

Developing Initial Literacy in Chinese

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Introduction

One of the biggest challenges of learning Chinese at any level of the K-16 spectrum is the challenge of literacy development, learning to read and write. This is especially true when students are first introduced to Chinese orthography, its character-based writing system. This Brief outlines the issues that programs need to consider as students begin to develop literacy in Chinese. It also explains what it means that Chinese is a character-based language, describes differences between simplified and traditional characters, discusses when and why to teach and use hanyu pinyin (or pinyin in this Brief, a system that uses the Roman alphabet to help learners sound out characters in Mandarin), and makes recommendations regarding ways to facilitate students' initial literacy development. As students continue to develop Chinese oral proficiency and literacy, the teaching of reading and writing in the Chinese orthographic system requires a different set of skills, which will be addressed in another CELIN Brief.

Chinese as a Character-Based Language

The written Chinese language does not employ an alphabet. An alphabet is a system that uses letters or other symbols to represent the sounds and words (form and meaning) of a language. Children learning to read a language such as English spend time in early elementary school learning how letters represent the sounds of the language and how they

combine to form printed words. Chinese, on the other hand, employs what are commonly termed “characters,” written symbols that are not “spelled out,” as are letters in alphabets. Chinese characters often contain both sound and meaning cues in their overall makeup; however, these cues hint at rather than clearly identify pronunciation and meaning, and learners have to take an extra step to decode them. Over many millennia, tens of thousands of characters have evolved, though many have either fallen into disuse or are used in highly specialized fields such as classical Chinese literature, medicine, history, and philosophy. For native readers of modern Chinese, it is estimated that between 2,000 to 3,000 characters are needed to accomplish most reading functions on a daily basis (Dong, 2014). Chinese children learn 3,500 characters from first to ninth grade, spending hours each day writing and rewriting characters until they are committed to memory. While individual Chinese characters by themselves can be words, most words in Chinese are made up of two characters in combination, such as in the words “huo+shan” 火山 (fire+mountain=volcano) or “da+ren” 大人 (big+person=adult). Therefore, a learner’s vocabulary size is much larger than the number of characters learned.

The Basics of Chinese Character Structure

Chinese characters are not composed of randomly drawn elements, but instead reflect a highly evolved system of component parts that recur in various rule-governed configurations. The following terms describe components of Chinese character composition:

Strokes

Generally considered to be the primary building block of the Chinese character, strokes are dots, lines, or hooks that are written in one movement of the pen (or, traditionally, the brush used in Chinese calligraphy) and combine with other strokes to form a complete character. (For illustrations of this principle, see www.archchinese.com.) To compose a complete character, the strokes are written in a specific direction and order, which are practiced in highly standardized ways by children throughout the elementary school years. While all Chinese children learn to write characters by learning strokes and following stroke order, some Chinese teachers mistakenly believe that students learning Chinese as a foreign/world language in the United States do not need to pay attention to strokes and stroke order. However, research on Chinese language learners from elementary school through college has shown that learning strokes and stroke order makes it easier to remember characters (Guan, Liu, Chan, Ye, & Perfetti, 2011; Knell & West, 2015). Therefore, time and effort spent on this task are important investments in the development of reading and writing skills in Chinese.

Radicals

It is estimated that in Modern Chinese, between 80 to 90% of the characters are semantic-phonetic compounds (Taylor & Taylor, 1995). Radicals are the semantic component of a character, which provides information about its meaning. For example, the characters for “hit” 打, “push” 推, “pull” 拉, and “grab” 抓 all include the “hand” radical 扌. The characters for “mom,” 妈, “younger sister” 妹, “older sister” 姐, and “grandma” 奶 all have the female radical 女. When learners are taught with attention to radicals, they can rely on the meaning cues that they provide to narrow down, and therefore facilitate informed guessing of the meanings of, characters they cannot recognize. Further, radicals can help learners reduce the cognitive load in memorizing characters, because familiarity with radicals minimizes the need to remember every stroke. In fact, research has shown that teaching radicals to students helps them to better understand the principles of the writing system as a whole (Lü, Koda, Zhang, & Zhang, 2015), and

students have said that radicals provide an important aid for learning and memorizing characters (Shen, 2005; Shen & Ke, 2007). Generally, radicals appear in the left or top position of the character (Luo, Chen, Deacon, & Li, 2011), and they are used to organize characters in a traditional Chinese dictionary.

Semantic-Phonetic Compounds

In addition to radical, semantic-phonetic compounds contain a phonetic component that provides a cue to the character’s pronunciation. For example, the characters 请, 晴, and 情 all contain the phonetic component 青, which by itself is pronounced qing. The character 精 contains 青 and is pronounced jing, still close to the pronunciation qing. In semantic-phonetic compound characters, the phonetic component usually occupies the right or bottom position of the character. Learners are often able to use these phonetic elements to help them learn or guess the pronunciation of characters (Anderson, Li, Ku, Shu, & Wu, 2003; Shen, 2010). As Chinese characters have evolved over time, the connection between a phonetic component and the pronunciation of the character reflects a range of variation, as shown in the 青精 examples. Learners need to accumulate their knowledge of a number of Chinese characters to be able to recognize the phonetic component, which is usually a stand-alone character in itself. As with radicals, learners benefit from explicit instruction on phonetic elements, so that they notice and use them in their memorization of characters.

As their literacy ability grows, and as they are taught the skills to notice various parts of a character (strokes, stroke order, radicals, and phonetic components of a character), learners will find numerous recurring patterns that make up Chinese characters. Young learners, in particular, enjoy learning Chinese characters, because they view the task as playing games such as sorting, grouping, classifying, determining what’s missing or what’s the same or different, memorizing, and solving puzzles, all of which contribute to cognition and higher order thinking skills. Because age-appropriate tasks can benefit learners at all levels and age groups, teachers should recognize the importance of developing students’ higher order thinking skills throughout the K-12 Chinese language learning experience.

Simplified and Traditional Characters

Because of the complexity of the Chinese writing system that has developed over time, there have been attempts throughout history to simplify Chinese characters by reducing the number of strokes that many characters have. The most significant reform of the writing system in modern times came after 1949, when the People's Republic of China simplified and codified a set of official forms of characters to improve national literacy. However, not all areas of the Chinese-speaking world have adopted simplified characters as the standard form. For example, China and Singapore have adopted simplified characters, while Taiwan and Hong Kong have retained the use of traditional characters. Historical and classical literature was written in traditional characters, though is now available in both forms. Depending on the ultimate goals of the learner, it may be necessary to read both simplified and traditional forms. Given the investment in time and mental processing required to learn characters, however, it is advisable to begin with one form of characters.

Whether to adopt simplified or traditional characters for instruction in a program is a decision that will be made based on local conditions, depending on which system the community prefers. In addition, not every character has undergone simplification, and characters that have been simplified still often retain aspects of their traditional counterparts. (Compare, for example, traditional 雖 and simplified 虽.) In other words, simplified and traditional characters are not as different from one another as many believe, and if an experienced learner of Chinese decides to learn one or the other set, the transition to the other will not be difficult.

What is Pinyin? When and Why Is It Useful?

One of the advantages of alphabets is that readers can sound out words they do not know, if they know how the alphabets are pronounced and put together as in the case of English, French, and Spanish. As explained earlier, Chinese does not use an alphabet, and the phonetic element of a character, where one exists, provides only limited information to help the learner determine the pronunciation of the character. This can present a challenge to new learners, who are just

becoming familiar with both the spoken and written Chinese language. To help solve this problem, Chinese has employed Romanization, or systems that allow learners of Chinese whose native language uses an alphabet to spell, type, and read words and sentences in Mandarin Chinese using the Roman alphabet initially. The most commonly used Romanization system today is pinyin, employed in large part because it is the official Romanization system used in China and the standard system used by newspapers and other media to represent Chinese names and places. As a tool for literacy development among Chinese children, it is used in China to help young students who are just learning to read make the transition from the spoken to the written language. To help Chinese language learners in the United States, beginning textbooks featuring pinyin enable students to learn vocabulary, dialogues, and grammar structures quickly, so that they can begin to acquire spoken language proficiency. It is also convenient to use pinyin as the primary input method for writing in Chinese via computer and other technological devices. When vocabulary is acquired for spoken Chinese via pinyin, the pinyin is gradually replaced with characters in textbooks, thus easing the transition for the student to read texts in Chinese. In other words, pinyin is a useful tool that enables students to acquire spoken language in Chinese. It is not, however, what Chinese people read or write—for them, Chinese characters form the basis of literacy.

The pinyin system of Romanization has been widely adopted in Chinese language programs, as it is the official Romanization system in the PRC, the country with the largest population by far in the Chinese-speaking world. However, when and how to start teaching pinyin to young children (e.g., in kindergarten and first grade) in both immersion schools and traditional elementary school programs has been controversial. Increasingly in the United States, many schools do not teach pinyin to students in kindergarten and first grade. Instead, they have students build a solid foundation in Chinese oral language, develop basic concepts about the structure of Chinese characters, and recognize and write high-frequency Chinese characters, especially those associated with pictographs (such as the sun 日, moon 月, or mountain 山) or that serve as the base of radicals (e.g.,

water 水 and its radical variants). Starting in second or third grade, when students have developed a solid foundation in spoken Chinese and basic reading skills in English, teachers introduce the pinyin system in order for students to advance their oral language and literacy development in Chinese.

Establishing a Solid Platform for Chinese Literacy Development

The following seven principles are key for students in Chinese programs to develop initial proficiency in reading and writing through sound pedagogical practices:

1. **Ensure that realistic literacy goals are aligned with the program setting and communicated clearly to the school community.** Factors that influence the speed at which language proficiency and literacy develop include the nature of the program (e.g., immersion or foreign language in elementary school [FLES], age level of the students, heritage or non-heritage language speakers), the context in which the program is situated (e.g., Chinatown; urban, rural, or suburban setting), hours of instruction, class size, and curriculum design. (For more details, see the CELIN Brief on *Mapping Chinese Language Learning Outcomes in Grades K-12*.) More specifically, continuity of learning and time on task are essential for language development. Students need regular, ongoing instruction and opportunities to practice and use the language in order to build their language skills. Language classes scheduled once a week or less do not provide sufficient exposure for language learning. Schools need to make a commitment to language classes and not replace them with other activities.
2. **Ensure that the curriculum is standards-based and that expectations are communicated in meaningful terms about what students should know and be able to do as they develop literacy in Chinese.** Vaguely stated objectives, such as “know 150 characters,” tell little about what students can actually *do* with them. Instead, useful learning objectives might be, “sound out and tell the meaning of the 150 Chinese characters learned in this unit; read simple text written, and write by hand, in Chinese characters learned from this and previous units; and write by hand Chinese characters that have been learned in this and previous units to communicate ideas or information.” Learners should be given tasks that help them develop efficient character/word recognition, and instruction and strategies that develop reading comprehension and writing for communication. The curriculum needs to include a vibrant, robust, and valid assessment system that yields strong evidence of students’ literacy development and overall language learning. Moreover, parents must temper their expectations and understand the enormous differences between first and second language education. Attempting to equate a U.S. foreign language or immersion student’s proficiency level in Chinese with their native-speaking counterparts being educated in China, Taiwan, or Hong Kong is both unfair and unrealistic. (For more detail, see the CELIN Brief on *Designing and Implementing Chinese Language Programs: Preparing Students for the Real World*.)
3. **Situate literacy instruction squarely within the curriculum.** An over-emphasis of curricular and pedagogical approach on spoken language development often comes at the expense of literacy development. Without instructional time devoted to developing reading and writing proficiency, literacy development will not just “happen.” Likewise, too much emphasis on the development of reading and writing of Chinese characters without first building an oral foundation often results in frustration in students and teachers and limited communication skills of students. Teachers need to know how to develop both oral and written language in a complementary way. To this end, teachers need to receive continuing professional development to increase their pedagogical expertise in teaching literacy. Significant strides have been made in recent years in understanding Chinese literacy, so teachers should be given the ability and tools to develop, support, and evaluate the literacy component within the overall Chinese language and culture

curriculum. In recent years, the College of Holy Cross has been offering a Chinese language teacher summer institute, *Read On*, under the auspice of STARTALK, a federally funded project. The entire institute is devoted to enhancing Chinese language teachers' skills in teaching reading and writing, while also guiding them to collaborate and develop materials for teaching these skills. (See Additional Resources.)

4. [Integrate listening, speaking, reading, and writing skills in classroom activities and tasks in order to foster students' creative, communicative, and cognitive development.](#) Literacy instruction should be integrated into thematically organized units, so that the theme determines the spoken and written content of each lesson, including the choice of characters, vocabulary, and oral and literacy activities. Lessons should incorporate tasks in which students interpret, produce, seek, and exchange information in spoken and written form and should guide learners to extract information from texts, including authentic texts written for native speakers of the language.
5. [Understand that literacy development occurs in an environment where learners receive rich amounts of oral language input.](#) Classes taught entirely in Chinese provide the greatest exposure to the language in a naturalistic environment. Experts agree that instruction in the target language is the surest way to develop spoken language fluency (The National Standards Collaborative Board, 2015). This is in line with research that shows that a solid grounding in the spoken language is important for literacy development (Everson, 1998; Yu & Pine, 2006).
6. [Incorporate the handwriting of characters in the curriculum.](#) With the advent of computer technology that enables Chinese language users to compose written text in Chinese via pinyin, the importance of teaching students to hand write in Chinese has been called into question. Increasingly, having students hand write

characters over and over again has been dismissed as a ritualized and labor-intensive but ineffective practice. However, this is not an insignificant pedagogical issue, as it is also a deeply engrained cultural tradition. Research suggests that writing practice strengthens character knowledge at both the basic level of stroke sequences and at the higher level of radical knowledge, including radical form and position, which often signals character meaning (Flores d'Arcais, 1994; Guan, Liu, Chan, Ye, & Perfetti, 2011). Through handwriting practice, children learn to deconstruct characters into a unique pattern of strokes and components and then regroup these sub-characters into a well-formed character, an ability thought to facilitate children's awareness of a character's internal structure. This awareness supports the formation of connections among the form, meaning, and phonological elements of the Chinese writing system and may be associated with the quality of lexical entries in long-term memory. Therefore, the practice of hand writing Chinese characters needs to be an integral part of any Chinese curriculum, but it needs to be embedded in meaningful communicative activities. There are also a variety of useful character practice software programs designed to increase learners' memory and ability to read and write characters in a fun and purposeful way.

7. [Provide adequate classroom space for Chinese instruction.](#) Chinese language learners need ongoing exposure to the written language, and the Chinese language classroom is an important place to provide it. Teachers need to create a rich literacy immersion experience in written Chinese with wall space decorated with ample environmental print resources. Ideally, classes should be taught in a dedicated or shared language classroom rather than from a mobile cart, so that useful classroom expressions, stroke order charts, radical tables, authentic signs and visuals, and student work are displayed on wall space.

For examples of how these principles can be incorporated into the design and implementation of developing initial

and extended oral language and literacy, please see program profiles featured at CELIN webpage at Asia Society at <http://lwalkes.asiasociety.org/china-learning-initiatives/program-profiles>. Portland Public Schools, Oregon, home for the Chinese dual language program at the first Chinese K-16 Flagship Program in the United States, also shares its K-8 Curriculum Framework, which provides concrete grade by grade topics, themes, context, communicative tasks and objectives, functions and forms and vocabulary examples at <http://www.pps.k12.or.us/departments/immersion/4635.htm>.

Conclusion

Developing initial reading and writing literacy in Chinese presents significant challenges for learners.

Research and best practices provide insights for principled literacy instruction. This Brief describes ways that students can learn the different components of Chinese characters, with integrated speaking, listening, reading, and writing activities that provide the opportunities that students need to develop the ability to process characters and texts efficiently. Literacy development needs to occur in a classroom environment that provides rich text surroundings for students, with a standards-based curriculum that outlines clearly what students will know and be able to do with the spoken language and Chinese characters that they learn. Importantly, the literacy goals of the curriculum should be realistic given the learning setting, with assessments that are valid in assessing and documenting the developing literacy proficiency of the students.

References

- American Council on the Teaching of Foreign Languages. (2015). World-readiness standards for learning languages. (revised from the original ACTFL national standards). Alexandria, VA: Author. Retrieved from <https://www.actfl.org/sites/default/files/pdfs/WorldReadinessStandardsforLearningLanguages.pdf>
- Anderson, R. C., Li, W., Ku, Y., Shu, H., & Wu, N. (2003). Use of partial information in learning to read Chinese characters. *Journal of Educational Psychology*, 95, 1, 52-57.
- Dong, H. (2014). *A history of the Chinese language*. London & New York: Routledge.
- Everson, M. E. (1998). Word recognition among learners of Chinese as a foreign language: Investigating the relationship between naming and knowing. *Modern Language Journal*, 82, 2, 194-204.
- Flores d'Arcais, G. B. (1994). Order of strokes writing as a cue for retrieval in reading Chinese characters. *European Journal of Cognitive Psychology*, 6, 4, 337-355.
- Guan C.Q., Liu Y., Chan D. H. L., Ye F., & Perfetti, C. A. (2011). Writing strengthens orthography and alphabetic-coding strengthens phonology in learning to read Chinese. *Journal of Educational Psychology*, 103, 509-522.
- Knell, E., & West, H. (2015). Writing practice and Chinese character recognition in early Chinese immersion students. *Journal of the Chinese Language Teachers Association*, 50, 3, 45-61.
- Lü, C., Koda, K., Zhang, D., & Zhang, Y. (2015). Effects of semantic radical properties on character meaning extraction and inference among learners of Chinese as a foreign language. *Writing Systems Research*, 7, 2, 169-185
- Luo, Y. C., Chen, X., Deacon, S. H., & Li, H. (2011). Development of Chinese orthographic processing: A cross-cultural perspective. *Writing Systems Research*, 3, 1, 69-86.
- Shen, H. H. (2005). An investigation of Chinese character learning strategies among nonnative speakers of Chinese. *System*, 33,

49–68.

Shen, H. H. (2010). Level of cognitive processing: Effects on character learning among non-native learners of Chinese as a foreign language. *Language and Education*, 18, 2, 167-184.

Shen, H. H., & Ke, C. (2007). Radical awareness and word acquisition among nonnative learners of Chinese. *Modern Language Journal*, 91, 97–111.

Taylor, I. & Taylor, M. M. (1995). *Writing and literacy in Chinese, Korean, and Japanese*. Amsterdam & Philadelphia: John Benjamins Publishing Company.

Yu, Z., & Pine, N. (2006, December). Strategies for enhancing Chinese literacy in Chinese preschools. Paper presented at the National Reading Conference, Los Angeles, CA. Retrieved from <http://www.nancypine.com/academic-work/>

Additional Resources

Asia Society. (2006). *Creating a Chinese language program in your school*. New York: Author.

Asia Society. (2012). *Chinese language learning in the early grades: A handbook of resources and best practices for Mandarin immersion*. New York: Author.

Chao, D. L. (2008). A new multimedia course for learning Chinese characters. Chinese Literacy Development Project. Retrieved from www.chineseliteracy.net.

Dong, H. (2014). *A history of the Chinese language*. London & New York: Routledge.

Kubler, C. C. (Ed.). (2006). *NFLC guide for basic Chinese language programs (2nd Ed.)*. Columbus, OH: The Ohio State University National East Asian Foreign Languages Resource Center.

National Foreign Language Center. (2010). *Read Chinese!* University of Maryland: Author. Retrieved from <http://readchinese.nflc.org/>

Read-On. Chinese Language Teacher Summer Institute, College of Holy Cross, a STARTALK program. Retrieved from <http://college.holycross.edu/projects/startalk-chinese-literacy/>