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How Does Lower Primary Students Learn Chinese Character Efficiently?

ABSTRACT

Chinese characters pose one of the difficulties in learning Chinese as a second language. Lower primary school students in Singapore find it difficult to learn, memorize and write Chinese characters. Thus, learning Chinese characters is a prevalence problem in Singapore. The teaching of character recognition and writing becomes more challenging for teachers. In order to arouse students' interest in learning Chinese character, teachers need to use special pedagogical approach and assessment practice to cultivate their interest in Chinese language. This paper is divided into 5 parts. The first part introduces the language background in Singapore. The next part explains the related research of Chinese character learning strategy followed by Methodology. The fourth part is findings and discussion. It states the reasons for learning difficulties of Chinese characters for lower primary school students with explanations; discusses the preferred pedagogy approach and assessment practice from students; proposes suggestions and improvement strategies. The final part briefly summarizes the main points as a conclusion.

Key words: Chinese character; learning strategies; pedagogy; assessment practice

INTRODUCTION

Singapore is a multiracial, multicultural society. English being the domain language, has gradually replaced the Chinese language and becoming the family language for most of the Singaporeans especially among the younger generation. Local newspapers report that children in Singapore are increasingly coming from English-speaking homes.¹ The change in the family language leads to the difficulty level of Chinese teaching in Singapore. When pupils are less exposed to Chinese, it becomes more challenging for teachers to teach Chinese in school because the students are lacking of language environment to practice the language. Learning Chinese characters is a difficult task for lower primary school students in Singapore. It is also challenging for teachers to teach Chinese characters, and at the same time, make sure students will not get confused of similar Chinese characters. Therefore, what kind of pedagogy should be adopted, how to choose the most suitable Chinese learning strategies for students and what kind of assessment practice are more efficient for students with different learning ability is crucial for the learning of Chinese characters.

LITERATURE REVIEW

Chinese learning strategy refers to the direct or indirect behavioral measures adopted by Chinese learners in order to make Chinese characters more productive. Early Chinese character teaching research has made some tentative explorations on Chinese character learning strategies. Such as (Wang Bi Xia, Li Ning, Zhong Guo Sheng

¹ See "Change needed as more speak English at home, "The Straits Times, October 12 2004.

and Xu Ye Jing 王碧霞, 李宇, 种国胜, 徐叶菁 1994), discussed about the teaching of Chinese characters in the basic stage by using the psychological process of memorizing Chinese characters of overseas students. Through investigation and analysis, it found out that in order to store information for a longer period of time, learners often use variety of memory strategies, especially associate memory strategy. Their associative ways of remembering Chinese characters are mainly image associations (by association of characters), structure associations (similar parts of assembled Chinese characters) and native associations (some parts that replace native characters with Chinese characters).

Much of the research focused on Chinese learning strategies began in the early 2000s. (Jiang Xin, Zhao Guo 江新, 赵果 2001) based on the theory of modern cognitive psychology and education psychology, surveyed a total of 138 primary foreign students on Chinese character learning strategies and factor analysis test. As a result, a scale of Chinese learning strategies with certain reliability and validity was constructed. In addition, they also analyzed the use of Chinese character learning strategies of these international students, and found out that the glyph strategy, sound strategy, stroke strategy and review strategy were the most used strategies for international students. On this basis, (Jiang Xin, Zhao Guo 江新, 赵果 2002) analyzed the relationship between learning strategies and learning effects of Chinese characters. The research result shows that the application strategy is helpful for Chinese character learning, and glyph strategy is not conducive to learning Chinese characters. To a certain extent, this reveals the relationship between the learning strategy of Chinese characters and the learning effect of Chinese characters. However, the results of this study are limited to Chinese characters that are very easy at the initial stage. Therefore, the relationship between Chinese learning strategies and Chinese test scores remains to be further examined empirically.

The existing research on Chinese learning strategy is mostly conducted from the perspective of cognitive psychology, neglecting the challenges posed by learning environment and cultural background to Chinese learning. Most primary school students in Singapore have bilingual skills. However, with the change of family language, more and more primary school students gradually lose interest in Chinese. The influence of English in schools and families can not be underestimated.

METHODOLOGY

According to the content and purpose of the study, in order to understand the learning strategies and difficulties of primary school students in learning Chinese characters, this paper conducted a questionnaire survey for 25 primary one and two school students. The questionnaire consists of 10 questions, including students' attitudes toward Chinese characters, difficulties in learning Chinese characters, adopted learning strategies, methods of practicing Chinese characters, analysis of ease of Chinese characters, and what kind of pedagogy should they wish teachers to adopt in their teaching.

FINDINGS AND DISCUSSION

1. The Method Adopted by Students When Learning Chinese Characters

Since the dominant language of Singapore is English, the whole community and schools lack the language environment to speak Chinese, which is very unfavorable for learning and mastering Chinese characters. More seriously, the family language is increasingly changing to English. Figure 1 shows nine students (36%) often speak English at home, six students (24%) speak in Chinese and ten students (40%) speak in both English and Mandarin. This figure indicates that the number of lower primary students who often speak mandarin at home is still in the minority. In addition, the number of Chinese students with English as the main family language increased from 28% in 1991 to 59% in 2010, which further increase the difficulty of learning Chinese characters.²

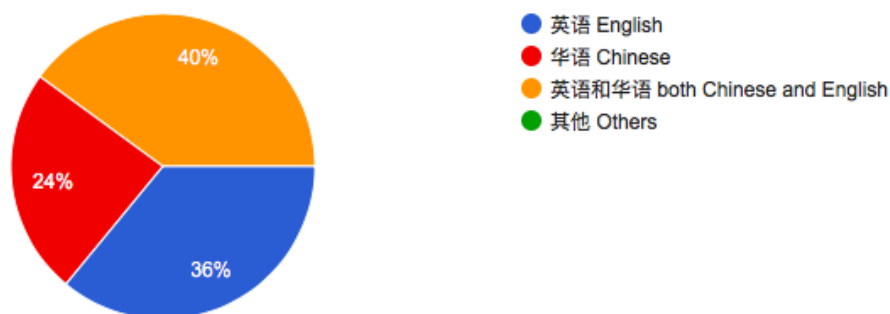


Figure 1: language(s) used at home

The survey also shows that students often adopt different learning strategies when learning Chinese characters. Figure 2 shows nine students (36%) chose the stroke memorization method and the revision method respectively; three students (12%) chose the phonological memory method, and two students (8%) chose the application method and the glyph method respectively. This indicates that most students prefer to study Chinese characters using the stroke memorization method and the revision method.

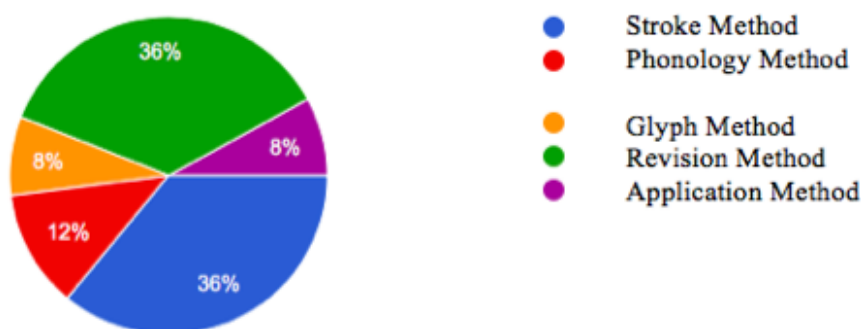


Figure 2: method adopted for Chinese character learning

A Chinese character is a unity of glyph, pronunciation and meaning. Between glyph, pronunciation and meaning, the glyph is the most important part. Chinese glyphs are unique because the glyph of Chinese characters

² 乐学善用:2010 母语胶套委员会报告书 (2010 mother tongue languages review committee report). Singapore: Ministry of Education, 2011, PP15.

differs from one another while pronunciation and meaning may be the same. (Ai Wei 艾伟 1923,1924) studied the relationship between the Chinese glyph, pronunciation and meaning at the University of Washington in Washington, DC and found out that the number of strokes, types of strokes and glyph structure of Chinese characters have an important influence on Chinese character recognition. This also proves why most of the students selected the Chinese characters that have lesser strokes as the easier character to remember on Question 8 of the questionnaire. On the other hand, some scholars disagree with this view, for example, Cai Le Sheng 蔡乐生 conclude that "the complexity of the recognition force and the word is not positive."³ Shen Deli (1982) also believed that the number of strokes in Chinese characters has little to do with the difficulty in identifying them. However, most studies have confirmed the impact of number of strokes on Chinese character recognition. (Yu Bolin, Cao He qi 喻柏林, 曹河圻 1992) think that stroke is the smallest unit of Chinese characters and the number of strokes indicates the complexity of the word. Based on the conclusion of some scholars and considering the language learning environment of the respondents, the number of strokes has certain influence on lower primary students in Singapore.

Many students speak English as their first language thus they are unable to practice Chinese at home. The only chance they can speak and write in Chinese is during their Mother Tongue class which only have a maximum of 7 hours per week. Therefore, the more strokes of Chinese characters, the more likely they are to make mistakes. This can be verified in the responses to the second and third questions of this questionnaire. (See Appendix 1) When respondents answered the second question, nearly half of the students expressed that the reason why Chinese characters are difficult to learn is that the Chinese characters have too many strokes or easily forget the order of strokes. Figure 3 shows that eleven students (44%) are most likely to write typo when learning Chinese, eight students (32%) are confused with similar words, and six students (24%) with wrong pronunciation. This shows that most of the students are having little problem with speaking but struggling with writing. Therefore, many students chose stroke method to remember Chinese characters. There is one question which worth pondering. Although most of the students chose to use the stroke method for memorizing Chinese character, they frequently write the character wrongly, either a totally wrong character or wrong stroke. Therefore, teachers need to question ourselves whether the method or strategy students adopted is the most suitable one for students to remember Chinese characters. Teachers should not limit students to different choices, but it is important that teachers must be mindful in guiding students to choose the most appropriate method of learning Chinese character.



³ See "Yu Ming 余平. 汉字字形识别的认知途径及其认知心理学意义述评" [J]. 浙江教育学院学报, 2001 (4), PP 97.

Figure 3: common mistakes students make

There are only two students (8%) who choose the glyph method because many Chinese characters learned in the lower primary textbook are single characters, thus the glyph method has limited use. On the other side, children may lack of overall understanding of the laws of Chinese characters in the early stages of literacy and could not apply the laws of Chinese characters to literacy consciously.

The findings also show that more than half of the students have extra support at home from either parents or tutors. When parents are English speakers, they will not be unable to help their children with Chinese thus they have to hire tuition teachers. Students who depend on themselves may face more challenges when studying. Parents and tutors play an indispensable role for helping lower primary students to learn Chinese character.

Through data analysis, it reveals that the differences in learning ability influenced students' choice on learning methods. For example, students with lower learning ability are more likely to use stroke method. After acquisition of seven basic strokes of Chinese characters, learner's perception of the glyph is still confined to single stroke. However, students with higher learning ability are able to use radicals in Chinese character instead of strokes to process relevant information, which is a cognitive method for Chinese characters with radicals as the basic unit. If the learners are able to process information with radicals in Chinese character, it shows that the change in the capacity of memory chunk. As the child's overall sensory perception matures, the radical, as the basic unit of Chinese characters, has become a memory chunk and be the connecting point between different Chinese characters in Psychological Dictionary.

From the perspective of linguistics, the smallest unit that forms Chinese character is the stroke, but from the cognitive psychological operation of the learner, the radicals in the Chinese character is the basic unit of the structure. For example, the Chinese character “洗(wash)” has a total of 9 strokes. From the perspective of linguistics, it has nine basic units. When it turns to learners' cognitive psychological processing activities, it only has two units which are “氵” and “先”. Another example will the word “问 (ask)”. It has 6 strokes and higher ability learners will separate the words into two units which are “门” and “口”. Hence, the difference in learning ability influences the the overall maturity of the sensory perception.

The studies of modern Chinese educator Zhu Zuo Ren 朱作仁 have shown that children who is able to use the method of radical analysis analysis have significant literacy scores.⁴ Furthermore, when children use radicals as the operating unit, the same number of strokes of Chinese characters is not necessarily has equal learning difficulty. Chinese characters with fewer strokes may be difficult to learn and oppositely character with many strokes may be easy to learn. This study also explains why some of the respondents think that Chinese characters such as “具” and “走” are hard to remember. Although they have less strokes comparing to others, it cannot be split into smaller unit or basic unit.

⁴ Chen Jin Ming 陈金明. 识字教学与儿童认知发展 Teaching of literacy and children's cognition development, 2001 ,3(4) ,PP 64.

2. Pedagogical Approach and Assessment Practice

2.1 Pedagogy with Motivation Interest

The results of the survey show that students like to practice Chinese characters that are entertaining instead of spelling. Most students like to interact more with their classmates or teachers during class. For example, students wish teachers could make use of vocabulary cards to revise vocabularies with students. They also want to have more group games or competition; one example will be matching the correct pictures with the corresponding Chinese characters. The group with the shortest time and the most accurate answers will get more group points. quickest and the most accurate quickly and correctly. The interactions between students allows students to be active learners, thereby help them to remember Chinese characters in depth.

On the contrary, students will get bored easily if the teaching process is boring, especially for lower primary students. Therefore, games become an important form of learning. It allows students to be totally involved in the activity with positive learning environment. It will not only increase their interest in learning but also makes learning more effective. In addition, except making use of “字宝宝” (word cards) and other school learning tools, teachers could prepare more creative games, such as cross-puzzle. Some students also suggest that video is another useful tool in learning Chinese characters which indicates that they may belong to visual learners. They like to learn Chinese characters by pictures and videos. In overall, the result shows different types of learners which basically are visual, auditory, reading/writing, and kinesthetic. Each learning type responds best to a different method of teaching. Teachers should take into consideration the students' various learning methods when teaching, so that all students can adapt and absorb the knowledge quickly.

2010 mother tongue languages review committee report (《乐学善用— 2010 母语检讨委员会报告书》) mentioned that in 2006, National Institute of Education (NIE) and Centre for Research in Pedagogy and Practice (CRPP) conducted a observational study in school. This study examines the impact of Modular Approach on teacher teaching and student learning. The study found out that teachers who use Modular Approach designed more interactive activities to promote students' learning, and students were more active in the classroom. Another research from Nanyang Technology University have 2500 primary three students and the research also proves that students using the Modular Approach have higher literacy than the rest. These two research shows that the new textbook is success in strengthening the interactivity between teachers and students, as well as promote more communication between them. Eventually, students could gain more interest in the Chinese language at the same time improve the literacy.

2.2 Story literacy.

Some students use imagination to turn Chinese characters into stories when learning. Lower primary students really enjoy listening to stories. Thus, if teachers could turn Chinese characters into a story, it would be easier to students to memorize and remember for longer period of time. For example, more than half of the students feel the Chinese character “喝 (drink)” is difficult to learn. Teacher could turn it into a story like "today, the sun is shining brightly in the sky, a boy is very thirsty and he drink a lot of water." The story breaks the character into different part and let it becomes memorable. 2010 mother tongue languages review committee report (《乐学善

用— 2 0 1 0 母语检讨委员会报告书》) also mentioned about reading and writing skills training, using a series of literacy technic, such as the use of ballads to strengthen the students' literacy and reading skills.

Overall, teachers should encourage students to become a discoverer, innovators when learning Chinese character so that they can get more sense of achievement and eventually explore new knowledge actively. Teachers should also guide students who is unable to find the most suitable learning strategy for self and teach them how to learn Chinese characters, so that they can gradually master their own learning.

The research mainly aims at the learner's learning methods and the teacher's pedagogy, however, different textbook may have effects for students learning Chinese characters. According to The Developmental Model of Instructional Materials for Chinese Characters in the New Singapore Primary Chinese Curriculum, a survey was carried out to compare the functionality of different textbook version (2007 edition of the Primary school Chinese textbook and 2015 edition of the Chinese textbook) Results show significant differences between two batches of the students' test results. The group of primary two students using "《欢乐伙伴》(2015 edition) are able to master more Chinese character than the other group using the 2007 edition textbook ". This study further proves the Chinese character teaching is a challenging task. It is a comprehensive and systematic project which requires each related parties to work together and cooperate with one another.

In summary, teachers can encourage students with better Chinese proficiency to continue using their favorite learning methods. For weaker students, teachers should give guidance in time to help them find the the most suitable learning methods. At the same time, teachers should adopt diverse pedagogical approach and take cognitive strategy into consideration. Moreover, pedagogy must be added with fun elements to trigger students' interest and promote students 'autonomy. Teaching materials should be adjusted appropriately with the students' language proficiency level to enhance the interactivity between students and teachers. Lastly, parents need to cooperate with teachers by trying to communicate with their children in Mandarin at home as much as possible so that students have opportunities to practice Chinese oral and listening as the improvement on oral and listening will directly affect on writing.

CONCLUSION

In conclusion, this paper proves that lower primary school students in Singapore have difficulty in learning Chinese. In order to overcome this difficulty, teachers, parents, schools and the Ministry of Education need to work together to promote students progress. However, further studies need to be carried out to observe and closely monitor students' progress in the classroom and the number of students participating in the survey could be increased.

Reference

- 陈金明. 识字教学与儿童认知发展[J]. 河北师范大学学报(教育科学版), 2001, 3(4).
- 郭德俊, 彭聃龄, 张素兰. 汉字字形特征及使用频率对汉字识别的影响[A]. 郭德俊等. 普通心理学与实验心理学研究进展[C]. 成都: 成都科学出版社, 1985.
- 江新, 赵果. 初级阶段外国留学生汉字学习策略的调查研究语言教学与研究[J]. 语言教学与研究, 2001, (4).
- 江新, 赵果. 什么样的汉字学习策略最有效? ——对基础阶段留学生的一次调查研究语[J]. 语言文字应用, 2002, (2).
- 罗庆铭, 王燕燕, 闵玉. 新版新加坡小学华文教材汉字编写模式[J]. 华文教学与研究, 2017, (3).
- The Straits Times. "Change needed as more speak English at home." October 12 2004.
- 王碧霞, 李宇, 种国胜, 徐叶菁. 从学生识记汉字的心理过程探讨基础阶段汉字教学[J]. 语言教学与研究, 1994, (3).
- 新加坡教育部. 《乐学善用: 2010 母语检讨委员会报告书》, 新加坡: 新加坡教育部, 2011.
- 喻柏林, 曹河圻. 汉字识别中的笔画数效应探究[J]. 心理学报, 1992, (2).
- 余平. 汉字字形识别的认知途径及其认知心理学意义述评[J]. 浙江教育学院学报, 2001, (4).

Appendix 1: Questionnaire

新加坡小学生（低年级）汉字学习策略问卷调查

Survey on Chinese Character Learning of Lower Primary Students

1. 你在家庭最常用的语言是什么？ What language do you use at home?

- A. 英语 English
- B. 华语 Chinese
- C. 英语和华语 both Chinese and English
- D. 其他 Others

2. 你觉得汉字难学吗？为什么？ Do you think Chinese Character is tough to learn? Why?

- A. 很难学 very difficult
- B. 难学 difficult
- C. 一般. Normal
- D. 不太难 not difficult
- E. 容易 easy

Why 因为：

3. 你在学习汉字的时候有什么困难？ What are the common mistakes you make when learning Chinese Character?

- A. 写错字 write wrong Chinese Character
- B. 读错字 wrong tone or pronunciation
- C. 相近字弄混 mix up with similar Chinese Character
- D. 其他: others _____

4. 当你想要记住一个字的时候，你会采用什么方法？ What method do you use when memorizing a Chinese Character?

- A. 笔画方法（记住笔画顺序然后按照笔画记忆） According to stroke
- B. 音义方法（根据读音和音义记忆） According to pronunciation and meaning
- C. 字形方法（注重汉字整体形状记忆） According to shape of the Character
- D. 复习方法（对学过的字不断复习） Through repeat practice
- E. 应用方法（用汉字进行造句或写作） Applying the Character in sentence writing

5. 你有自己的学习小方法吗？（比如为字编故事或是把字想象成一幅画） Do you have your own method of memorizing the Chinese Character? For example, imagine the Character into an image/picture or make up a story for the Character.

6. 你如何练习学校的听写？ How do you practice your school Chinese spelling?

例如：先复习课文再练习听写 Revise the textbook before practice

不复习课文 重复练习 repeat practice without revise the textbook

其他 others：

7. 你在练习听写时有父母或补习老师的帮助吗？ Do you get help from your parents or tuition teachers when practice Chinese Spelling? (Please circle)

有/没有

父母/ 补习家教/其他: 例如兄弟姐妹

8. 你觉得下面哪些字比如容易记住? 哪些不容易记住? Which Chinese Characters below are easy or difficult to remember? Why?

具、写、问、本、走、她、喝、洗、看、画

1) 容易记住的字有哪些? 为什么你觉得这些字容易记住? Write down the easy Chinese Character to remember and explain briefly the reason.

- A. 笔画少 Less strokes
- B. 跟学过的某一个字很像 Related to words that you have already learned
- C. 可以把字分成不同的部分 can split the Character into different parts
- D. 其他 others

2) 不容易记住的字有哪些? 为什么你觉得这些字不容易记住? Write down the difficult Chinese Character to remember and explain briefly the reason.

- A. 笔画太多 too much strokes
- B. 没有学过相似的字 have not learned similar Character
- C. 没有记忆点 not memorable
- D. 其他 others

9. 你喜欢什么样的汉字练习? (课本workbook还是老师单独给的练习? 比如连连看等游戏, 请说明)

What kind of Chinese Character practice do you like? Chinese workbook or games your teacher played with you?
E.g. matching two parts into one Chinese Character

10. 你最喜欢老师怎么教汉字? 或是你觉得老师怎么教最有趣, 你能够很容易就记住那个字? (通过笔画视频、卡通、字卡等方法) How do you want your teacher to teach Chinese Character so it's easier for you to remember? E.g. Video of Character stroke, cartoon, word card, games (please specify)