LEARNING MANDARIN STROKE WRITING AMONG NON-CHINESE LEARNERS: MOBILE LEARNING VERSUS TRADITIONAL LEARNING

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ABSTRACT

Mobile assisted learning is said to compensate and facilitate numerous learning difficulties among language learners especially in learning a language which embraced a totally different set of metalinguistics with their first language. This preliminary study was aimed to compare the impact of mobile assisted learning and traditional learning on Mandarin stroke writing among non-Chinese learners in Universiti Teknologi MARA, Mukah, Sarawak, Malaysia. All 100 Level 2 Mandarin undergraduates were requested to sit for a Pre-test before they were divided equally into treatment group (TG) and control group (CG). Students in TG were asked to practice their stroke writing via three predetermined Mobile Applications (MA) while students in CG were requested to practice their stroke writing via traditional rote learning method. Both groups practiced their assigned method for three weeks before their Post-test. Later, the scores of both pre and post tests were compared and interviews were conducted to cross check their views on both methods used. Results suggested positive impacts on both methods used improved stroke writing. However, the differences of improvement rate among these two methods were significant but small, 4.2%. The findings suggested a need to further study participants’ preferences in the learning of writing in order to cater individual needs in the learning of a new language effectively.

Keywords: Non-Chinese Learners; Mandarin Stroke Writing; Mandarin Stroke Order; Mobile Application Stroke Writing; Rote Learning

INTRODUCTION

The blooming of China’s economy encourages the learning of Mandarin as foreign language among the non-Chinese learners at tertiary level [1]. Many public universities in Malaysia such as University Teknologi MARA (UiTM), offers Mandarin language courses for non-Chinese learners to both the diploma and degree programmes that consist of mainly non-Chinese students. The number of students enrolled in Mandarin language courses is increasing each year. However,
the increase in number of students is not reflected in the rate of achievement among these students.

The Malaysia Government is currently planning to improve the education system that includes Mandarin in the syllabus [2]. Former Deputy Prime Minister, Tan Sri Muhyiddin Yassin who is also the Education Minister said that Mandarin is a highly recognised language in Malaysia and Mandarin is taught not only as a foreign language but rather as a mother tongue. Those who are not of Chinese descent are also encouraged to learn Mandarin [2]. Thus, the urgency to conduct more research on effective teaching and learning methods is deemed as necessary to provide more alternative strategies or to improve students’ mastery of the language.

Non-Chinese learners usually face difficulties in the learning of Chinese language because they do not have a supportive learning background for them to use the language [3]. Moreover, the writing system for Chinese characters is totally different from the alphabetical writing system of the learners’ first language, either English or Malay, which may contribute to a slow progress in learning.

Rote learning has been traditionally a method of teaching and learning Chinese characters since thousand years ago. Learners are used to copying and memorizing the characters [4]. While some researchers found that this traditional technique was perceived as most effective by learners to write the characters in the correct order e.g.,[5, 6], other scholars [7, 5, 8] argued that learners may learn Chinese language best with the assistance of modern technologies. For instance, Shinagawa [7] described how mobile apps helped learners to pick up non-western characters. Wong et al. [5] illustrated how learners are able to engage themselves in Chinese Idiom in collaborative activities with the use of mobile apps. Chung [8] also claimed that students are more motivated to practice the basic strokes of the writing order using iPad because it allows the integration of learning Chinese into the students’ daily lives. However, research on the use of mobile app for writing Chinese characters in the correct order is rather scarce. Therefore, this research is essential to compare the impact of both learning methods for learning the basic strokes of writing Chinese characters among non-Chinese learners.

METHODOLOGY

Pre-test post-test design was used in the study. The study use mixed method data. The quantitative data was gathered from pre-test post-test design and the qualitative data was gathered via semi-structure interview.

All 100 UiTM diploma undergraduates who were taking Level 2 Mandarin were required to complete a 20 Mandarin characters writing test elicited randomly from the vocabulary list of Level 1 and 2. In this test, they were instructed to write the items in the form of a series of sequence or steps as to allow the researchers to identify their problems or errors of the orders in character writing.
Control group (CG) comprised of 50 participants. They were asked to practice character writing in traditional way (rote learning method), in which, they practiced character writing routines using the exercise books pre-determined by the course for three weeks. Another 50 participants were in treatment group (TG) where they were asked to use the top 3 ranked mobile applications which was pre-determined by the study to do their character writing practice routines for three weeks.

A Post-test was completed by both CG and TG participants at the end of three weeks. The test instructions and test items were exactly the same as in Pre-test. The test scores of both pre-and post-tests were then analysed and compared.

Approximately 12 participants from each group were selected to participate in the semi-structured interview. The participants were those who have scored the highest, moderate and the lowest score in their differences of Pre and Post-tests among both respective groups. This was to allow the study of collect a representative of views from different proficiency levels according to the treatment given. Basically, the interview probed further either on their improvement or deterioration of the order of character writing.

**Collection Framework**

Figure1 shows the data collection of the study.
Selection of Existing Mobile Application

The selection of existing mobile application was based on the first top 3 ranked mobile application available in both Google Playstore and Apple App Store. The three mobile applications used in this study were Chinese Skill-Learn Chinese, Chinese Writer and Learn Chinese (Mandarin) Free. Table I shows the detail of the application.

| No | Name                                | Rankings | Downloads     |
|----|-------------------------------------|----------|---------------|
| 1  | Chinese Skill-Learn Chinese         | 4.8      | 1 million     |
| 2  | Chinese Writer                      | 4.2      | 100 thousands |
| 3  | Learn Chinese (Mandarin) Free       | 4.0      | 100 thousands |

RESULTS AND DISCUSSIONS

This section shows and discusses on the results in comparison with the responses given by the participants and previous studies.

Impact of Mobile Application on Learning to Write Chinese Characters in the Correct Order

Figure 2 illustrates the performance of learners from the TG. The results indicated that the use of mobile apps increased in the number of learners who passed the post-test (n=40) as compared to the pre-test (n=28). From the result, it can be inferred that the use of mobile apps has positively influenced their learning of character writing. Accordingly, the treatment has successfully reduced the failure rate in the post-test.

Semi structured interview responses also revealed how the mobile applications have impacted their learning of stroke writing. According to them, generally, mobile applications helped them to remember the shape, directions and the orders...
of writing better. The three related responses extracted from the qualitative data were:

H1  
- … it helps me to remember the shape of the characters and also the directions of strokes. It shows the step of characters which is easy for me to memorize the characters’ steps.

M1  
- App is helpful. It helps me to learn the stroke direction and write it in the correct way.

L3  
- The app is good because it shows the way to write the characters correctly.

Thus, the result of this study shows that mobile applications provide added-value in helping learners to write Chinese characters in the correct sequences. The finding was consistent with existing literature that supports the integration of mobile phones in and out of the classroom to enhance students’ learning and academic performance [9]. Ng et al. [10] found that there was a positive relationship between social mobile application usage and academic performance. For objective 1, this study shows a positive impact of mobile application on learning to write Chinese characters in the correct order. In other words, the use of mobile applications improved and enhanced the learners’ performance in the post-test.

**Impact of Traditional Method on Learning to Write Chinese Characters in the Correct Order**

Figure 3 demonstrates the achievement of CG who learnt character writing via traditional classroom instructions. The results indicated that traditional classroom teaching has improved the number of passes in the post test (n=35) as compared to

![Figure 3. Performance of Control group in Pre and Post-Test](image)
the pre-test (n=25). The results also indicated that the traditional classroom teaching has reduced the number of failures in the control group. The learners in the CG utilized the traditional Chinese characters learning strategies that resembled rote learning or copying repetitively. The following are the responses of the participants on how they practiced the stroke writing traditionally.

- H3  ● Practices help me to memories the characters, shape and step.
- M3  ● I have to do a lot of the writing and memorise the shape of the characters
- L3  ● I have to write the characters many times so that I can strengthen my memorization on how to write the character.

The result also shows a positive outcome on the use of traditional learning strategies to improve or enhance strokes order of Chinese characters. This finding is aligned with Ke’s [9] and McGinnis’s [11] studies which revealed that repeat copying is perceived as effective strategies for Chinese character learning.

**Comparison of Pre and Post-Test Results for both Traditional and Mobile App in the Learning of Chinese Character Writing**

Figure 4 shows the comparison of performances for both the control and treatment groups in learning Chinese character writing. In general, the instructions received by the learners in both groups were effective as shown by an increase in the number of passes in both post-tests.

![Figure 4. Comparison of Performance for Both Control Group and Treatment Group in Their Pre and Post-Tests](image)

Although, there is a general sense that both the traditional and mobile apps learning produced positive results in the post-test, Figure 4 shows that the increase in the number of passes for the treatment group is higher i.e. pre (n=28) and post-test (n=40) than the control group i.e. pre-test (n=25) and post-test (n=35). The results also show that the numbers of students who failed in both tests were lesser in treatment group than in control group.
The figure demonstrates that the improvement in TG is approximately 25% and 20.8% for the CG. Thus, the difference in passing rate was only 4.2%. The results for comparison of TG and C shows a minimal difference in improvement for the passing rate. While mobile application have been linked to improve performance, the effectiveness of teaching method in the treatment group does not significantly boost their learning to write Chinese characters in the correct order. However, they might have different point of view towards the method that they are assigned to work on. The responses of the participants in both TG and CG have shown similarity in opinion in the use of both methods respectively. Table II depicted comparison of TG and CG views about learning Chinese character writing using the method assigned to them.

**TABLE II. COMPARISON OF USERS’ PERCEPTION FROM BOTH TRADITIONAL AND MOBILE APP IN THE LEARNING OF CHINESE CHARACTER WRITING**

| Participants from TG | Participants from CG |
|----------------------|----------------------|
| **What strategy works to improve your stroke writing?** | **What are your suggestions for improving your character writing order?** |
| H2 | H3 |
| • Use both app and characters practice workbook to improve the writing strokes. | • Keep practice. Do correction when I write it wrong. |
| • “Chinese Skills” is more helpful. This app completed with the translation of the words or sentences, characters which might help me to improve my mandarin proficiency and characters writing skills. The games in the app are interesting. | |
| M2 | M1 |
| • Games like puzzle might help us improve the stroke writing. | • Practice more and memories the rules of characters writing. |
| • “Writer” is good. The app provided a platform for students to compete with each other. | |
| L1 | L3 |
| • Instruction or hints can be given to make user alert with the mistake. | • Need to practice a lot and the use of app for practice is believe to work but need to refer to the text book as well in case the steps shown in the app is inconsistent with the text book. |

Despite getting better results after the method used in both groups, the participants in general agreed that practice makes perfect. However, with a little touch of fun within the routine practices would expectedly enhance the results that they currently possessed.

The results for comparison of both TG and CG were consistent with past studies [12, 13, 14, 15] suggested that students in the MALL group demonstrated higher achievement and motivation [16]. Moreover, Shinagawa [7] also argued that MA can be useful in developing the learners’ writing of Chinese character and improve their writing order. However, the difference in passing rate for both the treatment and control group in this study shows only a small improvement of 4.2%. The small difference in the passing rate suggests that the traditional learning strategies are equally important in the learning of Chinese characters stroke order among some non-Chinese students.
CONCLUSIONS

Overall, the results of the study reveal positive impacts in the improvement of the participants’ writing order either using traditional method or mobile apps. However, the improvement rate of participants who used traditional method is 25%, which is slightly higher than those who used mobile apps, 20.8%. Though the differences of improvement rate between these two methods is not huge, it is only 4.2% but it is representative enough to tell which method might provide a better outcome. In comparison, traditional method is laborious and less effective and a repetitive process for an educator whenever a new set of words are introduced to the students. Practically, since the set of vocabulary is fixed for each learning level, and mobile apps has shown to provide more motivation and improvement, it is suggested to produce a mobile app that suit the learning level of the learners. By doing this, more time can be spent on other teaching components in classrooms to improve learners’ comprehension, accuracy and mastery of the target language. Besides that, the findings also suggest to seek personal preferences of learning methods for writing orders as to cater individual needs in learning for a more effective outcome.

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