

Article

Teaching *Hanzi* Using Correct Stroke Order and *Bujian*: An Analysis of CEGEP Students' Learning Experiences

Joy Chengyu Lin*

Concordia University, Dawson College, Canada

Grace Cheng-Ying Lin

Concordia University, Canada

Received: 7 February, 2022/Accepted: 27 June, 2022/Published: 30 December, 2022

Abstract

Learning *hanzi* (Chinese characters) has been regarded as a challenging task due to the complex strokes, the rupture between shape and sound, and the memorization required. Targeting a Chinese as a Foreign Language (CFL) student audience, this paper demonstrates the pedagogical benefits of learning the correct Chinese order of strokes (COS) and *bujian* (component) for *hanzi* acquisition. This research was conducted at a CEGEP (Collège d'enseignement général et professionnel in French; General and Vocational College in Quebec in English) located in metropolitan Montreal. Results showed that students' knowledge of COS and *bujian* improves the outcome of their handwriting. When writing *hanzi* without first being demonstrated COS, students tended to make mistakes in strokes, shapes or structure, such as an extra hook or an asymmetrical appearance. However, after being instructed the correct COS, the mistakes decreased. Moreover, it is noticeable that the effects of COS interweaved with students' previous knowledge of *bujian*. When students wrote new *hanzi* that were comprised of *bujian* that they had been previously exposed to, they often wrote correctly, with appropriate shapes and space arrangements. Students' surveys further affirmed their appreciation of COS and their preference of an instructor's in-person guidance while taking advantage of multimedia teaching tools for assistance. Following these findings, this paper analyzes several useful pedagogical approaches, including the phenomenographic teaching approach, that allow instructors to prioritize learners' perceptual experiences through engaging and proactive learning processes.

Keywords

Hanzi, *bujian*, stroke order, multimedia teaching tool, Chinese as a Foreign Language

1. Introduction

Hanzi (Chinese characters) are an essential component to languages such as Chinese and Japanese. How should we learn *hanzi*? How should we teach *hanzi*? This paper attempts to provide its target audience

*Corresponding author. Email: jlin@dawsoncollege.qc.ca

— Chinese as a Foreign Language (CFL) students — with a comparative study that visualizes the benefits of learning the Chinese Order of Strokes (COS) and the components (*bujian* 部件). To better understand learners' experiences and needs, this paper conducts a research comprised of the observation and survey of a Chinese language classroom at a Canadian higher education institution. The purpose is to examine if these approaches provide learners with pedagogical benefits. Furthermore, this paper suggests several teaching methods that could enhance the teaching and learning efficacy of *hanzi*.

A *hanzi* is a “two-dimensional logograph composed of a number of strokes” (Law et al., 1998, p. 113). Its handwriting is a bodily movement that requires psychological and physical collaboration. To write a *hanzi* properly, a learner's cognitive ability to break down a character into segments and the employment of motor capability are essential (Giovanni, 1994, p. 354; Law et al., 1998, p. 117;). As a process of “perceptual coupling” (Huang, 2017, p. 2), *hanzi* handwriting also reinforces the ability to read and recognize them. However, simultaneously the acquisition of *hanzi* is regarded as one of the crucial challenges of Chinese language learning due to several reasons. First, *hanzi* is visually complex (Huang, 2017, p. 1). Second, contrary to alphabetic letters, *hanzi* is often “opaque” (Huang, 2017, p. 5), due to the rupture between its pronunciation and orthography. Moreover, a traditional teaching approach that focuses on “rote repetitive copying” and “excessive demand on memory” is employed, which may hinder the efficacy of learning (Huang, 2017, p. 1). Therefore, it is not surprising that many CFL students abandon their studies (Huang, 2017, p. 1). Considering this, it sometimes seems inevitable that teachers and students would wonder how to meet these requirements.

2. Literature Review

2.1 Pedagogical benefit of teaching correct Chinese order of strokes (COS)

A stroke has its own “shape” and “direction” (Law et al., 1998, p. 115) and is regarded as one of *hanzi*'s “basic graphic units” (Law et al., 1998, p. 114). The website China Services introduces the basic strokes of *hanzi* to international readers (“Why Chinese,” 2018).

Table 1

The Basic Strokes of hanzi

Stroke	Direction	Name	In Context
丶	↘	diǎn	你 字 寫
一	→	héng	言 天 甚
丨	↓	shù	到 田 甚
ノ	↙	piě	你 禾 字
㇇	↘	nà	天 禾 變
ノ	↗	tí	漢 我 挑
㇇	↘	hénggōu	字 愛 電
丨	↙	shùgōu	小 到 你
㇇	↘	xiégōu	我 戴 戈
㇇	↘	héngzhé	回 國 要
㇇	↘	shùzhé	忙 甚 緣

As shown above, a remark found on a Chinese governmental website that provides information related to Chinese culture, economics and society thus states:

[T]he Chinese stroke order system was designed to produce the most aesthetical, symmetrical, and balanced characters on a piece of paper. Furthermore, it was also designed to be efficient – creating the most strokes with the least amount of hand movement across the page. You may notice that all Chinese characters fit neatly into a square box. None of them skew dramatically to one direction or the other, which again reflects how much we value symmetry and balance. (“Why Chinese,” 2018)

This highlights the significance of stroke order based on the idea that *hanzi* are constructed to be visual and ergonomic. Moreover, it explains how the composition of strokes triggers a sense of aesthetics such as the arrangement of space. The directions of *hanzi* handwriting should follow several principles:

top to bottom;
 left to right;
 first horizontal, then vertical;
 right-to-left diagonals followed by left-to-right diagonals;
 centre coming first in vertically symmetrical characters;
 going from outside to inside and close frames last. (Yeromiyani, 2021)

In China, for handwriting learning purposes, the tradition of teaching COS as a fundamental pedagogical element has been going on for centuries (Law et al., 1998, p. 113). In this case, it is important to mention that handwriting differs from drawing. Drawing allows for creativity; however, handwriting requires knowledge in strokes and structure (Liao, 2018). Moreover, following stroke order will “stimulate learners’ perception” and generate a “sensory-evoked activity” (Hong et al., 2021). Furthermore, when learners become familiar with stroke order, the knowledge is “coded in memory” (Giovanni, 1994, p. 337) and provides a reference that will aid the learner when acquiring a new character in the future. In an experiment, researchers discovered that this theory is particularly valid for the initial strokes of a character (Giovanni, 1994, p. 353). The learner’s knowledge of stroke sequence allows the entire complex character to be identified as representative symbols (Giovanni, 1994, p. 340) and assist in recapturing it (Giovanni, 1994, p. 352). In other words, within the formation of memory, stroke sequence serves as the “essential component of the orthographic knowledge of a character, and that this specific motor schema is used as a cue in lexical retrieval” (Giovanni, 1994, p. 337).

2.2 Pedagogical benefit of teaching Bujian (Component)

In China, the Working Committee for National Language and Text (*Guojia Yuyan Wenzhi Gongzuo Weiyuanhui*) published the “Specification of Common Modern Chinese Character Components and Component Names” in 2009 (Zhonghua Renmin Gongheguo Jiaoyubu & Guojia Yuyan Wenzhi Gongzuo Weiyuanhui, 2009). In this publication, the principles for disassembling *hanzi* into *bujian* were regulated, and the rules naming *bujian* were listed (pp. 2-5). Its goal is to provide information about *bujian* for *hanzi* education, dictionary compilation, and *hanzi* information processing (p.1). *Bujian* refers to a “component which can be used to construct a *Hanzi* orthography (Huang, 2017, p. 7) and can be divided into several categories:

Hanzi: a *hanzi* can be comprised of several *hanzi*, such as 吃 (chī, to eat) being comprised of 口 (kǒu, mouth) and 乞 (qǐ, to beg).

Radicals or “abbreviated versions of Hanzi with semantic properties” (Huang, 2017, p.7) such as 氵 (shuǐ, water).

Units between *hanzi* and a stroke, such as 羴 (rèn, sheep variant).

Bujian has several qualities. First, it is an intermediate component (between *hanzi* and stroke). Second, it is a product of a disassembled *hanzi*. Third, *bujian* are mutually independent. Fourth, the disassembling and assembling of *bujian* into *hanzi* are reversible. Fifth, *bujian* is free of the intervention

of *hanzi*'s semantic and phonologic entities. (Pan, n.d.). Nowadays, due to the urgent need of coding, many scholars claim that it is necessary to employ *bujian* as a communication basis for computer programming to allow *hanzi* to be assembled and disassembled electronically (Pan, n.d.). There is a large number of *bujian*. Taking those that are not able to be disassembled to smaller unit as examples, there are 439 in 6097 *hanzi* in traditional Chinese, and 514 in 3500 for simplified Chinese (Huang, 2017, p. 7).

Hanzi is embedded in a structure that is "manipulated at different levels" (Tse et al., 2007, p. 378). As a "sub-lexical units" (Tse et al., 2007, p. 378), *bujian* disclose information about a *hanzi* (Tse et al., 2007, p. 382), contributing to its meaning ("morphological component") or sound ("phonetic components") (Tse et al., 2007, p. 378; Sheng, 2008). It also functions as a mechanism for "spatial configurations" (Tse et al., 2007, p. 377). According to psycho-linguistics, the structural knowledge of *hanzi* and the "part-whole relations" can help learners acquire them (Tse et al., 2007, p. 378). Therefore, some scholars claim that *bujian* should serve as the foundation of *hanzi* teaching (Sheng, 2008). Furthermore, the tremendous labour to memorize COS can be eased by the awareness of *bujian*.

Bujian serves as a beneficial tool for *hanzi* learning as well. A speech therapist in Taiwan shared their clinical experience of assisting a Grade 1 child who constantly made mistakes in writing. There was either a stroke too many, missing, or, basically no recall in how the *hanzi* was written even if it was previously learned. Due to a *bujian* knowledge shortage, the student was not able to disassemble and assemble components of a *hanzi*. As a result:

Since they do not recognize the component 相, they are not able to learn the character 湘 as quickly ... Learning a new character means a brand new learning experience to the student, and it is understandable why the student has a hard time remembering how to write... If they acquired 木, 土, 豆, 寸, then they could have been able to write 樹. The more *bujian* a student knows, the more composite characters they can write. (Liao, 2018)

Therefore, this speech therapist recommended that learners first learn the COS of each *bujian*, and then employ this knowledge to writing a composite character. (Liao, 2018)

2.3 Teaching methods

To reinforce handwriting skills, instructors traditionally focus on the memorization of knowledge (Giovanni, 1994, p. 354). For example, this is how the method of "orally recited, writing in the air (*kou chang shu kong* 口唱书空)" is executed:

Students raise their right hand, point in the air with their index finger, practice how to write by following the strokes that teachers write on the blackboard, and at the same time, they recite the number of strokes orally. (Xu, 2011, p.6)

Through simultaneous visual, audio and bodily activities, memory is installed as a "code" (Giovanni, 1994, p. 354). Then, through repetitive practices, it is reinforced, and the "motor sequence" is able to be recalled and utilized in the future, such as to recognize new *hanzi* (Giovanni, 1994, p. 354; Tse et al., 2007, pp. 375- 376). This type of method is listed by both Ministries of Education in China (2001) and Taiwan (1996) (Tse et al., 2007, p. 379). Similarly, in Japan, extensive practices are integral to the learning process for pupils to write *kanji* (Chinese characters) (Giovanni, 1994, p. 339). However, this teaching method has received criticism. For example, the "bottom-up" manner of knowledge installation follows the sequence of *hanzi*, sentence, paragraph and passage. Students are asked to follow the rules, but memory reinforcement can be difficult (Tse et al., 2007, p. 380). Also, this teaching method is partial to visuality (the shape of *hanzi*) while neglecting "auditory memory", which is also crucial to the formation of a logogram (Huang, 2017, p. 3).

At the same time, the emergence of multimedia teaching tools invites instructors to explore the possibility of pedagogy beyond traditional methods. The function of perceptive stimulation should be

able to be operated by technology (Hong et al. 2021). A research in a Taiwanese elementary school shows that the majority of students (79.17%) affirm that the multimedia teaching tool is an appealing option because the animation, sound and graphs generated helped them memorize the teaching material (Xu, 2011, p. 104). 83.33% of students felt that “time went by fast” (Xu, 2011, p. 107), and the class was “relaxing” and “enjoyable” when they learned with the e-program. Also, they agreed that the tools triggered their interest in learning (Xu, 2011, p. 115). However, simultaneously, more than 50% students affirmed that instructors cannot be wholly replaced by technology. Learners still need teachers to remind them of the important components in the teaching material (Xu, 2011, p. 106) and provide them with opportunities for face-to-face communication (Xu, 2011, p. 107). Moreover, it must be recognized that an excessive amount of multimedia content or overcomplicated design could be burdensome to learners and compromise learning efficacy (Xu, 2011, p. 111). Furthermore, there is no substantial difference in students’ performance between employing multimedia teaching tool and traditional methods such as *kou chang shu kong* (Xu, 2011, p. 103).

Scholars have demonstrated aesthetical and psycho-linguistic accounts of COS and *bujian* acquisition. Memory of COS as well as the ability to predict the structure based on previous knowledge of strokes and *bujian* play important roles in the acquisition of new *hanzi*. Traditional pedagogy highlights memorization, whereas educational multimedia tools allow for more enjoyable learning experiences. Following the review, this research attempts to answer the questions: What is the effect of COS and *bujian* teaching on students’ handwriting? How do learners perceive this way of COS and *bujian* teaching? To motivate and serve Chinese as a Foreign Language (CFL) learners’ interests and curiosity, this paper observes these students’ handwriting as well as collects their experiences and expectations.

3. Methodology

The goals of this paper are to examine the pedagogical benefits of COS and *bujian* in a Chinese language classroom as well as to better understand students’ experiences and needs. In order to achieve them, a research was conducted at an English CEGEP located in metropolitan Montreal, Quebec, from Fall 2021 to Winter 2022. This research was divided in two: handwritten notes and an online survey. Participation was voluntary, the right to withdraw was protected, and both data were collected anonymously.

3.1 Participants

Research subjects were enrolled in Chinese Level I at a CEGEP. The majority, except five who speak Mandarin, Cantonese, Japanese and/or Korean at home, are CFL students who did not have knowledge of either Chinese or *hanzi*. While many of them speak English and/or French at home, some speak Spanish, Italian, Vietnamese, Arabic, Greek, Urdu, Punjabi, Romanian, Bulgarian, Creole, Kabyle and Russian. The subjects are from diverse backgrounds. 12% of the students (six students) took Chinese courses before taking the Chinese language course at the CEGEP level, such as at kindergarten, elementary school, high school and extracurricular education institutions. Among them, 50% learned COS.

CEGEPs (Collège d’enseignement général et professionnel in French; General and Vocational College in English) serve as a unique program that makes the Quebec education system different from other provinces. It is a transitional learning phase between secondary school and university, or juvenile and adulthood. During this phase, based on their goals, students undergo a training process preparing them either to pursue university education or to solidify vocational skills for technical professions. The former is minimum two years in length, and the latter, normally three years. Students normally enter CEGEPs at age of 17 (“What are,” n.d.). Chinese Level 1 is a course offered by the Department of Linguistics, and students were all from linguistics backgrounds with solid training in theories and language learning experiences. The chosen textbook was *Chinese Link: Beginner Chinese* (Simplified Character Version), Level 1, Part 1 (Wu et al. 2010). The workload allocated to one semester was:

Total class hours: 45 hours

Total chapters covered: Chapter 1 to Chapter 6

Hanzi studied: 100 *hanzi*

Taking Chapter 1 as an example, it was expected to be completed within 3 meetings (4.5 hours), during which select characters are taught and learned. COS has been included in the curriculum as an integral element to pedagogy. The instructor employed a method similar to *kou chang shu kong*—writing the *hanzi* on the board and having the students follow along, step by step, on paper with pen or pencil.

3.2 Instruments

3.2.1 In-class collection of handwritten notes

Two sentences in *hanzi* were presented on a Powerpoint slide. For the two sentences presented on the slide, there were new *hanzi* that the students have not learned in the previous classes and some with which they were already familiar.

1. 我家有爸爸、妈妈、哥哥、弟弟、姐姐、妹妹和我。

(Wǒ jiā yǒu bàba, māma, gēge, dìdi, jiějie, mèimei hé wǒ. In my family, there are my dad, mom, older brother, younger brother, older sister, younger sister and me.)

2. 这是我父母。

(Zhè shì wǒ fùmǔ. These are my parents.)

The *hanzi* in these sentences were divided into two categories:

First Category: the new *hanzi* that students have never learned before

家 (jiā, family)、爸 (bà, dad)、妈 (mā, mom)、哥 (gē, older brother)、弟 (dì, younger brother)、姐 (jiě, older sister)、妹 (mèi, younger sister)、父 (fù, father)、母 (mǔ, mother)

Second Category: the *hanzi* that students already knew

我 (wǒ, me)、有 (yǒu, to have)、和 (hé, and)、这 (zhè, this)、是 (shì, to be)

To test if the students' previous knowledge of COS and *bujian* helped them predict the structure of a new *hanzi*, only the handwritten samples of the nine characters in the first category were analyzed.

3.2.2 Online survey

An online survey was created on MS Forms (Appendix 1). The survey included 18 questions that can be divided into several categories: the learners' characteristics (i.e., language background and experiences of previous Mandarin training), the learners' behaviour (i.e., if the subject incorporates COS skills into their learning process), the learners' opinion (i.e., if the subject agrees that COS helps them acquire the Chinese language), and the learners' expectations (i.e., what the subject expects that the instructors and they themselves implant to facilitate Chinese language acquisition). The ultimate goal of this survey was to discover learners' needs as well as strategies that an instructor can consider employing in a Chinese language classroom.

3.3 Procedure

3.3.1 In-class collection of handwritten samples

15 research subjects were enrolled in this research and took about 10 minutes. In order to provide a stress-free environment, the researcher left the classroom while the students were doing the handwriting exercises.

Step 1: first handwritten exercise. As a control sample, subjects copied the sentences on their sheet before they learned the correct stroke orders for the new *hanzi*. They would then do the second handwritten exercise following the demonstration on the same paper for comparison.

Step 2: demonstration of the stroke orders. The researcher demonstrated how to write the *hanzi* by using the method similar to *Kou Chang Shu Kong*:

1. the researcher showed the participants how to write the Chinese characters step by step and counted the numbers of each stroke;
2. the participants followed the researcher's steps and wrote down the Chinese characters step by step on their sheets.

Because the researcher believes that the participants could learn how to write the characters with the correct sequence, this method was employed. If they can write the characters and count out each stroke's number simultaneously, it may reinforce the correct order of writing each stroke. As some Chinese characters strokes contain two movements, such as the second stroke of 口 (kǒu, mouth), if the researcher counts "two" while writing the second stroke, the participants could understand that the horizontal line and the vertical line (*hengzhe* 横折) are considered as one stroke.

Step 3: second handwritten samples. After learning the stroke orders, the participants recopied the same sentences on the same piece of paper. With this data, the researchers were able to compare the participants' characters prior to and after learning the stroke orders, in order to determine if there are any differences.

The 15 subjects' samples were collected, compared and scrutinized. The comparison focused on students' handwriting before and after the instructions of COS were given.

3.3.2 Online survey

47 research subjects were enrolled in this research. Subjects could access the survey at any given time, for a duration of two weeks. This part of the research took around 30 minutes.

The results of both the in-class collection of handwritten notes and the online survey were qualitatively analyzed by the authors. For the first part, the analysis focused on the accuracy and aesthetics of the handwriting. For the second part, the analysis focused on the subjects' learning experiences and the subjective understanding of the teaching methods surrounding COS.

4. Results and Discussion

4.1 In-class collection of handwritten notes

As shown in Table 2, there was a difference in the number of mistakes.

Table 2

Number of Mistakes Subjects Made before and after the Stroke Order Instructions Were Given

	New Chinese Characters	Number of Mistakes (Before Learning the stroke Orders)	Number of Mistakes (After learning the Stroke Orders)
1	家 (jiā, family)	13/15	6/15
2	爸 (bà, dad)	8/15	3/15
3	妈 (mā, mom)	5/15	1/15
4	哥 (gē, older brother)	12/15	2/15
5	弟 (dì, younger brother)	5/15	2/15
6	姐 (jiě, older sister)	6/15	2/15

7	妹 (mèi, younger sister)	8/15	2/15
8	父 (fù, father)	0/15	0/15
9	母 (mǔ, mother)	13/15	5/15

家 (jiā, family)

家 is composed of two *bujian*: 宀 (mián, roof) and 豕 (shǐ, swine). Both contribute to the meaning of the *hanzi*. As students have never learned 豕 before, it seems that students had a harder time to write this *bujian*. Some students placed the third stroke of 豕 — the bend and hook — incorrectly (Figure 1), and/or some students did not put a hook at the end of it (Figure 2). Some students did not know where to properly place the last two strokes of 豕 — the throw away and press down strokes (Figure 3).

Figure 1

Handwriting Example of 家 (jiā, family) before COS Demonstration

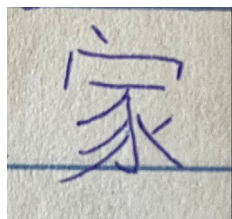


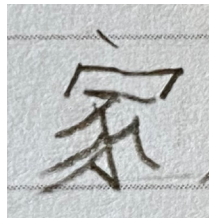
Figure 2

Handwriting Example of 家 (jiā, family) before COS Demonstration



Figure 3

Handwriting Example of 家 (jiā, family) before COS Demonstration



After being taught the 家 COS, most students were able to correct their mistakes. They seem to know how to write the second *bujian* 豕 properly—placing the third stroke of 豕, bend and hook, in the right place (Figure 4), adding a hook at the end of the third stroke of 豕 (Figure 5) and writing the last two strokes, throw away and press down, correctly (Figure 6). Please compare Figures 1 and 4, 2 and 5, and 3 and 6 to see the improvements.

Figure 4

Handwriting Example of 家 (jiā, family) after COS Demonstration

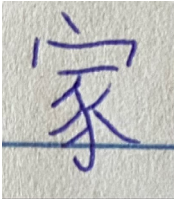


Figure 5

Handwriting Example of 家 (jiā, family) after COS Demonstration

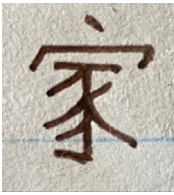


Figure 6

Handwriting Example of 家 (jiā, family) after COS Demonstration



爸 (bà, dad)

爸 is composed of two *bujian*: 父 (bà, dad) and 巴 (bā, a bar). The former contributes to the meaning of the *hanzi*, while the latter, its sound. Students have never learned either *bujian* before. For the *bujian* 父, some students wrote the first (left-falling) and second (right-falling) strokes too far away from the rest of the *bujian* and their 父 and 巴 were set too far apart (Figure 7). For the *bujian* 巴, instead of closing the box on the left hand side, some wrote a regular box and added an extra stroke underneath it (Figure 8). Finally, some students did not place the last stroke in the right place and missed the hook at the end of it (Figure 9).

Figure 7

Handwriting Example of 爸 (bà, dad) before COS Demonstration

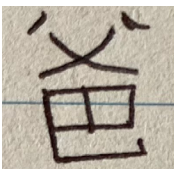


Figure 8

Handwriting Example of 爸 (bà, dad) before COS Demonstration

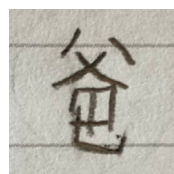
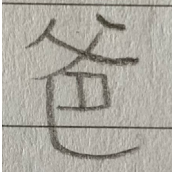


Figure 9

Handwriting Example of 爸 (bà, dad) before COS Demonstration



After learning the 爸 COS, many students were able to correct their mistakes. They placed the bujian 父 and 巴 properly. They wrote the bujian 巴 with the correct stroke order and added the requisite hook at the end. Please compare Figures 7 and 10, 8 and 11, and 9 and 12 to see the improvements.

Figure 10

Handwriting Example of 爸 (bà, dad) after COS Demonstration

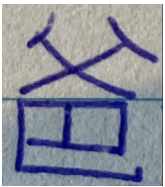


Figure 11

Handwriting Example of 爸 (bà, dad) after COS Demonstration

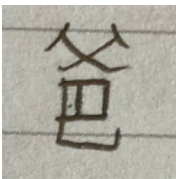
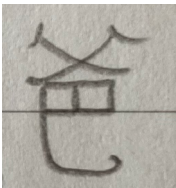


Figure 12

Handwriting Example of 爸 (bà, dad) after COS Demonstration



妈 (mā, mom)

妈 is composed of two bujian: 女 (nǚ, woman) and 马 (mǎ, horse). The former contributes to the meaning of the hanzi, while the latter, its sound. As students learned both bujian in previous lessons, as 女 in 好 (hǎo, good) and 马 in 吗 (ma, question particle), they seemed to have an easier time writing this character. For the bujian 女, some students wrote the second stroke (throw away) too high (Figure 13). For the bujian 马, a few students made mistakes on the first stroke (horizontal and vertical) — instead of writing the first stroke as one single stroke, they separated the horizontal line and the vertical line and thus, created one extra stroke for this bujian (Figure 14). A few students made mistakes on the second stroke of 马 — instead of writing the second stroke as one single stroke, they separated the vertical line and the horizontal line, and thus, created an extra stroke for this bujian (Figure 15). Some students did not put the hook at the end of the second stroke (Figure 13).

Figure 13

Handwriting Example of 妈 (mā, mom) before COS Demonstration

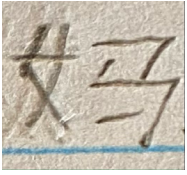


Figure 14

Handwriting Example of 妈 (mā, mom) before COS Demonstration

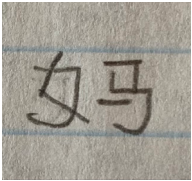
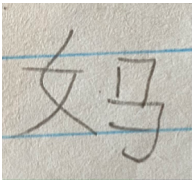


Figure 15

Handwriting Example of 妈 (mā, mom) before COS Demonstration



After being taught the COS, students corrected their mistakes. For the *bujian* 女, the second stroke was no longer too high. They wrote the *bujian* 马 with a correct stroke order and put a hook at the end of the second stroke. Please compare Figures 13 and 16, 14 and 17, and 15 and 18 to see the improvements.

Figure 16

Handwriting Example of 妈 (mā, mom) after COS Demonstration

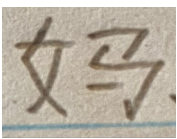


Figure 17

Handwriting Example of 妈 (mā, mom) after COS Demonstration

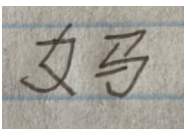
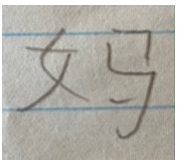


Figure 18

Handwriting Example of 妈 (mā, mom) after COS Demonstration



哥 (*gē*, older brother)

哥 is composed of two repetitive *bujian*: 可 (*kě*, okay) (The first *bujian* 可 does not have a hook for the second stroke). Both contribute to the sound of the *hanzi*. Students learned this *bujian* from the vocabulary word 可是 (*kěshi*, but) in a previous class. Lots of students seemed to have a hard time writing the first *bujian* 可 with correct stroke orders. Some students combined the first (horizontal) and second (vertical) strokes and wrote them as a single stroke (Figure 19). Some students added a hook at the end of the first stroke and the fifth stroke (Figure 20). Some students separated the two *bujian* 可 too much (Figure 19).

Figure 19

Handwriting Example of 哥 (*gē*, older brother) before COS Demonstration

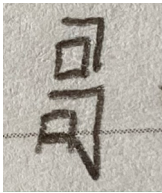
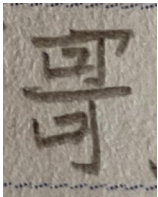


Figure 20

Handwriting Example of 哥 (*gē*, older brother) before COS Demonstration



When following the stroke orders, majority of the students wrote 哥 properly. Please compare Figures 19 and 21, and 20 and 22 to see the improvements.

Figure 21

Handwriting Example of 哥 (*gē*, older brother) after COS Demonstration

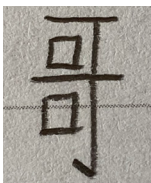
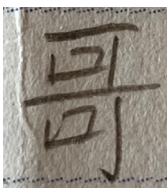


Figure 22

Handwriting Example of 哥 (*gē*, older brother) after COS Demonstration



弟 (*dì*, younger brother)

The radical for 弟 is 弓 (*gōng*1, a bow), which was not previously taught in class. However, in general, students did not have a hard time writing this character. Some students made mistakes at the fifth stroke

by making it too long (Figure 23). After following the COS, they corrected their errors (Figure 24). All in all, the *hanzi* was appropriately written by everyone. One explanation could be that the subjects had been exposed to the last part of 弓, folding and vertical hook, when they learned how to write 妈. Another explanation was that, for stroke no. 3-5, the subject might not have been following COS but simply wrote it with only one stroke. This writing process has to be observed and examined closer in future studies.

Figure 23

Handwriting Example of 弟 (dì, younger brother) before COS Demonstration

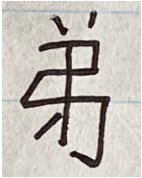
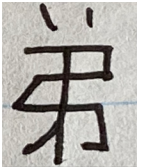


Figure 24

Handwriting Example of 弟 (dì, younger brother) after COS Demonstration



姐 (jiě, older sister)

姐 is composed of two *bujian*: 女 (nǚ, woman) and 且 (qiě, moreover). The former contributes to the meaning of the *hanzi*, while the latter, its sound. Although students have never learned the *bujian* 且 in previous classes, it is similar to other *bujian* that students have learned before, such as 目 (mù, eyes). Therefore, in general, students did not have many problems writing this Chinese character. Some made mistakes on the fifth stroke (horizontal) of the *bujian* 且. The fifth stroke is supposed to be a little bit longer than the box, but some students wrote it as 目 (Figure 25). After learning the stroke order, students corrected this mistake (Figure 26).

Figure 25

Handwriting Example of 姐 (jiě, older sister) before COS Demonstration

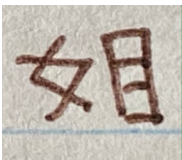
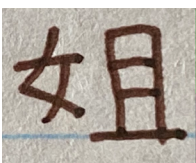


Figure 26

Handwriting Example of 姐 (jiě, older sister) after COS Demonstration



妹 (*mèi*, younger sister)

妹 is composed of two *bujian*: 女 (*nǚ*, woman) and 未 (*wèi*, not or not yet). The former contributes to the meaning of the *hanzi*, while the latter, its sound. Since students have never learned *bujian* 未, some of the students did not realize that the first horizontal line should be shorter than the second horizontal line and they wrote 末 (*mò*, end) instead (Figure 27). Most of them have corrected their mistakes after learning its stroke order (Figure 28).

Figure 27

Handwriting Example of 妹 (*mèi*, younger sister) before COS Demonstration

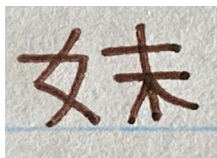
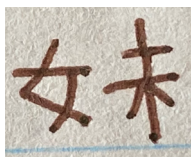


Figure 28

Handwriting Example of 妹 (*mèi*, younger sister) after COS Demonstration



父 (*fù*, father)

Although students have never learned 父, it is rather easy for them to write this *hanzi*. None of the students made mistakes writing this *hanzi*. The reason might be similar to 弟 (*dì*, younger brother).

母 (*mǔ*, mother)

As the students have never learned 母 (*mǔ*, mother) or other *bujian* that follow similar stroke orders, many students had a hard time writing this character. They wrote 母 same way as they wrote 日 (*rì*, day) (Figure 29), which they have learned and are familiar with. Some students stacked two boxes together (Figure 30). Some students did not put a longer horizontal line (Figure 31).

Figure 29

Handwriting Example of 母 (*mǔ*, mother) before COS Demonstration



Figure 30

Handwriting Example of 母 (*mǔ*, mother) before COS Demonstration

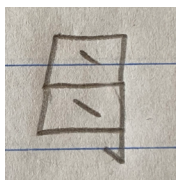
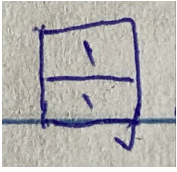


Figure 31

Handwriting example of 母 (mǔ, mother) before COS demonstration



After learning the COS, many students corrected their mistakes. They wrote 母 in COS and the horizontal line is longer than the box. Please compare Figures 29 and 32, 30 and 33, and 31 and 34 to see the improvements.

Figure 32

Handwriting Example of 母 (mǔ, mother) after COS Demonstration

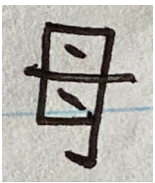


Figure 33

Handwriting Example of 母 (mǔ, mother) after COS Demonstration

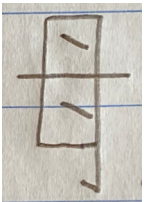
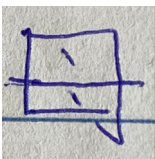


Figure 34

Handwriting Example of 母 (mǔ, mother) after COS Demonstration



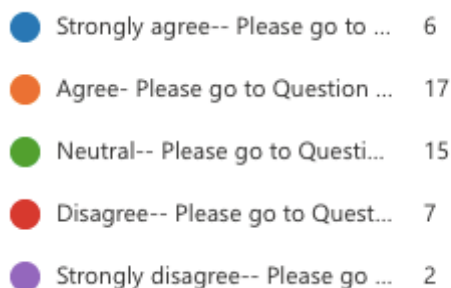
The results above affirm that the output of handwriting is shaped by the knowledge of COS and *bujian*. The COS demonstration on the blackboard showed learners all the details of the shape and structure of the *hanzi*, and this acquisition served as the key that differentiated the handwriting from those before learning the COS. Moreover, the coded memory learned before this research triggered a perceptive and sensory mechanism that allow learners to anticipate how other *hanzi* can be written (Giovanni, 1994, p. 337; Hong et al. 2021). At the same time, subjects' familiarity with *bujian* also allows the memory-activation mechanism to function. As shown in the research, many *hanzi* can be disassembled into sub-units that either indicates its meaning or its sound (Tse et al., 2007, p. 378; Sheng, 2008). Subjects' awareness of a specific *bujian* can determine the accuracy of the outcome. Based on the above, COS and *bujian* should be both included in the pedagogy of Chinese for CFL students.

4.2 Online survey

4.2.1 Opinions and behaviours of learning hanzi and COS

Figure 35

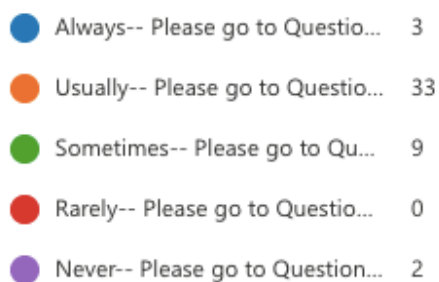
Did You Find it Difficult to Learn Chinese Characters



As shown in Figure 35, around half of the subjects did not share the opinion that *hanzi* is difficult to learn. Another almost 50% of students found it challenging to learn *hanzi*. While being asked why, the subjects explained: first, it is hard to remember *hanzi*, since they have many strokes and components, making it difficult to memorize them. It is time-consuming, often requiring a lot of practice, and small details (such as a hook) can easily be forgotten. Moreover, some *hanzi* are combined with others to form new words. This made learning *hanzi* complicated. Second, *hanzi* are very different from Latin alphabets. Since there are no reference materials or similarities to English or French, learning *hanzi* became very challenging. These findings echo the scholarly discussion analyzed in the Literature Review (Huang, 2017).

Figure 36

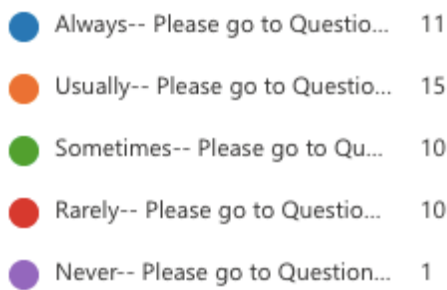
Do You Write Chinese Characters in the Correct Stroke Order?



The majority of subjects followed COS frequently. On the one hand, some subjects responded that COS made it easier for visual learners: “I think following the stroke order teaches us the most intuitive way of writing a character. It’s like following one big brush stroke, rather than seeing the strokes as many different, disconnected things”. However, on the other hand, interestingly, one subject did not have the habit of following stroke sequence, even when they write English alphabets: “I write them how I assume it would be the easiest”. Based on the Literature Review, it is reasonable to assume that for the purpose of “ease”, this subject would time to time follow COS unintentionally. As analyzed in the Literature Review, the design of *hanzi* generates “the most strokes with the least amount of hand movement” (“Why Chinese,” 2018). COS results from the physical need of less bodily movements.

Figure 37

Do You Find Your Characters Look Different with and without Following Stroke Orders?



As shown in Figure 37, over 75% of the subjects found their *hanzi* looked different after following COS than when they did not. According to them, their *hanzi* looked neither clean nor accurate when COS was not followed. Their writing often looked disproportionate, awkward and crooked with wrong stroke order and, oftentimes, they did not have the right shape or length. For example, as one subject put, “if you prematurely add the vertical stroke in the middle of “里 (lǐ, inside)”, it will look very weird”. Another subject said: “Usually if I don’t follow stroke order I’d misplace certain lines, for example if there’s a line in a box, the line might go outside of the box”. One subject said that “(if I do not follow the stroke order,) usually I would be missing hooks, I’d start a stroke in the wrong place or connect lines where they shouldn’t be connected”. On the contrary, many subjects stated that their characters looked better, neater and prettier when they followed COS. Their characters fit into the space and became legible. They resembled what the actual characters are supposed to look like more closely. “The characters begin to look like the teacher’s”, as one subject stated. Another subject mentioned that “[w]hen I follow the correct stroke order, my *hanzi* looks more balanced and it takes the appropriate amount of space (not too big or not too small). When I don’t follow the correct order, it becomes difficult to space my strokes properly”.

Subjects generally showed a positive attitude to learning COS. They responded that COS allowed handwriting to be “more structured”. As one subject said, “When there is an intricate character with a lot of strokes, the stroke order acts like a path, so it’s easier to know where to start”. Another subject stated, “Because of the stroke trail; with a brush pen, you can notice where a stroke ended”. Indeed, some subjects also found it more efficient, comfortable and quicker to write a character in COS, “since one stroke follows another”. One subject said that “when I follow the stroke order, I can also write faster, and the characters look better”. According to them, for some *hanzi*, it seems impossible to guess where to start writing from, and COS simplifies learning the Chinese language by establishing a clear process. Moreover, some subjects shared that COS helps them memorize the overall look of the *hanzi*. In addition, one subject wrote, “I won’t remember how to write it, like I could forget a stroke in the character without using the correct stroke order”. Another student has a similar comment, “I would prefer learning the stroke order because it is difficult to remember a character if you write it in different way every time”. COS is embedded in memory as an anchor. One subject said, “In writing it how I want, I mess up a lot of times and don’t know where I’m at anymore”. Another student also stated, “It looks like I hesitate when I don’t follow stroke orders”. Like one student said, “the habits you build up from using stroke order show in the result”. This result conforms to the Literature Review that COS knowledge allows learners to visualize and predict the formation of a *hanzi* (Giovanni, 1994, p. 337). Based on the above, it is not surprising that 91% of the subjects agree that they prefer learning COS.

Many subjects regard COS as an integral part to *hanzi*: “we wouldn’t be learning (*hanzi*) properly without knowing the stroke order”. Interestingly, many subjects relate COS with Chinese culture. They believe it is the “proper way” because it is the tradition and the real way; therefore, it is important. Another student also mentioned, “I just know how much it’s important to write the characters correctly

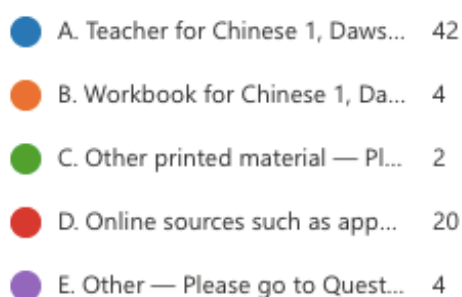
because it can confuse native Chinese”. Moreover, to them, the design of COS originates from the wisdom of civilization. One subject wrote, “the way its [*sic*] meant to be is always, or mostly, for the better”. Another subject wrote: “I would get a glimpse of the real experience of writing in Chinese. The ones who decided to put an order were smart, so might as well follow it”. Some students believe that stroke order plays a huge role in terms of the cultural aspect of the Chinese language, and thus, learning it is, in a way, appreciating the language as a whole. COS allows learners to understand the spirit of the language. One student wrote, “I think it adds beauty to the language and isn’t much of a problem once you know it”.

However, when being asked if COS should be included in pedagogy, a small number of subjects (9%) gave negative answers. To them, despite it being helpful, COS is not essential and did not make the product (*hanzi*) that different: “the stroke order does not really change the way I write”. They are satisfied as long as the characters look right and convey the right meaning. Moreover, they critiqued that COS sometimes confused them and made learning Chinese language more complicated. COS makes the task of handwriting more demanding since it adds extra work. Therefore, “I tend to not think of stroke order when writing characters”. Based on the result, pedagogically speaking, if COS is essential and beneficial, educators should generate methods that could deliver these skills without confusing students at the same time.

4.2.2 Opinions and behaviours of learning tools including multimedia teaching tools

Figure 38

Which Source(s) Did You Use to Learn Stroke Orders of Chinese Characters?



Since the instructor of this course included COS in the curriculum, it is not surprising to see that it served as a major teaching tool shared by most of the subjects. Meanwhile, more than 90% subjects highly value in-person teaching of COS. As mentioned above, the instructor employed a method similar to *kou chan shu kong*. To the students, to “actually” see how a person write helps. One student wrote, “It was very helpful because writing the character at the same time as the teacher helped me remember the stroke order for the characters”. Another student wrote, “It was [a] proper way of teaching. It was easy and simple to follow the teacher’s instructions.” Another student has a similar view, “Writing down the character while following the example of the teacher on the blackboard, who is also vocalizing the number of the stroke while writing, helps me memorize the stroke order more easily.” In addition, to the students, in-person learning allows the instructor to provide learners with sufficient explications and immediate feedback. During this process, the instructor and learners can take their time to learn properly. The students appreciate the instructor’s tips, such as how to remember the stroke order better and how the character was invented. For example, one student wrote, “The teacher gave many tips on remembering the characters, like the moustache for father or the house with pigs”.

Other than in-person learning, the subjects had a variety of tools to assist them in learning COS such as workbooks, apps and websites. The Chinese handbook/workbook is the workbook accompanied

with the textbook used in this class. Applications include [Pleco](#) (an English and Chinese Dictionary application for smartphone devices), [Chinese Stroke Order Writing](#) (a smartphone software that shows the radical, the number of strokes, animated stroke order step by step), and [Hanping Lite](#) (an English and Chinese Dictionary application for smartphone devices). Some of the features include Chinese handwriting recognition; *hanzi* stroke animations; audio pronunciation and example sentences). Websites include [Youtube](#), [Quizlet](#) (a digital pop-quiz database, a tool to create quizzes. Some of the features include creating flashcards; multiple choice-style quizzes; spelling tests; true-or-false questions; match games and a live game mode that allows for multiple students to work collaboratively), [purpleculture.net](#) (a Chinese to Pinyin/Zhuyin Conversion Tool that allows users to convert Chinese text into Pinyin/Zhuyin. It also supports conversion from photo images. Users could also download stroke order worksheets), [strokeorder.info](#) (a website that shows animated stroke orders step by step), [archchinese.com](#) (a Chinese language learning website. Users could view stroke order animations; listen to a recording for characters; print out flashcards and design Chinese writing worksheets), and [dictionary.writtenchinese.com](#) (an online dictionary that provides radicals, animated stroke orders, sound recordings and example sentences).

Some students found online sources to be helpful. After class, they could visit websites if they needed to. The online animated character shows step by step how to write the *hanzi* and students can easily replay it. One subject wrote, “The GIFs and the writing (on the chalkboard) were very useful. Showing the character origin (in class) helps in remembering which part should be started with at first. Showing the animated stroke order is a good visual way to introduce a character”.

However, not all the students found these online learning tools helpful. The majority of subjects believed learning from a teacher in-person to be more beneficial. Moreover, not surprisingly, they agree that repetitive practices are crucial means, which can be assisted with the online sources. In addition, they utilized flashcards as a useful review tool with arrows and COS indicated on them. When asked if they have any advice for Chinese language instructors, they suggested that instructors should demonstrate COS slowly, one by one, on a board, to make sure all the students can see every step and follow along. They should also repeat the demonstration multiple times, explain the basic rules of COS and show students how to make patterns or flow in their writing: “Learning the basic stroke order principles and rules is helpful, so you can already guess the correct stroke order for most characters”. Instructors should assign sufficient homework that allows students to practice repetitively. Despite being tedious and time consuming, subjects agreed that repetitive practices serve as one of the most efficacious way to learn COS and *hanzi*. In addition, they could share some online resources and templates with other students. This result conforms to the analysis in the Literature Review (Xu, 2011). Generally, students acknowledged the assistance of multimedia teaching tools for COS; however, they did not agree that in-person, step-by-step teaching method can be replaced by these programs. In fact, most students believed teachers should serve as the primary source for COS knowledge. Moreover, they highly trust the advice given by teachers, including their on-site guidance and suggestion of learning tools.

4.3 Responding to the research questions

What is the effect of COS and *bujian* teaching on students’ handwriting? The results from this research strongly retained the hypothesis that COS and *bujian* play crucial roles in the learning of *hanzi*. As the Literature Review demonstrates, learners’ previous knowledge of COS and *bujian* helps them predict the writing of a new character. The in-class collection of handwritten samples research focuses on the characters that the students have not learned. The accuracy and aesthetics of the *hanzi* show significant improvement when reviewing the students’ handwriting before and after being taught COS. In addition, the results showed that students’ previous knowledge of COS and *bujian* helped them write a new character correctly.

How do learners perceive COS and *bujian* teaching? The investigation of the learners’ opinions, to some extent, conforms to the findings of the Literature Review. While some students did not find *hanzi*

challenging to learn, some had trouble due to its demand of memory, time and labour. Moreover, being complicated and different from Latin alphabet created barriers to acquiring *hanzi*. The investigation of the learners' behaviours shows that, to master these skills, many of the subjects follow COS to write *hanzi*, not only because COS helps in writing them correctly and nicely, but also because it makes it easier. As the Literature Review suggests, the easiness might result from the coherence between the cognitive activities and bodily movements.

A minority of subjects did not believe that COS should be included in the pedagogy since it seems that decent handwriting can be achieved without knowledge of COS. Furthermore, the inclusion of COS in pedagogy increases workload and complicates the learning process. Educators should generate methods that could deliver these skills without confusing students at the same time. Learners' needs, participation and feedback can play important roles in the construction of pedagogy. In the survey, students expressed their trust in the advice given by teachers, including their on-site guidance and suggestion of learning tools. Instructors are expected to serve as the primary source of *hanzi* knowledge, whereas multimedia teachings tools, such as the examples shared by the students, can serve as a strong support instrument to learn COS and *bujian*. Nonetheless, these tools cannot replace an instructor's key role in a classroom. The traditional approaches such as an instructor's in-person guidance, *kou chang shu kong*, and repetitive practices that emphasizes memory reinforcement are still proven to be efficacious. Nonetheless, a learner-oriented spirit exercised by the instructor's attentiveness should be also highlighted. By doing so, the learning process can be engaging and interesting, and the outcome can be far-reaching and long-lasting.

5. Conclusion

This paper aims to present CFL students the pedagogical benefit of learning COS and *bujian* for the purpose of learning *hanzi*. Moreover, this paper aims to strongly encourage learners to incorporate COS and *bujian* into their learning process. Learning *hanzi* has been regarded as a challenging task due to its complex strokes, the rupture between shape and sound, and the demanding labour required by traditional teaching methods that focus on rote and memory reinforcement. In other words, *hanzi* handwriting is a bodily movement that involves psychological and physical collaboration. For Chinese language instructors, a teaching method that facilitates and stimulates such perceptual process is of strong demand. Traditionally, the familiarity with COS has been regarded as the key to accurate handwriting because COS activates perception and sensory activities that constructs *hanzi*. Moreover, the knowledge of COS assists learners in predicting the structure of any new *hanzi* they can acquire. In addition, *bujian* serves as the key medium that delivers the meaning or sound of a *hanzi*. The logical connection between part (*bujian*) and whole (*hanzi*) generates learners' comprehension of the structure and the space where a *hanzi* is formed.

In order to explore efficient and efficacious teaching methods for CFL students in higher education institutions, this paper examines the pedagogical benefits of COS and *bujian*. The research was conducted in a CEGEP located in metropolitan Montreal, Quebec. The results showed that students' knowledge of COS and *bujian* improves the outcome of their handwriting. When writing *hanzi* without being demonstrated COS, students tended to make mistakes in strokes, shapes or structure, such as an extra hook, broken stroke or asymmetrical appearance. However, after being instructed how to follow COS, the mistakes decreased. Moreover, the effects of COS interweaved with students' previous knowledge of *bujian* are noticeable. When students wrote new *hanzi* that were comprised of *bujian* that they had been exposed to, they often did so correctly, with appropriate shapes and space arrangements. Even for *hanzi* that do not have the obvious appearance of familiar *bujian*, it seemed that students' previous knowledge could have been applied. As a result, the outcome was positive. Students' surveys further affirmed their appreciation of COS and their preference of the instructor's in-person guide while taking advantage of multimedia teaching tools for assistance.

References

- Giovanni, F. d'A. (1994). Order of strokes writing as a cue for retrieval in reading Chinese characters. *European Journal of Cognitive Psychology*, 6(4), 337–355.
- Hong, J-C, Tai, K-H, Hwang, M-Y & Lin, P-H. (2021). Comparing the effects of stroke-appearing and stroke-disappearing on learning the order of strokes in Chinese characters. *Frontiers in Psychology*, 12, 704457. <https://doi.org/10.3389/fpsyg.2021.704457>
- Huang, C.-Y. (2017). The graphabet and bujian approach at acquiring Hanzi (Chinese Character) writing skill. *L1-Educational Studies in Language and Literature*, 17, 1-35. <https://doi.org/10.17239/L1ESLL-10.17239/L1ESLL-2017.17.03.07>
- Law, N., Ki, W.W., Chung, A.L.S., Ko, P.Y., Lam, H.C. (1998). Children's stroke sequence errors in writing Chinese characters. In: Leong, C.K., Tamaoka, K. (Eds.), *Cognitive processing of the Chinese and the Japanese languages* (pp. 113–138). Kluwer Academic Publishers.
- Liao, Wanlin (2018, May 6). 卫教-为什么写字一定要照笔顺? [Health education-Why definitely following stroke sequences when writing characters?]. 苹果树语言开花: 语言治疗师廖婉霖 [Apple tree language bloom: Speech therapist Liao Wanlin]. <https://appletreeslp.blogspot.com/2018/05/blog-post.html>
- Pan, Defu (n.d.). 汉字部件系统研究 [A research on the Component system of Chinese character]. 语言文字网 [Language and Character Network]. <http://www.yywzw.com/pan/pan-03b-02.htm>
- Sheng, Jiyan (2008, March 5). 谈华文教学中汉语的“部件教学” [Discussing component pedagogy in Chinese language pedagogy]. 中国华文教育网 [Overseas Chinese language and culture education online]. http://www.hwjyw.com/jxyd/xskj/200803/t20080305_13542.shtml
- Tse, S. K., Marton F., Ki, W. W., & Loh, E. K. Y. (2007). An integrative perceptual approach for teaching Chinese characters. *Instructional Science*, 35(5), 375–406.
- What are cégeps? (n.d.) Service Régional d' Admission du Montréal Métropolitain. Retrieved February 4, 2022, from <https://www.sram.qc.ca/international-student/what-are-cegeps>
- Why Chinese stroke order is important and how to master it?. (2018, March 28). China Services Info: Your Online Guide to Govt Services. Retrieved February 4, 2022, from <https://govt.chinadaily.com.cn/s/201803/28/WS5c062615498eefb3fe46e11d/why-chinese-stroke-order-is-important-and-how-to-master-it.html>
- Wu, S.-m., Yu, Y., Zhang, Y., & Tian. W. (2010). Chinese link: Beginner Chinese (Simplified character version), Level 1, Part 1 (2nd ed.). Pearson.
- Xu, Liting (2011). 笔顺学习网之教学成效探讨——以国小中年级为例 [The study of teaching effectiveness in using learning program for Chinese stroke orders -An example in the middle grade of elementary school]. [Master's thesis, National Formosa University]. <http://ntcuir.ntcu.edu.tw/bitstream/987654321/9684/2/91-367.pdf>
- Yeromiyana, T. (2021, December 21). The fundamentals of Chinese stroke order. *CLI (The Chinese Language Institute)*. <https://studycli.org/chinese-characters/chinese-stroke-order/>
- Zhonghua Renmin Gongheguo Jiaoyubu [Ministry of Education of People's Republic of China] & Guojia Yuyan Wenzhi Gongzuo Weiyuanhui [Working Committee for National Language and Text]. (2009). 现代常用字部件及部件名称规范 [Specification of Common Modern Chinese Character Components and Component Names].

Joy Cheng Yu Lin, MA, is a faculty member in the Department of Modern Languages at Dawson College, located in Montreal, Quebec, Canada. She is also an adjunct faculty member in the Department

of Classics, Modern Languages and Linguistics at Concordia University. She teaches beginner to advanced Mandarin Chinese language courses and several Arts and Culture courses.

Grace Cheng-Ying Lin, PhD, is an adjunct faculty member in the Department of Classics, Modern Languages and Linguistics at Concordia University, located in Montreal, Canada. She teaches courses including Introduction to Chinese I and II, Intermediate Modern Chinese I and II, as well as Chinese for Business.

汉字笔画与部件教学：预科学院学生学习经验分析

林承豫

蒙特利尔道森学院，加拿大

林承颖

蒙特利尔康科迪亚大学，加拿大

摘要

汉字学习往往被视为困难的任务，原因在复杂的笔画、互不连贯的字形和字音、强调记忆和大量劳力付出的传统教学法。本篇论文面向以中文作为外语学习的读者，列举正确掌握笔画顺序和部件的知识对于学习汉字的教育优势。在魁北克蒙特利尔市一所预科学院收集的资料显示，学习者对笔画顺序和部件的掌握有助提升书写汉字的表现，相反，学习过程若缺乏正确笔画顺序的演示，笔画、字形、结构书写的错误增加，比如多余的笔画、失衡的形体等等，在指引学习笔画顺序后，错误减少。值得注意的是，笔画顺序的表现也与学生已有的部件知识相关，当书写一个具备熟悉部件的全新汉字，学生倾向能正确书写，恰当表现形体和空间分配。学生在意见调查的反馈更进一步肯定笔画顺序知识的价值，教学法方面，学生偏好教师面对面的指引，同时肯定多媒体科技的辅助角色。

关键词

汉字，部件，笔画，多媒体教学，中文作为第二语言

林承豫，加拿大蒙特利尔道森学院语言系兼任中文教师，加拿大蒙特利尔康科迪亚大学古典文学、现代语言、语言学系兼任教师，教授初级至高级汉语课及文化课等课程。

林承颖，加拿大蒙特利尔康科迪亚大学古典文学、现代语言、语言学系兼任教师，教授初级中文、中级中文、商业汉语等课程。