THE INVESTIGATION OF LEARNING STRATEGIES OF AMERICAN LEARNERS OF CHINESE AND JAPANESE FOR CHARACTER LEARNING

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Abstract. It has been widely recognized that Chinese and Japanese languages are exceptionally difficult to learn. One of the reasons is their logographic characters (i.e. hanzi in Chinese, kanji in Japanese) that are extremely different from alphabet-based orthography (Tong & Yip, 2015; Xu & Padilla, 2013). Accordingly, there have been research investigating how L2 learners of Chinese and Japanese deal with the difficulty by exploring learners' strategy (Gamage, 2003; Shen, 2005). However, learning strategies for a certain aspect of characters (i.e. shape, sound) have not been investigated as much as learning strategies in general (but see Shen, 2005). In addition, there are limited longitudinal research exploring how learners change their strategies. Therefore, the researchers investigate strategies that L2 learners of American university students are using most frequently for Chinese and Japanese character learning. The study had 66 L2 learners taking either Chinese or Japanese course at an American university. They took a questionnaire at the beginning and at the end of a semester. It was found that reading, context, decomposition, rote-writing, and listening were the most frequently used strategies. Moreover, the results indicated that strategies vary depending on which aspect of characters they learn. Furthermore, learners did not change their learning strategies over three months to a notable extent.

Keywords: *Chinese as a foreign language, Japanese as a foreign language, hanzi, kanji, learning strategy.*

Таїчі Ямашіта, Гсіао Гсуан Гунґ. Основні стратегії вивчення японського та китайського ієрогліфічного письма та їх відбір студентами, які вивчають китайську та японську як другу мову.

Анотація. Уважають, що китайська та японська мови є винятково складними в опануванні. Однією з причин такої складності є логографічні символи (китайське та японське ієрогліфічне письмо: ханьцзи та кандзі), які повністю відрізняються від алфавітів, що базуються на орфографії. Сьогодні вже є дослідження, що присвячені з'ясуванню особливостей відбору стратегій опанування мови студентами, які вивчають китайську або японську в якості другої мови. Проте характеристиці відбору стратегій навчання конкретних символів було приділено недостатньо уваги. Крім цього, існує досить мало досліджень, які присвячено спостереженню відбору стратегій опанування мови студентами. Тому в цьому дослідженні схарактеризовано найчастіше використовувані стратегії та вивчено зміни відбору цих стратегій протягом трьох місяців навчання. У дослідженні взяло

участь 66 студентів, які вивчають китайську або японську як другу мову в одному з університетів США. Вони пройшли анкетне опитування на початку і в кінці семестру. Було встановлено, що читання, контекст, декомпозиція, механічне запам'ятовування та слухання є найбільш поширеними стратегіями. Було також виявлено, що вибір стратегії залежить від того, який аспект знаків вони вивчають. Суттєвих змін у виборі цих стратегій упродовж трьох місяців не зафіксовано.

Ключові слова: *японська як друга мова, китайська як друга мова, китайське ієрогліфічне письмо, японське ієрогліфічне письмо, ханьцзи, канджі, стратегії вивчення мови.*

1. Introduction

Recently, Chinese and Japanese languages are drawing American university students' attention because of the blooming economy in China and Japan. Modern Language Association (MLA) Enrollment Database shows that the number of people learning Chinese in the U.S. was 34,153 in 2002, and the number approximately doubled in 2013. Regarding the number of learners of Japanese in the U.S., it has also been on increase since 2002, and the number was reported to be 66,740 in 2013. However, as compared to the other languages, such as Spanish and French, Chinese and Japanese are exceptionally difficult for American learners. In fact, Foreign Service Institute (FSI) of the U.S. Department of State has categorized Chinese and Japanese into Category III, which is harder than the rest of categories.

The backgrounds mentioned above motivated many researchers to investigate what is primarily responsible for such difficulty. According to previous studies, many researchers stated that hanzi and kanji are the most difficult in learning Chinese (e.g. Xu & Perfetti, 2010) and Japanese (e.g. Everson, 2011) respectively. Hanzi consists of logographic characters that compose the Chinese writing system, while kanji is one of the Japanese writing systems, which is partly shared with hanzi because it was originally transported from China in the past. It has been widely recognized that the difficulty of the two languages can be attributed to the huge difference in nature between the logographic characters and alphabetic orthography (e.g. Everson, 1998; Gamage, 2003; Liskin-Gasparro, 1982; Mori et al., 2007; Packard, 1990; Shen, 2005; Ton & Yip, 2015; Xu & Padilla, 2013). In fact, Yuki's (2009) survey showed all the participants but one with no logographic background reported that kanji was difficult.

Furthermore, quite a few studies have been implemented to explore how learners perceive and learn hanzi or kanji (e.g. Haye, 1988; Ke, 1998; McGinnis, 1999; Rose, 2013; Shen, 2005; Tseng, 2000). For instance, McGinnis (1999) found that rote-repetition was the most frequently used strategy among learners of Chinese. In addition, Rose (2013) stated that mnemonics helps in memorizing kanji and kanji components.

The present study uses a questionnaire to examine how learners of Chinese and Japanese learn hanzi or kanji. Exploring this field will enable language instructors to capture why learners have difficulties in learning those characters, how they are trying to overcome them, and to suggest employing a better strategy.

2. Literature Review

Hanzi Learning

Among the previous studies, McGinnis (1999) collected the data from 29 Chinese learners' reports about their strategies in an immersion program. The results showed that there were mainly seven strategies used by the participants, and rote-repetition was the most frequently used followed by the creation of their own idiosyncratic stories about characters. While the author stated that beginners do not consider the orthographic knowledge useful, Ke (1998) stated that knowledge of radicals (i.e. components of a character), which is a part of orthographic knowledge, was more useful than the creation of a story. Furthermore, Shen's (2005) study, where 95 non-native speakers of Chinese participated, revealed that students tended to use cognitive strategies that (1) require orthographic knowledge as cues, (2) create mental association among sound, shape, and meaning, (3) employ both aural-oral cues and writing information about a new character when it is introduced, (4) focus on the sound as cues to make connections to meaning and shape, and (5) seek various avenues to explore how a new character functions. Moreover, she found that the most commonly used strategy from beginning courses through advanced courses was the orthographic knowledge-based cognitive strategies followed by metacognitive strategies (e.g., preview of characters). A recent study conducted by Xu and her colleagues (2014), where 48 beginning course students and 40 intermediate learners participated, found that radical knowledge (i.e. parts of a character) would be leading to better learning of characters for beginning learners. Besides, the authors implied that the perception on characters varies depending on learners' proficiency.

Kanji Learning

As for research on kanji learning, Chikamatsu (1996) found that advanced English learners of Japanese employed visual information when they retrieved how a character reads (aka, kana words). In addition, Gamage (2003) stated that analyses on the data from 116 learners in beginning courses revealed that repeated writing was the most used strategy type, and alphabetic background learners relied on the strategy more often than those with background of logographic characters. According to Yuki (2009), learners with prior experiences of studying kanji were found to use more various strategies (e.g., by kanji components, reading kanji in a context), though rote-repetition was the one used by the most participants, which was similar to the results from those with less prior experiences of studying kanji. To sum up, it has been reported that a variety of variables (e.g. first language, proficiency, prior learning experience) are influencing leaners' strategies.

Research questions

The present research investigated strategies that non-native speakers, specifically American university students, of Chinese and Japanese use for hanzi or kanji learning. Drawing on the past studies, the researcher formulated the following research questions;

RQ1: What are strategies that learners of Chinese and Japanese commonly use?
RQ2: How do strategies change over a semester (i.e. three months)?

The first research question will explore the general tendency of strategy use among American university learners of Chinese and Japanese. Since hanzi and kanji characters have multiple aspects to learn (e.g. shape, meaning, sound), it was hypothesized that learners' strategy would vary depending on which aspect they focus on. Regarding the second research question, since past studies indicated that proficiency influences learners' strategies (e.g. Xu et al., 2014), it was hypothesized that the present study would reveal similar tendency; that is, as learners get proficiency over three months, they were expected to use different strategies. There have been limited research that investigated strategies of the same learners at different points of time (i.e. longitudinal), and thus the present study was expected to fill this research gap.

3. Methods

3.1. Participants

Participants are those who were enrolled in either Chinese or Japanese course at a southern university in the U.S. In order to minimize the effects of moderator variables (e.g. exceptional proficiency), heritage learner and those with orthographic-based language background (e.g. Chinese learner of Japanese) were excluded from the study. Moreover, those who did not complete all the procedures were excluded. As a result, 66 participants (i.e. Beginning Chinese, N=16; Intermediate Chinese, N=8; Beginning Japanese, N=26; Intermediate Japanese, N=19) were included in the final data pool.

3.2. Instrument

The researchers adapted one of Shen's (2005) questionnaires. They redesigned the questionnaire taking into account the results of a pilot study they had administered before the present study. As a result, a questionnaire in the present study asked learners to pick up less than three strategies predetermined by the researchers (see Appendix). Afterwards, if they had any comments to add, they wrote them down.

4. The study

4.1. Data collection procedures

The participants took the questionnaire in class and turned it in to their instructors in class. They had time to ask a question if they found the questionnaire unclear. The instructors reported that it took approximately 20 minutes for the participants to finish the questionnaire at every administration. The participants took the questionnaire at the beginning of the semester (i.e. February) and the end of the semester (i.e. May) in 2016.

After the data collection, one of the researchers manually typed into a spreadsheet while the other researcher was reading them. Then, they found a strategy that was used most frequently by using mode function of Microsoft Excel. When there were more than one strategy that showed the most frequency, multiple strategies were chosen.

5. Results and discussion

5.1. Most frequently used strategies in February

The researchers asked what they did when an instructor introduced a new character at the first item. Beginners of Chinese reported that they used *reading* and *context* strategies most frequently, while intermediate students indicated that they employed *reading* and *listening* strategies. Those taking a beginners' course of Japanese used *writing* strategy, whereas intermediate students utilized *reading* strategy.

The researchers explored strategies that learners were relying on in order to increase their understanding of a character at the second item. The beginner students of Chinese stated that they utilized *context*, *writing*, and *rote-writing* strategies. The intermediate learners of Chinese reported that they used *reading* and *context* strategies. Regarding learners of Japanese, the beginners employed *reading* strategy, while the intermediate learners used *rote-writing* strategy.

Thirdly, the researcher tried to observe how learners were trying to analyze a character. All the courses used *decomposition* strategy most frequently. However, the beginners of Chinese used *rote-writing* strategy, and the intermediate students of Japanese harnessed *stroke order* strategy on top of *decomposition* strategy.

Next, the researcher tried to seek for a strategy that learners employed to memorize a character. The most frequently used strategy in all the courses was *rote-writing* strategy. In other words, no other strategy was utilized as much as *rote-writing* strategy.

The researchers investigated strategies that learners made use of in order to learn the sound of a character. Learners in both Chinese courses indicated that they used *listening* strategy most frequently. Meanwhile, the beginners and intermediate students of Japanese reported that they used *reading* strategy. In addition, the beginners relied on *listening* strategy as well.

The sixth item tried to reveal how students learned the shape of a character. The beginners and intermediate learners of Chinese stated that they utilized *stroke order* strategy. In addition, the beginners used *rote-writing* strategy in addition to the *stroke order* strategy. When it comes to learners of Japanese, learners in both courses reported that *decomposition* strategy was used most frequently, and only the beginners relied on *rote-writing* strategy as well.

The last item investigated strategies used for learning meaning of a character. Both Chinese courses indicated that they made use of *context* strategy. Learners of the beginning course of Japanese used *reading* strategy, whereas the intermediate students employed *context* and *visualization* strategy. Table 1 summarizes the results from the questionnaire administered at the beginning of the semester;

Table 1

Most frequently used strategies in February

	Beginning Chinese	**Intermediate Chinese**	**Beginning Japanese**	**Intermediate Japanese**
When a character is introduced	Reading Context	Reading Listening	Writing	Reading
To increase understanding	Context Writing Rote-writing	Reading Context	Reading	Rote-writing
To analyze	Rote-writing Decomposition	Decomposition	Decomposition	Decomposition Stroke order
To memorize	Rote-writing	Rote-writing	Rote-writing	Rote-writing
To learn a sound	Listening	Listening	Listening Reading	Reading
To learn a shape	Rote-writing Stroke order	Stroke order	Rote-writing Decomposition	Decomposition
To learn meaning	Context	Context	Reading	Context Visualization

As can be seen from the table, it is obvious that strategy use varies depending on to which aspect of a character learners pay attention. For instance, learners were more likely to rely on *rote-writing* strategy than *listening* strategy when they tried to memorize a character. Further discussion will be given later in this paper.

5.2. Most frequently used strategies in May

For the first item, both courses of Chinese reported that they were employing *reading* strategy, and only the beginners indicated that they were using *listening* strategy as well when an instructor introduced a new character. On the other hand, those who were in the beginning Japanese were utilizing *stroke order* strategy most frequently, while the intermediate learners stated that they were relying on *reading* strategy.

Secondly, the researchers asked how they were trying to increase understanding of a character. Only the beginners of Chinese revealed that they were employing *rote-writing* strategy. In the rest of the courses, it was found that *context* strategy was used most frequently.

Regarding the third item, the researchers explored how learners were trying to analyze a character, the results were quite similar to ones seen at the beginning of the semester. Those who were taking the beginning Chinese utilized *decomposition* strategy, while the intermediate learners were relying on *stroke order* strategy. Both courses of Japanese were making use of *decomposition* strategy, and only the intermediate learners reported that they were employing *stroke order* as much as *decomposition* strategy.

In the forth item, the researchers tried to investigate how learners memorized a character, and the results were exactly the same as those that had been obtained at the beginning of the semester; that is, all the courses, including those for learners of

Chinese and Japanese, indicated that they were using *rote-writing* strategy most frequently.

In order to learn the sound of a character, learners in all the courses reported that they were employing *listening* strategy. However, only the beginners of Japanese answered that they were utilizing *reading* strategy as well.

The sixth item revealed how learners were learning the shape of character. All the courses but the intermediate learners of Chinese indicated that they were utilizing *rote-writing* strategy. Those who were taking the intermediate course of Chinese reported that they were harnessing *visualization* strategy.

For the last item, asking how learners were studying meaning of a character, all the courses but the beginning course of Chinese stated that they were relying on *context* strategy most frequently. Those who were in the beginning Chinese course answered that they were using *reading* and *decomposition* strategy. The results obtained at the end of the semester are summarized in Table 2;

Table 2

Most frequently used strategies in May

	Beginning Chinese	**Intermediate Chinese**	**Beginning Japanese**	**Intermediate Japanese**
When a character is introduced	Reading Listening	Reading	Stroke order	Reading
To increase understanding	Rote-writing	Context	Context	Context
To analyze	Decomposition	Stroke order	Decomposition	Decomposition Stroke order
To memorize	Rote-writing	Rote-writing	Rote-writing	Rote-writing
To learn a sound	Listening	Listening	Listening Reading	Listening
To learn a shape	Rote-writing	Visualization	Rote-writing	Rote-writing
To learn meaning	Reading Decomposition	Context	Context	Context

As have been found in the previous table, learners switched strategies depending on which component they were learning.

6. Conclusions

Hanzi (i.e. Chinese characters) and kanji (i.e. Japanese characters) are quite similar, and thus American learners of either language were expected to perceive hanzi or kanji in almost the same way, which would result in similar learning strategies. Based on the data, the researchers confirmed that this expectation was true to a certain extent. First, the intermediate learners of Chinese and Japanese relied on *reading* strategy when an instructor introduced a new character. This indicates that learners familiarize themselves with the new character by focusing on how it sounds. Accordingly, instructors might need to let learners work on a practice where their phonological activation is accelerated. Meanwhile, beginning learners used the variety of strategies when an instructor introduces a new character, and this difference can be attributed to the different amount of learning experience. Next,

learners of Chinese and Japanese used *decomposition* strategy to analyze a character, and given that this tendency is common among beginning and intermediate learners, this would not be dependent on the amount of learning experience. This means that learners are able to recognize parts of a whole character and further utilize the segmented block as native speakers do (Tong & Yip, 2015) for analyses. Third, the learners of all levels found *rote-writing* strategy the most useful to memorize a character. This supports the previous study that rote-writing is the most frequently used strategy among learners of Chinese (McGinnis, 1999), and this preference is applicable to learners of Japanese. Therefore, instructors are strongly encouraged to suggest this strategy to learners. Forth, learners of almost all the courses found *listening* strategy the most useful to learn sounds. This also suggests that an instructor should get learners involved in a certain phonological activity where learners are exposed to certain amount of phonological input all the better for the fact that learners focused on phonological aspect of the character in *reading* strategy when an instructor introduces a new character as well. Furthermore, they relied on *rote-writing* strategy to learn shapes. It could be the case that though learners can decompose a character for the purpose of analyzing the character, they are not utilizing such a strategy to memorize a whole character. Therefore, an instructor may explicitly introduce this strategy as the one of strategies for memorization, not only for analyses.

Regarding the second research question, there was no major change in strategies over the course of time. This indicates that proficiency development or learning experience accumulated in three months was not enough to produce such changes. Furthermore, it can be assumed that in the language courses which were selected for the study, characters were taught in a certain way throughout the semester, and thus learners continued to use the strategies which they had used at the beginning of the semester. A more in-depth study exploring learners' perception would shed the light on this aspect.

References

1. Chikamatsu, N. (1996). The effects of L1 orthography on L2 word recognition: A study of American and Chinese learners of Japanese. *Studies in Second Language Acquisition*, *18*, 403–432.
2. Everson, M. E. (1998). Word recognition among learners of Chinese as a foreign language: Investigating the relationship between naming and knowing. *The Modern Language Journal*, *82*, 194–204.
3. Everson, M. E. (2011). Best practices in teaching logographic and non-Roman writing systems to L2 learners. *Annual Review of Applied Linguistics*, *31*, 249–274.
4. Haththotuwa Gamage, G. (2003). Perceptions of kanji learning strategies: Do they differ among Chinese character and alphabetic background learners?
5. Hayes, E. B. (1988). Encoding strategies used by native and non‐native readers of Chinese Mandarin. *The Modern Language Journal*, *72*, 188–195.
6. Ke, C. (1998). Effects of language background on the learning of Chinese characters among foreign language students. *Foreign Language Annals*, *31*, 91–102.
7. Liskin-Gasparro, J. (1982). ETS Oral Proficiency Testing Manual. Educational Testing Service, Princeton, NJ.
8. McGinnis, S. (1999). Student goals and approaches. *Mapping the course of the Chinese language field*, 151–188.

9. Mori, Y., Sato, K., & Shimizu, H. (2007). Japanese language students' perceptions on kanji learning and their relationship to novel kanji word learning ability. *Language Learning, 57*, 57–85.
10. Packard, J. L. (1990). Effects of time lag in the introduction of characters into the Chinese language curriculum. *The Modern Language Journal, 74*, 167–175.
11. Rose, H. (2013). L2 learners' attitudes toward, and use of, mnemonic strategies when learning Japanese kanji. *The Modern Language Journal, 97*, 981–992.
12. Shen, H. H. (2005). An investigation of Chinese-character learning strategies among non-native speakers of Chinese. *System, 33*, 49–68.
13. Tong, X., & Yip, J. H. Y. (2015). Cracking the Chinese character: radical sensitivity in learners of Chinese as a foreign language and its relationship to Chinese word reading. *Reading and Writing, 28*, 159–181.
14. Yuki, M. (2009). Kanji Learning Strategies: From the Viewpoint of Learners with Non-kanji Background. *関西外国語大学留学生別科日本語教育論集, 19*, 143–150.
15. Xu, Y., Chang, L. Y., & Perfetti, C. A. (2014). The Effect of Radical‐Based Grouping in Character Learning in Chinese as a Foreign Language. *The Modern Language Journal, 98*, 773–793.
16. Xu, X., & Padilla, A. M. (2013). Using meaningful interpretation and chunking to enhance memory: The case of Chinese character learning. *Foreign Language Annals, 46*, 402–422.

Appendix A

Name: _____ First Language: _____

Please look at the examples below and select one or more strategies that you think are the closest to your strategies for each question. The purpose of this survey is to help the instructor to understand the way you learn characters. Thus, telling your true feelings about your learning characters is important. Your responses will not affect your grade. Thank you for your cooperation.

Examples:

1. **Reading**: I read the characters aloud/in mind or I read the meaning of them or…?
2. **Context**: I relate the characters with a word or compound or phrase or sentence or grammar or context or dialogue or story or…?
3. **Listening**: I listen to teachers or audio files or…?
4. **Writing**: I write down the characters or sounds or meaning once or…?
5. **Rote-writing**: I write down the characters several times or…?
6. **Decomposition**: I see the similarities or differences between new and old characters or…?
7. **Stroke order**: I pay attention to the writing order of characters or…?
8. **Self-quiz**: I use flashcards to…?
9. **Visualization**: I associate the characters to a certain image or…?
10. **N/A**: I do not have any strategy.

Example: How do you prepare for Kanji Quiz?
_____ / _____ /_____
_____
_____

1. What do you do during the class when new writing characters are being introduced?
_____ / _____ /_____
_____
_____

2. What do you do to increase your understanding of the characters after they have been first introduced?
_____ / _____ /_____
_____
_____

3. Do you analyze the new characters in order to learn them? If so, how do you analyze them?
_____ / _____ /_____
_____
_____

4. How do you memorize the new characters?
_____ / _____ /_____
_____
_____

5. What specific strategies have you used in learning the sounds of the new characters?
_____ / _____ /_____
_____
_____

6. What specific strategies have you used in learning the shapes of the new characters?
_____ / _____ /_____
_____
_____

7. What specific strategies have you used in learning the meanings of the new characters?
_____ / _____ /_____
_____