

**A COMPARATIVE STUDY OF GRADE 3 STUDENTS’
CHINESE CHARACTER ACHIEVEMENT THROUGH
CHARACTER STRUCTURE LITERACY METHOD AND
CHINESE RADICAL LITERACY METHOD AT AN
INTERNATIONAL SCHOOL IN SAMUT PRAKARN,
THAILAND**

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Abstract: The purpose of this study was to determine if there was a significant difference between Grade 3 students’ Chinese character achievement through character structure literacy method (CSLM) and Chinese radical literacy method (CRLM) at an international school in Samut Prakarn, Thailand. This study was conducted on a population sample of 65 Grade 3 students from the target school. The Chinese Character Achievement Test was administered to students and collected in March 2018, to identify students’ Chinese character achievement after an experimental period of five weeks, from January 22nd to March 2nd, 2018, during which the experimental group was taught through CSLM, and the control group was taught through CRLM. The findings suggest that students taught through CSLM (the experimental group) do not statistically differ from students taught through CRLM (the control group), with both literacy methods being found somehow effective when teaching students to learn a Chinese character. Despite the fact that no significant difference in Chinese character achievement was found, a numerical difference in favor of the experimental group versus the control group was observed. Finally, recommendations for teachers, students, administrators and future researchers are presented.

Keywords: Chinese Character Achievement, Chinese Radical Literacy Method, Character Structure Literacy Method, Grade 3 Students, Chinese Language Learning.

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Introduction

In Thailand, Chinese language learning has become more and more important for the next generation. The biggest reason behind this can be inferred from the findings reported by a research done in 2013, entitled “Bangkok youth’s demography towards the decision to learn foreign languages” (Rotparsitporn, 2016). The data collected from 400 Bangkok youths, who were Thai native speakers, indicate that Chinese ranked second as the language that most Thai youths were already learning and were interested in learning. Thailand is preparing their next generation to be competent in the market and certainly being equipped with Chinese language skills is crucial, as China plays an important role in the market and their significant contribution to the world’s economy. Understanding the need of learning Chinese language, many international schools in Thailand also have Chinese as a language of instruction in the school curriculum. Moreover, learning foreign language is also essential in Thai public schools, as this is also part of the national curriculum of Thailand. English language is offered throughout the entire basic education core curriculum, while for other foreign languages, such as French, German, Chinese, Japanese, Arabic, Pali and languages of neighboring countries, it is left to the discretion of the schools to offer them. (Ministry of Education Thailand, 2008). Many schools not only want students to learn Chinese in institutes, but also to learn the language in a school setting.

For instance, an international school in Samut Prakarn is one of the international schools in Thailand that has Chinese as a language of instruction in the school curriculum. In this international school, Chinese is one of the major language of instruction used in the early year program (Nursery to K3), and primary year program (Grade 1 to Grade 5).

Specifically, this international school uses *Chinese radical literacy method* (CRLM) to help students learn a new Chinese character in the primary year program. Chinese radical literacy method is a literacy method that helps students to quickly recognize the meaning of one character through recognizing the radical of the character (Wu, 2010). Certainly, CRLM has helped many students learn Chinese characters. However, a study done in National Dong Hwa University in Taiwan reported that *character structure literacy method* (CSLM) enables students to make in-depth understanding and connection with the new Chinese characters they have learned (Chiu, 2013). Implementing such literacy method also seems to have a positive effect on inspiring students’ interest in word recognition. Moreover, the results have shown that it does increase students’ word recognition ability (Chiu, 2013). Character structure literacy method explains the structure of the characters, the strokes of the characters, how it is formed, the origin of the character, and the meaning that a character make can be related to the origin of that character.

In the international school targeted by this study, Grade 3 students have to be able to learn 250 writing characters at the end of the school year, after studying

Chinese language through the CRLM method. However, based on the first author's experience, students tend to forget what they have learned, which is usually reflected on their year-end assessment. Thus, based on the aforementioned facts, a quantitative comparative intervention research was designed and carried out, in order to examine if there was a significant difference between mean measures of Chinese character achievement of Grade 3 students who learned through CRLM and an experimental group who learned through CSLM at an international school in Samut Prakarn, Thailand.

Research Objectives

The following are the research objectives developed for this study.

1. To identify Grade 3 students' Chinese character achievement through character structure literacy method at an international school in Samut Prakarn, Thailand.
2. To identify Grade 3 students' Chinese character achievement through Chinese radical literacy method at an international school in Samut Prakarn, Thailand.
3. To determine if there is a significant difference between Grade 3 students' Chinese character achievement through character structure literacy method and Chinese radical literacy method at an international school in Samut Prakarn, Thailand.

Theoretical Framework

This research was based on the two major literacy methods: Character structure literacy method (CSLM) by Chiu (2013) and Chinese radical literacy method (CRLM) by Ho, Ng and Ng (2003).

Character structure literacy method (CSLM). CSLM (字理识字教学法, *zì lǐ shí zì jiāo xué fǎ*) is a literacy method that conforms to the cognitive psychology from sensibility to rationality. This literacy method helps students to be able to analyze the strokes (笔画, *bǐ huà*) of the characters, explain the principles of the characters, remember the form or structure of the characters, and teaches students to be able to write the characters. It promotes turning characters into vivid pictures, development of image, make logical thinking, guide students to observe and think, in order to simulate students' interest in learning Chinese characters. This method helps student make in-depth understanding of the characters they are learning and students can carry out meaningful memory rather than mechanically memorizing each character. Thus, this literacy method can help in reducing the burden of memorization of the Chinese characters (Chiu, 2013).

There are twelve approaches in CSLM used to teach students in recognizing a new

Chinese character. However, in this study, the researchers used only one approach, which is the *association approach*. The reason why this sole approach was chosen was because it was the most aligned to the target school curriculum. Moreover, this approach lies on the same difficulty level as CRLM.

Association approach. This method consists of learning the characters by making connection of the characters' form and shape to its structure and principle. For example, the teacher may ask, "what do you see when water level lowers?" You will see 沙 (shā, meaning *sand*), because when water level lowers you can see the sand under the water.

Chinese Radical Literacy Method (CRLM). CRLM (部首识字教学法, bù shǒu shí zì jiāo xué fǎ) is a literacy method that helps students to recognize the meaning or to make a guess of the meaning of a Chinese character when they see the association of the radical with a component in the character (Ho et al., 2003). The theory behind this literacy method is that most of the Chinese characters come from one of the six categories of Chinese characters (六书, liù shū): the pictophonetic compounds (形声字, xíng shēng zì). Characters in this category are composed of two parts: the pictograph and the phonetic part. The first part, which is known as pictograph, gives the general meaning of the character. For example, the character 湖 (hú, means *lake*). The left side structure 氵 is known as "三点水" (sān diǎn shuǐ), in English it means *water*. The second part is a phonetic part, this part derived from a character pronounced in the same way as the word the new character represents. For example, the same character 湖 reads "hú", we have identified the first part earlier. The second part of this character would be 胡 also reads "hú". According to this example, most of the Chinese characters are composed of the same structure. The first part, or pictograph, was later used as the radical for the Chinese characters.

Conceptual Framework

Figure 1 shows the conceptual framework of this study, describing graphically the experimental group (Group A), who learned through CSLM, and the control group (Group B), who learned through CRLM. In this study, the literacy method served as the independent variable, while the students' Chinese character achievement served as the dependent variable.

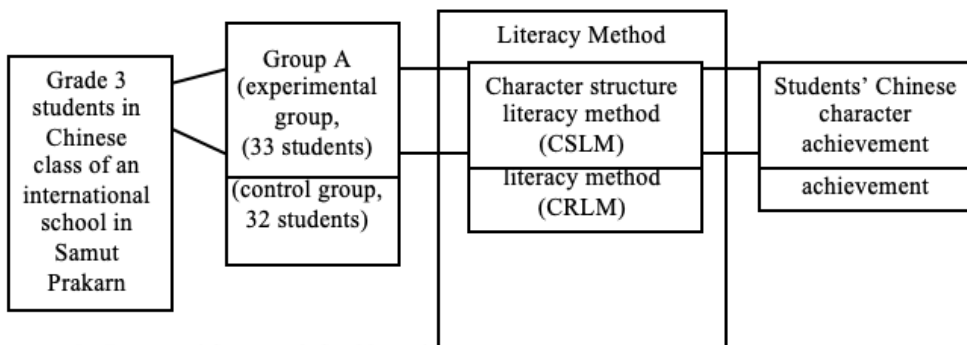


Figure 1. Conceptual framework for this study.

Literature Review

A previous research conducted by Chiu (2013) on CSLM was implemented in a public primary school located in eastern Taiwan. The results of the research showed that it is positive to implement this literacy method on Grade 1 students, because the method greatly increased students' interest in learning Chinese characters, and the result was reflected in the questionnaire. Moreover, students were able to accurately identify the characters after learning through this literacy method. The percentage of accuracy improved from 39.75% before the intervention to a 94.3% afterwards.

A previous research conducted by Taft and Chung (2015) on CRLM was implemented at the University of New South Wales, located in Australia. The results of the study showed that participants with radical knowledge performed better than those who have never learned about the radical method before. Even those that were only exposed to the knowledge of radical for a short period of time performed better. This result emphasizes the importance of helping students to build up radical knowledge, so they will be able to identify a character quickly through recognizing its radical.

Methodology/Procedure

Population and sample. This research was conducted on a purposive population sample of 65 Grade 3 students from the second semester of the academic school year of 2017-2018 with 33 students in the experimental group (Group A), who learned through CSLM and 32 students in the control group (Group B), who learned through CRLM.

Research instrument. The research instrument used for this study was the Chinese Character Achievement Test, which was similar to the final (year-end) Chinese character assessment test for Grade 3 used by the international school in Samut Prakarn participating in this study. The assessment consisted of two parts: the first part was dictation of the Chinese characters (weight 50%) and the second part was definition of the Chinese characters (weight 50%), learned in the fourth Unit of Inquiry (UOI) in Grade 3 Chinese language class after the experimental period. In

this UOI (the fourth UOI), students had to learn to write 50 Chinese characters and be able to define the meaning of each character.

The scoring rubric of the research instrument followed the scoring rubric of the target international school in Samut Prakarn. Students scoring equal to or below 60% will be recommended for Chinese Language support in the following school year. The scoring rubric of an international school in Samut Prakarn was used to find out students' Chinese character achievement, for the school follows a no fail policy, therefore, the test is not use as a tool to evaluate students' academic performance, rather a tool to see the result of authentic teaching.

Findings

In the following sub-sections, the findings regarding each research objective will be summarized.

Research Objective 1

- Overall, Grade 3 students' Chinese character achievement in the experimental group (Group A) learning through CSLM was interpreted as satisfactory ($M = 69.27$, $SD = 18.80$).
- Overall, G3A class, from the experimental group (Group A) learning through CSLM, showed a satisfactory Chinese character achievement ($M = 67.25$, $SD = 16.55$).
- Overall, G3R class, from the experimental group (Group A) learning through CSLM, showed a fairly good Chinese character achievement ($M = 71.18$, $SD = 21.02$).

Research Objective 2

- Overall, Grade 3 students' Chinese character achievement in the control group (Group B) learning through CRLM was interpreted as satisfactory ($M = 62.78$, $SD = 19.66$).
- Overall, G3Y class, from the control group (Group B) learning through CRLM, showed a satisfactory Chinese character achievement ($M = 64.18$, $SD = 17.63$).
- Overall, G3W class, from the control group (Group B) learning through CRLM, showed a satisfactory Chinese character achievement ($M = 61.20$, $SD = 22.26$).

Research Objective 3

- Overall, there was no significant difference between the experimental group (Group A) and the control group (Group B) in terms of Chinese character achievement, $t(63) = -1.36$, $p = .18$.

- Despite the fact that no significant difference in Chinese character achievement was found, a numerical difference of 6.49 points in favor of the experimental group versus the control group was observed.

Discussion

The findings of the current study show that there was no significant difference between Grade 3 students' Chinese character achievement through character structure literacy method and Chinese radical literacy method at an international school in Samut Prakarn, Thailand. Based on that, this section discusses the findings obtained from the current study, placing such findings in context with previous research studies. The discussion is presented and organized by research objectives.

Research Objective 1. The findings from Research Objective 1 revealed that, students from the experimental group (Group A) learning through CSLM showed a satisfactory Chinese character achievement according to the school's scoring rubric. The result has proven that CSLM is effective when teaching a new Chinese character because most of the students were able to remember the characters in the Chinese character achievement test. As mentioned in the study of Chiu (2013), this literacy method helps students to be able to explain the principles of the characters, remember the structure of the characters, and teaches students to be able to write the characters, which is also aligned to the study of Chiew (2008), where students have to know the principle and the structure of the characters in order to learn the meaning of the characters as their vocabulary database increases, the percentage of students recognizing the characters wrongly also increases. Remarkably, students in the experimental group were unlikely to write the characters wrongly than the control group, because they were taught specifically and in detail the form and structure of the characters.

One notable difference between the control group and the experimental group is the second part of the test (definition). This really shows the effectiveness of implementing CSLM when teaching students to learn a new Chinese character. Overall, students in the experimental group scored higher than students in the control group. They were able to write down the accurate meaning of the character. This finding supports the theory from the studies by Chiu (2013) and Hsu (2009) emphasized on the analysis of the principle of the character as one of the important aspect of CSLM teaching procedure. Students have to be able to observe, associate, compare and analyze characters, knowing its origin and meaning. For example one of the characters that appears on the test, 汽 (qì) which means *steam* or *vapor*, one of the students in the control group wrote the meaning as 汽水 (qì shuǐ) meaning *soda drinks*. The students were taught to guess the meaning of the character through its semantic radical, which caused this error in identifying the meaning of the character. Whereas, more students in the experimental group get it right.

One remarkable finding was that in the control group, there was not any student that scored higher than 81% - 90%. However, in the experimental group, there were three students that scored between 91% - 100%. From this data, it is evident that CSLM might be more effective than CRLM, in terms of Chinese character retention rate, as the students could still remember the characters by its principle and structure. Therefore, the findings suggested that the implementation of such literacy method does help students to have higher Chinese character achievement. If the experimental period lasts longer, possibly the results could be more positive and significant.

Research Objective 2. The findings from Research Objective 2 revealed that, students from the control group (Group B) learning through CRLM showed a satisfactory Chinese character achievement according to the school's scoring rubric.

The result has proven that CRLM is fairly effective when teaching a new Chinese character because most of the students were able to remember the characters in the Chinese character achievement test. Students' result in the first part of the test proves the theory behind this literacy method which was mentioned in Chen (2008) and Ho, Ng, and Ng (2003), that most characters are from the pictophonetic compounds and that characters in this category are composed of two parts: the pictograph and the phonetic part. Focusing on the phonetic part, it gives a cue to the pronunciation of the character. When students hear the teacher say the character, they are likely to get the phonetic part correct as the characters for the phonetic part does not vary greatly.

In addition, from the vocabulary that the teacher gives as an assistance instruction, students will be able to guess the semantic radical of the character as it is a cue to the meaning of the character. So, during the test the teacher will give instruction such as, 伴-伙伴的伴 (bàn, huǒ bàn de bàn) so students have to write down one of the characters of 伙伴 (huǒ bàn), which means *partner*, in the answer sheet. Students know that partner relates to human being and therefore can make a guess of the semantic radical. As they have learned before, the radical 亻 (dān rén pang) means *people* or *human being related*. Even if the students do not really remember the character 伴 (bàn), they will be able to make a guess from these cues and the guess has higher frequency to be correct.

Moreover, from the results of the test, students' performance in Part II of the Chinese character achievement test conformed to the study of Taft and Chung (2015), that documented and emphasized the importance of helping students to build up radical knowledge so they will be able to identify a character quickly through recognizing the radical. In the second part of the test, students were given a question sheet of all the characters that they have to give a definition of. Students were able to remember the characters by identifying its radical, and then they were able to make a quick guess of what the characters are associated with, in order to make relation to a

vocabulary that they have learned in class.

Although, the statistics of the whole control group appeared to be satisfactory with 62.78%, but that is only 2.78% above the passing score on the scoring rubric. Therefore, the overall results cannot be seen as highly positive. The reason that could lead to this result is obvious because students' Chinese character retention rate barely meet the standard. This data reflects the need to improve the methodology in teaching students to learn a new Chinese character, in order to help students build more solid understanding and knowledge of what they are learning, therefore, can increase students' Chinese character retention rate.

Research Objective 3. The findings from Research Objective 3 revealed that both group of students, students from the experimental group (Group A), learning through CSLM and the students from control group (Group B), learning through CRLM showed a satisfactory Chinese character achievement according to the school's scoring rubric, which concluded to be no significant difference. From the results, it is evident that there was no significant difference between Grade 3 students' Chinese character achievement through character structure literacy method and Chinese radical literacy method at an international school in Samut Prakarn, Thailand. This result indicates that both literacy methods appear to be somehow effective. However, when looking at the overall mean score of the experimental group, there was not much difference from the control group, still it appears to be a little bit higher, numerically, than the control group. Therefore, the researcher concluded that despite the fact of not finding a significant difference, there is still a numerical difference between the experimental group and control group. The control group was numerically, 6.49 points lower than the total mean score of the experimental group.

One major reason that both the experimental and control groups' scores were so close could be because the experimental period was five weeks; therefore, the length of the experimental period did not show a significant difference. Moreover, students only have 50 minutes of Chinese character lesson a day; this is not enough to have more activities for practice. If the implementation time was longer, probably the difference will be more significant, (i.e., in Chiu's (2013) study, the experimental period lasted for 12 weeks and in Hsu's (2009) study, the experimental period lasted for one month).

Another important factor that caused such result was that students in the experimental group might be influenced by their past experience, because they were taught to learn through CRLM since K1 to Grade 2. CSLM is a new literacy method introduced to them and they need more time to be familiar with this literacy method. From the researcher's observation, most students were still more likely to use the knowledge of CRLM when interpreting a new Chinese character.

Recommendations

Based on the findings of the current study, there are some recommendations for students, teachers, administrators, and future researchers. Students learning through CSLM performed slightly better than CRLM. Therefore, the researcher suggests that students could learn through this literacy method to help increase their Chinese character achievement. The same reason of recommendation for teachers as CSLM will be able to help students increase their Chinese character achievement. Administrators can try to carry out CSLM in the school and with high hopes; students might be able to have higher Chinese character achievement. As for future researchers, they can still compare the two literacy methods but maybe extend the experimental period. For there are some difference but the statistics were not big enough to be significantly different. If the time was longer, there are chances that the statistics could be significantly different.

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