of the experimental group.

The three Kanji types proposed in this study were beneficial for a comparative presentation of Japanese and Malay words sharing several levels of similarities. The results of the study indicated that the learning of complex Type 1 (e.g., 輝 and 視) characters was significantly encouraged by comparative presentation with simpler Type 1 characters (e.g., 光 and 見). The comparative presentation of common components of Type 2a characters and Type 3 characters and their Malay equivalents were helpful to the majority of the experimental group participants.

This study has several limitations. As the vocabulary experiment in this study required a Malaysian university in which nearly 95% of students were native Malay speakers, the number of participants was quite limited, and the author was unable to locate the same participants for subsequent tests. In addition, none of the participants included in the study had previous knowledge of Kanji characters, and it was not possible to carry out writing tests for the listed characters in the allotted 30 minutes. For future studies, it would be desirable to examine the possibility of developing teaching materials comprising bilingual vocabulary lists such as those suggested.

ACKNOWLEDGEMENT

This research received no specific grant from any funding agency in the public, commercial or nonprofit sectors.

REFERENCES

- Chikamatsu, N. (2005). L2 Japanese kanji memory and retrieval: An experiment on the tip-of-the-pen (TOP) phenomenon. In V. Cook & B. Bassetti (Eds.), *Second language writing systems* (pp. 71-96). Clevedon: Multilingual Matters.
- Chin, S. S., Najmudin, M., Ahmad, H. A., & Panel Penggubal Buku Bahasa Jepun (2010). *Bahasa Jepun tingkatan 1: Nihongo daisuki* [Textbook of the Japanese language level 1]. Putrajaya: Ministry of Education of Malaysia.
- Daulton, F. E. (2008). *Japan's built-in lexicon of English-based loanwords*. Clevedon: Multilingual Matters.
- Department of Statistics Malaysia. (2019). Current population estimates, Malaysia, 2016–2017. Retrieved from <https://www.dosm.gov.my/v1/>
- Hadamitzky, W., & Spahn, M. (2012). *Japanese kanji and kana*. North Clarendon, VT: Tuttle Publishing.
- Horiba, Y. (2012). Word knowledge and its relation to text comprehension: A comparative study of Chinese- and Korean-speaking L2 learners and L1 speakers of Japanese. *Modern Language Journal*, 96(1): 108-121. Doi: 10.1111/j.1540-4781.2012.01280.x
- Ismail, J., & Ito, S. (2011). *Bahasa Jepun tingkatan 2* [Textbook of the Japanese language level 2]. Shah Alam: Percetakan Tabah.
- Koda, K. (2005). *Insights into second language reading: A cross-linguistic approach*. Cambridge: Cambridge University Press.
- Larsen-Freeman, D., & Anderson, M. (2011). *Techniques and principles in language teaching* (3rd ed.). Oxford: Oxford University Press.
- Lee, S. L., Ooi, G. L., & Kaivaliam, S. (2012). *Bahasa Jepun tingkatan 3* [Textbook of the Japanese language level 3]. Semenyih: Awan Metro.
- Matsumoto, K. (2013). Kanji recognition by second language learners: Exploring effects of first language writing system and second language exposure. *The Modern Language Journal*, 97(1): 161-177. Doi: 10.1111/j.1540-4781.2013.01426.x
- Mori, Y. (2014). Review of recent research on kanji processing, learning, and instruction. *Japanese Language and Literature*, 48(2): 403-430. Retrieved from https://www.jstor.org/stable/24394416?seq=1#page_scan_tab_contents
- Nation, P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Shaharuddin, G. S., Aziz, A., Sharif, S., & Abdul-Rashid, N. R. (2016). *Hajimete-no nihongo 1* [Elementary Japanese 1]. Cheras: Pustaka Nadwa.
- The Japan Foundation (2017). *Survey report on Japanese-language education abroad 2015*.

Tokyo: Kurosio Publishers.

Toyoda, E. (2007). Enhancing autonomous L2 vocabulary learning focusing on the development of word-level processing skills. *The Reading Matrix*, 7(3), 13-34. Retrieved from http://www.readingmatrix.com/articles/etsuko_toyoda/article.pdf