

Instructional Needs of College-Level Learners of Japanese as a Heritage Language: Performance-Based Analyses

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ABSTRACT

This paper reports a study comparing the reading performances (i.e., comprehension and speed in reading Japanese texts) and oral skills of intermediate and advanced learners of Japanese at an American university. The study assessed the performance of 14 heritage learners, who spoke Japanese at home and/or went to a Japanese school in the U.S., against that of 11 Chinese learners with extensive knowledge of kanji (Chinese characters used to write Japanese) in their first language (L1), and 14 non-heritage learners without such knowledge in their L1s. As anticipated, the heritage learners were found to have high oral proficiency. Their weakness, however, was not underdeveloped reading proficiency, as anticipated, but insufficient knowledge of kanji. The paper discusses the importance of recognizing the instructional needs of heritage learners studying a language that uses kanji in writing, and suggests some pedagogical methods to satisfy their needs.

Heritage learners at the college level are typically characterized as having competent speaking proficiency but underdeveloped reading proficiency (Douglas 2001b; Dumitrescu 2000).¹ Teaching these learners in regular foreign language courses presents difficulties, because heritage learners have different skills and deficiencies than their non-heritage classmates.

In some commonly taught languages, separate courses are offered for heritage learners. In less commonly taught languages, where enrollments are usually small, offering separate courses for heritage learners is economically difficult if not impossible. In the case of a language like Japanese, which uses kanji (Chinese characters) in writing, an additional problem is that there is a substantial difference in kanji decoding skills (the ability to read kanji without knowing its pronunciation in the target language) between those who have a background in kanji and those who do not.² First of all, Chinese characters do not indicate their pronunciations in the same manner as the Roman alphabet. When native readers of kanji encounter characters whose pronunciations are unknown,

they are left to guess the meanings.³ Second, a large number of kanji characters are used in contemporary Japanese.⁴ Thus, as decoders of kanji, non-native learners who know the characters in their L1 have a great advantage over those who do not in comprehending Japanese texts in general.⁵

Research on L1 transfer shows the advantage of beginning learners of Japanese with a background in kanji over those learners without such a background, in recognizing kana words (words written in Japanese syllabic scripts) and kanji words (words written in kanji) (Chikamatsu 1996; Koda 1989) as well as in storing artificial characters in short term memory (Mori 1998).⁶ Although it is not clear whether the role of kanji knowledge transfer is always positive (Hatasa 1992; Ishida 1986; Matsunaga 1999), it is true that in intermediate and advanced Japanese classrooms, teachers often face two types of gaps: one in speaking skills between the heritage learners and non-heritage learners, and the other in kanji decoding skills between learners with a background in kanji and those without one.

Research on Japanese heritage learners at the college level is only emerging. No research seems to have been published comparing the performances of heritage learners of Japanese with those of non-heritage learners, with or without a background in kanji. Studies have been conducted on biographical variables (such as the duration length of attendance in Japanese school) that correlate with Japanese oral proficiency (Koshiyama and Shibata 2000), and motivational factors (e.g., self-efficacy) that account for continued study of Japanese beyond the college-level foreign language requirement (Kondo 1999). In addition to what has been learned in these studies, it is important to understand where heritage learners stand in relation to other learners placed in the same class.⁷

The purpose of this paper is to report on a study comparing the oral skills and reading performance of heritage learners to those of the non-heritage learners. Three groups of students were tested: a heritage group, learners of Japanese who spoke Japanese at home and/or had gone to a Japanese school in the U.S.; a non-heritage group with extensive kanji knowledge in their L1 (the kanji group); and a non-heritage group without extensive kanji knowledge in their L1 (the non-kanji group).

It was hypothesized that the heritage group, having spoken the language longer than the other two groups, would outperform the other groups in oral skills. It was also hypothesized that the weakness of Japanese heritage learners would not be underdeveloped reading proficiency but insufficient knowledge of kanji. The second hypothesis was based on the premise that kanji decoding skills are not the same as true reading skills (Jordan 2002; Unger 2001).⁸ It was also based on the results of Matsunaga's study (1999) which showed that while the strength of the kanji group lay in kanji decoding skills, those who relied heavily on their L1

rather than Japanese for the pronunciation of kanji were not efficient readers of a Japanese text with a fewer number of kanji, and had weaker oral skills than those who knew the Japanese pronunciation of kanji words. As Matsunaga (1999) suggested, the kanji group's kanji decoding skills do not always seem to work to their advantage; knowledge of the Japanese pronunciation of kanji and oral proficiency appear to be necessary to become proficient readers of Japanese.⁹

If, as often assumed, the heritage group possesses a high level of oral proficiency (i.e., if the first hypothesis is supported), it is then reasonable to expect the second hypothesis to be supported; if the heritage group knows most of the Japanese pronunciations of kanji words in a text, they can read the text efficiently, being able to apply their oral skills smoothly. However, when there are many words written in kanji whose pronunciations and meanings are unknown to them, their comprehension suffers, due to their inability to apply their oral skills. Thus, the present study tested two hypotheses by assessing the three groups' ability to read two texts: one with, and the other without, a large number of kanji.¹⁰ The method and results of the study are described in the next two sections of this paper.

METHOD

Participants

The participants were 40 intermediate and advanced students of Japanese who had taken at least two years of Japanese language instruction at the college level, and who were enrolled in third- and fourth-year level courses. Twenty participants were male and 20 were female, and the average age was 29 ($SD = 12$). Their native or dominant languages were English (22), Chinese (12), Spanish (3), Korean (2), and Thai (1).

Materials

Three reading passages were chosen from *Basic Kanji Book*, Volume 2 (Kano et al. 1992), an intermediate-level textbook, which the participants had not read before. A personal letter (29) was used for the practice session; a narrative passage about a little girl and her grandmother (192) and a descriptive passage about Narita Airport (171) were used for the experimental session. The descriptive passage contained more kanji (36.14% of 285 letters) than the narrative passage (24.61% of 520 letters),¹¹ and contained more Sino-Japanese words (24) than the narrative passage (15).¹² All passages were retyped without a gloss.

In addition to the passages, a vocabulary sheet, a questionnaire, and a passage-rating sheet were prepared. The vocabulary sheet contained most

vocabulary items except for particles and conjunctions. The participants were asked, before the practice session, to circle the words they did not know,¹³ allowing the investigator to compare the kanji knowledge of each group of participants. The questionnaire asked for information about the participants' backgrounds, and the passage rating sheet allowed the investigator to rate the text difficulty felt by the participants. Both the questionnaire and the passage-rating sheet were given to the participants upon completing the experimental session.

Procedure

Participants were tested individually. First, the investigator gave them a list of vocabulary that would appear in the passages that they were about to read, and asked them to circle the items whose meanings they did not know. Then the investigator gave them an oral interview in Japanese. Participants were asked to describe a family shown in a picture, whose information (e.g., marital status) was provided in English in the form of balloons.¹⁴ The interview was tape-recorded with their consent, and later evaluated by the investigator, who scored them based on accuracy and communicativity. The scoring method is described in the next section of the paper.

Both a practice session and an experimental session were held. For each session, the participants and the investigator discussed in English a topic similar to the one covered in the practice passage. The participants were then asked to reread the passage orally at intervals of their choice (e.g., after reading each sentence, paragraph, or the entire passage)¹⁵. All sessions were tape-recorded. This procedure was repeated in the experimental session, while the order of the two experimental passages was alternated for each participant. The experiment required about an hour for each participant.

RESULTS

One participant, a native reader of Chinese, was eliminated from the study because her English proficiency was not high enough to be able to give English equivalents for the meanings of the passages. Among the 39 remaining participants, 14 were heritage speakers of Japanese (the heritage group), 11 were native speakers of Chinese with a background in kanji, (the kanji group), and 14 were non-heritage speakers without kanji background (the non-kanji group).¹⁶ Table 1 shows their background data (years of Japanese language instruction, of Japanese spoken at home, and of residence in Japan) as well as the number of kanji in each passage whose meanings they did not know.

Table 1

Background Data of Heritage Group, Kanji Group, and Non-kanji Group;
Knowledge of Kanji in Narrative and Descriptive Passages

	Heritage (n=14)	<u>Group</u> Kanji Group (n=11)	non-Kanji Group (n=14)
<u>Background Data</u>			
<u>Years of Japanese Instruction</u>			
<u>M</u>	8.17	3.59	3.85
<u>SD</u>	4.91	1.11	1.35
<u>Years of Japanese Spoken at Home</u>			
<u>M</u>	19.41	0.22	0.14
<u>SD</u>	6.45	0.75	0.53
<u>Years of Residence in Japan</u>			
<u>M</u>	1.39	0.09	1.03
<u>SD</u>	2.48	0.30	2.34
<u>Number of Kanji Unknown</u>			
<u>Narrative Passage</u>			
<u>M</u>	5.64	0.36	15.14
<u>SD</u>	4.44	0.67	7.73
<u>Descriptive Passage</u>			
<u>M</u>	11.85	0.54	15.71
<u>SD</u>	8.27	0.82	5.38

As indicated in Table 1, the heritage speakers who had gone to Japanese school had received the most Japanese language instruction (8.17 years) among the three groups of participants, $F(2, 36) = 9.104$, $p < .001$, while there was no significant difference between that of the kanji group (3.59 years) and that of the non-kanji group (3.85 years) ($p = .8335$). The heritage group also spent the longest time speaking Japanese at home (19.41 years) among the three groups, $F(2, 34) = 108.918$, $p < .0001$, while no significant difference was found between the other two groups (0.22 years for the kanji group; 0.14 years for the non-kanji group) ($p = .9553$). In terms of the time spent in Japan, there was no significant

difference among the three groups (1.39 years for the heritage group; 0.09 years for the kanji group; 1.03 years for the non-kanji group) ($p = .5044$).

Table 1 also indicates that in both passages, fewer kanji characters were unknown to the kanji group (0.36 in the narrative passage; 0.54 in the descriptive passage) than to the other two groups, $F(2, 36) = 24.695$, $p < .0001$ (narrative), and $F(2, 36) = 21.044$, $p < .0001$ (descriptive). The difference between the heritage group (5.64) and the non-kanji group (15.14) for the narrative passage was significant at $p < .0001$, while the difference between the former group (11.85) and the latter group (15.71) for the descriptive passage was not significant ($p = .0948$). These results indicate that the kanji group indeed had extensive knowledge of kanji gained in their L1. The other two groups lacked similar knowledge although the heritage group, who had started to learn Japanese in childhood, appears to have had somewhat stronger kanji knowledge (as shown in their reading of the narrative passage) than the non-kanji group, who began their study of Japanese in high school or college. On the average the heritage group knew the meanings and pronunciations of more than 95% of the kanji in the narrative passage, and less than 90% of the kanji in the descriptive passage. On the other hand, the kanji group knew the meanings of more than 99% of the kanji in both passages, while only 4 out of 11 knew the Japanese pronunciations of more than 90% of the kanji in both passages.¹⁷

Next, oral scores, reading comprehension, and reading speed were compared among the three groups, and the results are presented in Table 2.

Table 2

Comparison of Oral and Reading Performances by the Heritage Group, the Kanji Group, and the Non-kanji Group

	<u>Group</u>		
	Heritage (n=14)	Kanji Group (n=11)	non-Kanji Group (n=14)
<u>Oral Scores</u>			
<u>M</u>	94.00	77.09	75.42
<u>SD</u>	5.08	15.42	11.67
<u>Narrative Passage</u>			
<u>Comprehension</u>			
<u>M</u>	90.68	89.00	67.51
<u>SD</u>	6.67	6.19	15.49
<u>Reading Time(s)</u>			
<u>M</u>	210.85	234.00	456.21
<u>SD</u>	107.11	169.30	179.14
<u>Descriptive Passage</u>			
<u>Comprehension</u>			
<u>M</u>	69.23	85.47	52.87
<u>SD</u>	21.56	11.32	18.01
<u>Reading Times(s)</u>			
<u>M</u>	189.85	129.27	326.78
<u>SD</u>	105.02	59.79	115.99

Oral Scores

Participants' oral performance was rated by assigning a maximum of 20 points in each of five categories: pronunciation, appropriate use of vocabulary, grammatical accuracy, naturalness, and communication.¹⁸ The scoring was intended to assess the participants' abilities to communicate in Japanese in a linguistically accurate and sociolinguistically appropriate manner. The mean oral scores were: 94.00 for the heritage group, 77.09 for the kanji group, and 75.42 for the non-kanji group. The one-way Analysis of Variance (ANOVA) showed a significant group effect, $F(2, 36) = 11.528$, $p < .0001$. The Fisher's PLSD further

indicated that the difference between the heritage and the kanji groups, and the difference between the heritage and the non-kanji groups were significant at $p < .001$ and $p < .0001$, respectively; no significant difference was found between the kanji group and the non-kanji group ($p = .7139$).

Reading Comprehension

The participants' reading comprehension was scored by calculating the percentage of the correct English equivalents given for the meaningful phrases of each passage.¹⁹ With the exception of one participant whose data were excluded, all participants seemed able to provide English equivalents for the parts of the passages that they understood. Thus, English proficiency is not likely to affect comprehension scores significantly. The mean comprehension score for the narrative passage was 90.68 for the heritage group, 89.00 for the kanji group, and 67.51 for the non-kanji group. The one-way ANOVA showed a significant group difference, $F(2, 36) = 19.993$, $p < .0001$. The Fisher's PLSD further indicated a significant difference between the heritage group and the non-kanji group at $p < .0005$, as well as between the kanji group and the non-kanji group at $p < .001$. As for the descriptive passage, the mean comprehension score was 69.23 for the heritage group, 85.47 for the kanji group, and 52.87 for the non-kanji group. The one-way ANOVA showed a significant group difference, $F(2, 36) = 10.253$, $p < .0005$. The Fisher's PLSD further indicated a significant difference among each of the three pairs; the kanji group outperformed both the heritage group and the non-kanji group at $p < .05$ and $p < .0001$, respectively, and the heritage group outperformed the non-kanji group at $p < .05$.

Reading Time

For the narrative passage, the average reading time for the heritage group was 210.85 seconds, for the kanji group 234.00 seconds, and for the non-kanji group 456.21 seconds. As for the descriptive passage, the average reading time for the heritage group was 189.85 seconds, that for the kanji group was 129.27, and that for the non-kanji group was 326.78. For both passages, the one-way ANOVA showed significant group differences, $F(2, 36) = 11.148$, $p < .0005$ (narrative), and $F(2, 36) = 13.359$, $p < .0001$ (descriptive). The Fisher's PLSD further indicated that for both passages, the non-kanji group was slower than the heritage group ($p < .0005$ [narrative]; $p < .001$ [descriptive]) and the kanji group ($p < .001$ [narrative]; $p < .0001$ [descriptive]), while there was no significant difference between the heritage group and the kanji group ($p = .7112$ [narrative]; $p = .1382$ [descriptive]).

Text Difficulty

The final data analyses involve comparisons of the text difficulty for the three groups of participants. Table 3 shows the group means of the ratings (from 1 [not at all difficult] to 4 [very difficult]) for the two passages. For both passages, the one-way ANOVA indicated significant group differences, $F(2, 36) = 6.290$, $p < .005$ (narrative), and $F(2, 36) = 13.463$, $p < .0001$ (descriptive). The Fisher's PLSD further indicated that for the narrative passage, the non-kanji group felt significantly greater difficulty than the heritage group ($p < .005$) and the kanji group ($p < .05$), while there was no significant difference between the heritage group and the kanji group ($p = .3836$). For the descriptive passage, both the non-kanji group and the heritage group felt significantly greater difficulty than the kanji group ($p < .0001$ in both cases). On the other hand, the difficulty ratings given by the non-kanji group and the heritage group were identical (3.571) for the descriptive passage.

Table 3

Comparison of Text Difficulty Felt by the Heritage Group, the Kanji Group, and the Non-kanji Group: Mean Values of the Ratings from 1 (Not at All Difficult) to 4 (Very Difficult)

	<u>Group</u>		
	Heritage (n=14)	Kanji Group (n=11)	non-Kanji Group (n=14)
<u>Narrative Passage</u>			
<u>M</u>	1.92	2.18	2.85
<u>SD</u>	0.73	0.63	0.77
<u>Descriptive Passage</u>			
<u>M</u>	3.57	2.36	3.57
<u>SD</u>	0.51	0.80	0.64

DISCUSSION

The results of the oral test supported the first hypothesis that the heritage group would outperform the other two groups. This is understandable given that they had been speaking Japanese at home and had received Japanese language instruction for longer than the other groups. The present study provided the first

empirical evidence in support of the common assumption that oral proficiency is the strength of Japanese heritage learners.

The second hypothesis was also supported; although the heritage group's comprehension of the descriptive passage was not as high as that of the kanji group, their reading speed of this passage was equal to that of the kanji group. Moreover, when they read the narrative passage with a lower percentage of kanji, their comprehension as well as their reading speed were the same as the kanji group's. Their poorer comprehension of the descriptive passage with a higher percentage of kanji seems to reflect their weaker kanji knowledge compared with that of the kanji group (as seen in Table 1). Not surprisingly, the heritage group felt significantly greater difficulty than the kanji group with the descriptive passage, but not with the narrative passage (as seen in Table 3).²⁰

The finding of the present study showed that heritage learners' reading proficiency was not low; it was in fact significantly higher than that of the non-kanji group in both passages. Moreover, the data on the narrative passage indicate that heritage learners could apply their oral skills to reading smoothly as long as they knew most of the kanji in the text. Their situation is similar to that of Japanese native speakers learning to read, in that they acquire the spoken language first, and then learn to apply that acquired knowledge to the reading of kanji.²¹ In this regard, it seems reasonable to assume that Japanese heritage learners could become true readers of Japanese (Jordan 2002; Unger 2001) if they gain sufficient kanji knowledge. In other words, knowing the language, they could learn to subvocalize the Japanese sounds represented by kanji like native readers of Japanese do (Matsunaga 2001).

Japanese heritage learners at the intermediate and advanced levels appear to need extensive kanji instruction. As the results of the study indicate, however, not all three groups have the same need for kanji instruction, and it might be offered separately from or in addition to the regular instruction provided for all three groups together in the same classroom. The kanji group was found to be weak in oral performance, while being strong in reading performance.²² The oral skills of the non-kanji group and those of the kanji group were equally weak; the non-kanji group's reading skills were the weakest of the three groups, and they felt great difficulty while reading both passages. The instructional needs of these groups can be satisfied only by strengthening these different areas.

CONCLUSION

One way to meet the different needs of the three groups of students during the class would be to engage them in activities organized by group (e.g., oral practice for the kanji group, kanji reading practice for the heritage group, and both for the non-kanji group), perhaps assigning group leaders to help the teacher

monitor activities. Collaborative activities can also be assigned, such as writing a group report based on oral interviews or written surveys done by group members followed by a group presentation to the entire class. Separate tests for the groups could also be administered based on these assignments, allowing the teacher to monitor skills improvement.

Technology could also be used to tailor instruction to students' needs. Reading and writing assignments, as well as kanji exercises, can be done using e-mail and Internet resources. For example, a pair or group of students could collect travel information on Japanese Web sites (reading exercises), and plan a trip using e-mail in Japanese (writing exercises). They could then present their plan orally to the rest of the class (speaking exercises). Kanji exercises could also be assigned to the heritage group and to the non-kanji group.²³ Using technology this way would allow students to focus on the improvement of the needed skill at their own pace, and independent assignments would encourage more autonomous and independent learning.²⁴

In closing, it should be pointed out that replications of the present study are necessary and should incorporate enhancements. One is to increase the number of participants to strengthen the data. Second, the research methodology can be objectified by having more than one evaluator of the participants' oral and reading performances, and by checking the evaluators' reliability.²⁵ Third, a different way of evaluating reading comprehension can be employed to verify the results.²⁶ Fourth, different types of reading materials with differing number of kanji can be used.²⁷

WORKS CITED

- Chikamatsu, Nobuko. "The Effects of L1 Orthography on L2 Word Recognition: A Study of American and Chinese Learners of Japanese." *Studies in Second Language Acquisition* 18 (1996): 403-432.
- DeFrancis, John. *The Chinese Language: Fact and Fantasy*. Honolulu: University of Hawaii Press, 1984.
- Douglas, Masako. *A Practical Guide to Learning Kanji: For Learners from an Alphabetic Background*, 2nd ed. Boston: The McGraw-Hill Companies, 2001.
- . "Teaching Japanese as a Heritage Language at College Level: An Individualized Curriculum and Evaluation of Its Effect." Presentation at the Teaching Japanese as a Heritage Language in Southern California Symposium, Santa Monica, 2001.
- Dumitrescu, Domnita. "Addressing the Needs of Heritage Speakers." Presentation at the Second Language Pedagogy Symposium, California State University, Los Angeles, 2000.

- Hatasa, Yukiko. "Transfer of the Knowledge of Chinese Characters to Japanese." Ph.D. diss., University of Illinois, Urbana-Champaign, 1992.
- Ishida, Toshiko. "Eigo, Chûgokugo, Kankokugo-ken betsu Nihongo gakuryoku no bunseki" (The Analysis of the Japanese Language Proficiency of English, Chinese and Korean Students). *Nihongo kyôiku* 2 (1986): 162-194.
- Ito, Kikuko. "Keisei-moji to kanji-shido" (Phonetic kanji and kanji instruction). *Gengo seikatsu* 326 (1979): 68-79.
- Jorden, Eleanor H. "Teaching Johnny to Read Japanese: Some Thoughts on Chinese Characters." *Difficult Characters*. Ed. M. S. Erbaugh, 92-104. Columbus: National East Asian Languages Resource Center, 2002.
- Kano, Chieko, Yuri Shimizu, Hiroko Takenaka, and Eriko Ishii. *Basic Kanji Book*, vol. 2. Tokyo: Bonjinsha, 1992.
- Kataoka, Hiroko. "National Standards in Japanese Classrooms at the High School and College Levels." Presentation at the Teachers of Japanese in Southern California Fall Workshop, Santa Monica, 1997.
- Ke, Chuanren. "Effects of Language Background on the Learning of Chinese Characters among Foreign Language Students." *Foreign Language Annals* 31 (1998): 91-100.
- Kess, Joseph F., and Tadao Miyamoto. *The Japanese Mental Lexicon: Psycholinguistic Studies of Kana and Kanji Processing*. Philadelphia: John Benjamins, 1999.
- Koda, Keiko. "The Effects of Transferred Vocabulary Knowledge on the Development of L2 Reading Proficiency." *Foreign Language Annals* 22 (1989): 529-540.
- Kondo, Kimi. "Motivating Bilingual and Semibilingual University Students of Japanese: An Analysis of Language Learning Persistence and Intensity among Students from Immigrant Backgrounds." *Foreign Language Annals* 32 (1999): 77-88.
- Koshiyama, Yasuko, and Setsue Shibata. "An Ethnographic Study of Speakers of Heritage Japanese." Presentation at the Teachers of Japanese in Southern California Fall Workshop, Santa Monica, 2000.
- Matsunaga, Sachiko. "The Role of Kanji Knowledge Transfer in Acquisition of Japanese as a Foreign Language." *Japanese-Language Education Around the Globe* 9 (1999): 87-100.
- . "Subvocalization in Reading Kanji: Can Japanese Text Be Comprehended Without It?" In *Advances in Japanese Language Pedagogy*, edited by H. Nara, 30-46. Columbus: National East Asian Languages Resource Center, 2001.
- . "Early Phonological Activation in Reading Kanji: An Eye-Tracking Study" In *Cognitive Neuroscience Studies of the Chinese Language*, edited by

- H.S.R. Kao, C.K. Leong, and D.G. Gao, 157-71. Hong Kong: Hong Kong University Press, 2002.
- Mori, Yoshiko. "Effects of First Language and Phonological Accessibility on Kanji Recognition." *The Modern Language Journal* 82 (1998): 69-82.
- Nomura, Masaaki. "Jôyô kanji no on-kun" (On-Kun Statistics for the Jôyô Kanji). *Keiryô kokugogaku* 12 (1980): 27-33.
- . "Kanji no tokusei o hakaru: Kanji no keiryô kokugogaku" (Measuring the Characteristics of Kanji: Mathematical Linguistics and Kanji). *Kanji o kagaku suru*. Ed. H. Kaiho. Tokyo: Yuhikaku, 1984. 1-34.
- Schneider, Keiko. "The Kanji SITE." *Keiko Schneider's Bookmarks*. 22 June 2002. <<http://www.sabotenweb.com/bookmarks/>> (28 June 2002).
- Shimamura, Naomi. "Kanji no shutokuritsu: Haito kanji ni yoru chigai" (Acquisition Rates of Kanji by School Children: Differences in Kanji by Grade Level). *Keiryô kokugogaku* 17 (1990): 273-79.
- Unger, James M. "The First Framework: Getting Down to Basics." *Advances in Japanese Language Pedagogy*. Ed. H. Nara. Columbus: National East Asian Languages Resource Center, 2001. 336-428.

NOTES

¹In the case of Japanese, Douglas (2001b) mentions underdeveloped formal register and stylistic difference in oral and written language as additional weaknesses; however, these appear to be problematic areas for non-heritage learners as well.

²There are three types of characters used to write Japanese: hiragana, katakana, and kanji. Hiragana and katakana (two types of kana) are syllabic scripts derived from kanji. Hiragana are used for writing grammatical inflections, particles, many high-frequency words, and many native proper nouns (e.g., names of vegetables); katakana are used for writing Western loanwords and emphasized words (cf. italics in English). There are 46 basic symbols in both types of kana (plus one special symbol to indicate a repeated vowel in katakana) and two diacritics. Japanese sentences are normally written in a mixture of these two types of kana, together with kanji.

Kanji are Chinese characters that were borrowed from China, though some were created in Japan. Kanji are used to write Sino-Japanese words (Chinese

loanwords) as well as Japanese native words, and almost all of them have multiple readings. The number of kanji taught in nine years of compulsory education in Japan is 1,945. Since the majority of these kanji originate from China, native readers of Chinese are familiar with many of the characters used in Japanese texts, although virtually all of the pronunciations and some of the meanings are different from Chinese.

³The majority of Chinese characters are phonetic compounds (DeFrancis, 1984; Ito, 1979), each of which consists of a semantic element (indicating the semantic category to which the meaning of the whole character belongs) and a phonetic element (indicating the exact pronunciation of or similar pronunciation to the whole character [in Sino-Japanese words in the case of Japanese]). It has been argued that knowing the latter element is more useful in guessing the meaning of the whole character (DeFrancis, 1984).

⁴According to Nomura (1984, cited in Kess and Miyamoto 1999), just over 3,000 kanji are typically used in contemporary magazines and newspapers.

⁵In college curricula, hiragana and katakana are typically taught first, and kanji are gradually introduced. For example, according to the survey data collected by the Teachers of Japanese in Southern California (TJSC) in 1998, on the average 370 kanji (varying from 200 to 640) are introduced in the first two years of Japanese language instruction in nine community colleges and seven universities in the region. The calculation is based on the survey results made available at the TJSC Fall Workshop held in Santa Monica, CA in November 1998.

⁶Chikamatsu (1996) tested her hypothesis that the recognition strategies of Japanese kana words used by native speakers of Chinese and English would differ due to the difference in the type of their L1 orthography; Chinese speakers, being “logographic readers,” would rely more on visual information than English speakers who are “alphabetic readers” (412). The results supported her hypothesis, indicating that the transfer of script processing strategies from L1 occurs when learning to read Japanese kana words. Similar results were obtained by Mori (1998), whose data indicated different strategies employed by learners of Japanese with and without a background in kanji for storing artificial characters in short-term memory, and also by Koda (1989), whose data showed the advantage of beginning learners of Japanese with kanji background, over those learners without kanji background, in recognition of kana words and kanji words.

⁷Ke (1998) investigated the effects of language background (heritage versus non-heritage) on the success in kanji recognition and production tasks by first-year college learners of Chinese from seven different institutions. The results showed that language background did not influence either group's performances, but institutional differences did. Given that in this study, the participants were beginning level students, data are needed from students at the intermediate and advanced levels.

⁸Both Jordan (2002) and Unger (2001) argue that kanji decoders are translators of the kanji in a text into their native language, without reference to the Japanese sounds represented by the script; on the other hand, true readers of Japanese, knowing the language, can subvocalize the Japanese sounds represented by the script. Matsunaga's (2002) study suggests that skilled native readers automatically subvocalize sounds when reading kanji for comprehension. For detailed discussion on the issue of subvocalization in L1 and L2, see Matsunaga (2001).

⁹Matsunaga (1999) found the oral skills of intermediate and advanced learners of Japanese to be highly correlated with their reading skills (comprehension and reading time) and their ability to guess the meanings of unknown kanji words from the context.

¹⁰The two texts also differed in grammatical complexity and written style: the passage with a greater number of kanji words was grammatically more complex and written in a non-vernacular style. However, since both texts were taken from an intermediate-level textbook, their grammatical or stylistic difficulty would be minor, and would exist for all three groups (who have received an equal amount of college-level Japanese instruction beyond the beginning level) to a similar extent. Thus, it was assumed in the present study that this type of difficulty would not play a major role in differentiating the three groups' reading performances.

¹¹According to Nomura (1980, cited in Kess and Miyamoto 1999), the ratio of kanji to kana in publications for general readership is about 29.7%, which falls between the kanji ratio of 36.14% in the descriptive passage and 24.61% in the narrative passage.

¹²The fact that there were more Sino-Japanese words (i.e., loan words from Chinese) in the descriptive passage means that it would be easier for the kanji group to understand their meanings and to comprehend the passage.

¹³Thirty-eight out of 43 vocabulary words on the list to accompany the descriptive passage kanji words; fifty-five out of 61 words on the narrative passage list were kanji words.

¹⁴This method was used because the description of the same material made it easier for the investigator to assign scores relative to their performances.

¹⁵The purpose of the oral reading was for the investigator to observe the extent to which the participants knew the Japanese pronunciations of the kanji words in the passages. The English equivalents were provided for the investigator to check their comprehension.

¹⁶The two Korean participants were included in the non-kanji group because they did not learn a sufficient number of Chinese characters in Korea. In fact, like other members of the non-kanji group, they knew fewer than 15 kanji words in each of the texts. However, they were proficient readers of the Korean Hangeul alphabet.

¹⁷ Japanese pronunciation of the kanji words was observed when the participants read passages aloud.

¹⁸These constructs were developed by a group of teachers of Japanese (led by a pedagogy specialist) for individual instructors to test their students' oral performances in Japanese language courses at an American university. There is no authorship. "Appropriate use of vocabulary" includes the use of *keigo* (honorific language). "Naturalness" includes the use of fillers and *aizuchi* (signaling that the listener is listening). "Communication" means whether and how severely communication breakdowns occurred. In each construct, one of the 4, 8, 12, 14, 16, 18, 20 points (ranging from "poor" to "native-like" performances) was assigned for scoring.

¹⁹For example, for a sentence meaning "It rains a lot every day," 3 points were assigned: 1 point each for "it rains," "a lot," and "every day." For a sentence meaning "The New International Airport is located in Narita, Chiba, and also called Narita Airport," 6 points were assigned: 1 point each for "The New International Airport," "is located," "in Narita, Chiba," "(and) also," "called," and "Narita Airport." The proportion of the points for the correct English equivalents given by each participant was then calculated for each passage.

²⁰While one may wish to argue that grammatical or stylistic difficulty might have played a significant role in the poorer comprehension by the heritage group in reading the descriptive passage, it should be noted that the passage difficulty was felt by all three groups (i.e., the rating was higher than the narrative passage), and the kanji group outperformed the heritage group. Thus, it seems reasonable to argue that differing knowledge of kanji is a main factor in distinguishing the comprehensions of this passage by the kanji group and the heritage group, and that the heritage group experienced greater difficulty than the kanji group because of their insufficient kanji knowledge.

²¹According to Shimamura (1990, cited in Kess and Miyamoto 1999), in Japan, 76 kanji are taught in Grade 1, 145 in Grade 2, 195 in Grade 3, 195 in Grade 4, 190 in Grade 6, and the rest of the 1,945 *Jōyō Kanji* (the ‘List of Kanji for Daily Use’ promulgated in 1981) in junior high school.

²²As shown in Table 1, this could be due to their extensive kanji knowledge gained in their L1, for they outperformed the non-kanji group, whose oral skills were found to be equal to theirs. Their strength in reading performances, however, needs to be taken with caution, for it appears to come from their kanji decoding skills rather than true reading skills, which require oral proficiency and knowledge of the pronunciation of kanji words (Matsunaga 1999). For this group, the more kanji there are in the text (the descriptive passage), the easier it is to comprehend, presumably because knowledge of the target language (reflected in oral skills) is needed less. It would be interesting to see how the kanji group would perform when reading a passage without kanji. Further studies are necessary in this regard.

²³There are various kinds of kanji exercises on the Internet as well as computer software. See, for example, a list of computer programs in Douglas (2001a) and “The Kanji SITE” on Keiko Schneider’s Bookmarks at <<http://www.sabotenweb.com/bookmarks/>>.

²⁴Douglas (2001b) found positive results from heritage learners of Japanese in doing independent exercises. Autonomy in language learning is also encouraged in the National Standards (Kataoka 1997).

²⁵During the year in which the data from the present study were collected, seven of the participants had separate ACTFL OPIs with a certified instructor. When the results were converted into scores (i.e., 70 for Novice Low, 75 for Novice, 80 for

Intermediate Low, 85 for Intermediate, and 95 for Advanced), they were found to correlate highly with the oral scores used for the present study ($r = .9$).

²⁶The summaries given by the present study's participants after silent readings of the passages were not analyzed because it became a memory task. In fact, some of the participants said, "I do not remember." A confounding factor such as the ability to memorize is best avoided.

²⁷It seems particularly important to select passages with structural complexities and written styles being controlled or being independent variables. In this study, they were not treated as independent variables, for it was unlikely that the heritage group did not know the grammar and written styles as much as the kanji group (who had studied Japanese for a considerably shorter period of time than the heritage group). Kanji knowledge, on the other hand, appeared to affect reading skills, which could best explain why the kanji group outperformed the heritage group when reading the descriptive passage. It is of course important to examine possible effects of these non-kanji factors on reading performances of all groups in future studies.