Guiding Principles for Early Literacy Experiences for Beginning Learners of Chinese

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As more STARTALK Chinese programs are implemented, the need for direction on how to provide appropriate early literacy experiences while also building oral language skills has become clear. Chinese programs in general do not have the advantages of commonly agreed-upon approaches to literacy that are found in mainstream first language (L1) English language programs or in programs for more commonly taught foreign languages (L2). Also, few materials give guidance on basic methods of teaching literacy to students who are beginning their study of Chinese, especially at the elementary and middle school levels. This paper is an attempt to synthesize effective practices in this area. The focus is on programs in grades K–8, but the principles can be applied to the teaching of students at any level. The focus is also on students who have had no previous exposure to Chinese as a heritage language, but the principles apply to both heritage and nonheritage learners.

The following three guiding principles for effective Chinese language literacy instruction can assist how best to approach early literacy instruction for beginning learners of Chinese. The principles are based on the concept that character and vocabulary knowledge are not taught in isolation but instead are integral parts of thematically based content and contexts. These three principles flow from and are an extension of the six STARTALK Endorsed Principles for Effective Teaching and Learning. Each is designed to be used in conjunction with those six principles.

Principle 1: Literacy instruction is an integral part of a comprehensive STARTALK language program.

1.1 Teachers establish realistic literacy goals based on the type of program and on the instructional time available.

1.2 Literacy instruction takes into consideration the students' age, Chinese proficiency, and English reading and writing levels.

1.3 Practices in literacy instruction are supported by research on Chinese first and second language readers.

Principle 2: Literacy instruction is incorporated in a thematically based, balanced approach that encompasses both higher- and lower-level skills and competencies.

2.1 Literacy instruction does not stand alone but flows from and is integrated with elements of a standards-based thematic unit.

2.2 Teachers sequence literacy instruction according to the topics addressed in a thematic unit.

2.3 Teachers find needed reading materials and, if necessary, adapt or modify them to meet the needs of the students.

2.4 Teachers design a variety of tasks that integrate the culture, content, and oral language of the thematic unit.

2.5 Teachers design literacy tasks that are suitably complex and include lower-level to higher-level literacy.

2.6 Vocabulary is contextual and based on the theme and developmental appropriateness.

Principle 3: Literacy development for Chinese L2 learners is dependent on and integrated with rich and meaningful oral language experiences. Oral language development is enhanced by meaningful connections with written language.

3.1 Teachers design Can-Do Statements that include the literacy component of the thematic unit.

3.2 Teachers support oral language instruction with integration of literacy connections through characters, Pinyin, or both.

3.3 Teachers design integrated oral and literacy tasks and assessments that support learning outcomes and are appropriate to the language proficiency and age level of the learners.

3.4 Formative and summative assessments include character, vocabulary, sentence, and text comprehension as appropriate for the proficiency level of students.

In summary, these principles recognize the need for Chinese STARTALK programs to set their learners on the road to literacy through instruction that is developmentally appropriate and learner centered. Consistent with the STARTALK-endorsed principles that have served to guide all STARTALK programs, literacy instruction will be thematically based and will employ instructional tasks for learners that integrate culture with oral and written language through interactive classroom activities using both Pinyin and characters. Also consistent with STARTALK practice, planning for literacy instruction will begin with establishing learning outcomes through Can Do Statements in the STARTALK curriculum template (Stage 1), accompanied by assessment and learning activities (Stages 2 and 3).

The remainder of this document provides guidance on the theory and practical suggestions that can help to ensure that these principles are fully realized.

Principle 1: Literacy instruction is an integral part of a comprehensive STARTALK language program.

> *Language educators often face undue pressure and language learners may face unreasonable expectations when unrealistic language outcomes are set for achievement in short periods of instructional time. (American Council on the Teaching of Foreign Languages [ACTFL], 2015, p. 12)*

1.1 Realistic literacy goals are established on the basis of the type of program and the instructional time available.

The above quote from ACTFL's (2015) *Performance Descriptors for Language Learners* is a powerful reminder that it is critical to be aware of the educational context and the many variables in elementary and middle school Chinese language instruction when setting language and literacy goals for beginning Chinese language learners. This is especially critical in short-term summer STARTALK programs. As program goals are established, the following considerations must be kept in mind:

- *Program type:* What type of program is it? Different types of programs have different goals for their learners, with substantial variability in terms of classroom time, target language use, and degree of content-area instruction. The goals of FLES (Foreign Language in Elementary Schools) programs, for example, are for students to acquire some level of listening, speaking, reading, and writing skills while gaining an appreciation for other languages and cultures (Curtain & Dahlberg, 2016).

- *Duration of instruction:* How much time is planned for the program and how is that time distributed? For example, is it a three-week program that meets every day for a half day, or is it a program that meets forty-five minutes per day two or three times a week? Although it is true that proficiency development depends in part on how much time a learner has studied Chinese and on the frequency of the instruction, ultimately it is the effectiveness of the teacher and the quality of the curriculum that determines student progress. Because STARTALK programs are short-term summer programs, it is especially important to align the goals for Chinese literacy with the amount of time that is actually available for instruction.

- *Teacher expertise:* Does the program have experienced teachers who are familiar with the STARTALK-endorsed principles related to teaching in the target language, providing comprehensible input, building a standards-based thematic curriculum, and aligning assessment with instruction? Also, do the teachers have previous experience working with students of the ages targeted in the STARTALK program?

- *Assessments:* Have assessments been aligned with the literacy goals of the program and the instruction the learners have received?

1.2   Literacy instruction takes into consideration the student's age, Chinese proficiency, and English reading and writing proficiency.

Addressing student characteristics, interests, and needs is essential for successful instruction to take place. Assessment is the vehicle for teachers to find information about their students' background and prior learning. Pre-assessments may include information questions such as the following: How much exposure do the students have to the language and culture? Are they heritage students? Has there been continuity in their instruction? What are their interests? What challenges might they have with learning? What are their literacy skills in Chinese? In English?

1.3 Practices in literacy instruction are research based.

Research on native speakers and learners of Chinese as a foreign language shows that the most successful readers use specific strategies as they develop literacy skills, such as a reliance on their knowledge of the spoken language as well as their observations about the internal structure of characters. The subjects of these studies range from elementary school–aged children to adults. While most studies of this type are based on native speakers, studies of learners of Chinese as a foreign language reveal strikingly similar approaches. The findings of these studies and their implications for literacy instruction for learners of Chinese as a foreign language are summarized in Table 1.

Table 1: Comparison of Chinese Native and Chinese as a Foreign Language Speakers' Literacy Development

Native Chinese Speakers	Chinese as a Foreign Language (CFL) Learners	Pedagogical Implications
Chinese native speakers have well-developed spoken language skills before they begin literacy development. They use their knowledge of the spoken language to expand their inventory of Chinese characters and to guess the identity of unknown characters based on context.	The spoken language skills of preschool learners of CFL enhance reading. The stronger a child's spoken language skills, the better his or her reading comprehension.	Integrate characters and words introduced in the program into spoken language activities, and use spoken language activities to reinforce the meaning and pronunciation of characters.
By grade 2, successful readers develop **orthographic awareness**. That is, they recognize that characters are composed of recurring component parts and that certain parts occur only in certain locations within a character.	College-level CFL learners perform better on character recognition tests if their instruction includes attention to the component parts of characters.	Teach students to notice that characters are composed of recurring component parts, and provide activities that reinforce their ability to identify the component parts of characters.
By grade 3, successful readers develop **phonological awareness**. That is, they notice that characters often include a component that provides a pronunciation cue.	CFL learners who are aware of the phonetic elements within characters are better at learning and remembering characters.	Teach students to notice that many characters include a component part that provides a pronunciation clue, and develop activities that help them to identify the phonetic elements in characters that they are learning. Examples: 马／吗, **青**／请, 门／们／问.

Native Chinese Speakers	Chinese as a Foreign Language (CFL) Learners	Pedagogical Implications
By grade 3, successful readers notice that many characters include a component that provides **semantic** information about the character, and they are able to use this component to guess the meaning of characters that they have not yet learned.	CFL learners who are aware of the semantic radicals within characters are better at learning and remembering characters.	Teach students to notice radicals that provide meaningful information about the characters in which they occur. Teach the radicals as well as the characters in which they occur. Provide activities that guide students to identify these radicals in characters so that they can use radical knowledge to remember characters. Examples: The mouth radical 口 is the radical in many words that describe actions involving the mouth: 吃 eat, 喝 drink, 咬 bite; the hand radical 扌／手 is the radical in many characters that refer to actions that involve the hand: 打 hit, 拉 pull, 推 push, 拿 take.
By grade 5, successful readers have developed some degree of syntactic awareness. They can identify sentences that follow and violate phrase order rules, and they use connecting words correctly.	CFL learners who have developed some degree of syntactic awareness are better at reading and understanding texts.	Teach students to notice and use Chinese word and phrase order, as well as simple connecting words that create text cohesion, such as the words for *but* and *because*, and words that indicate sequence. Provide activities that guide students to use these words in speech, reading, and writing.
Chinese children learn characters by writing them by hand following a consistent set of stroke order and stroke direction rules. Many studies of Chinese-educated adult native speakers have found a relationship between stroke order knowledge and character recognition and retention. Stroke order information appears to be part of the mental representation of characters of adult readers of Chinese.	Studies of CFL learners at both the elementary school and the college levels have found that writing out characters by hand significantly enhances character retention.	Teach characters in terms of stroke order and stroke direction, and include regular opportunities for students to write characters by hand. Incorporate character writing as one of many approaches to character learning and retention.

Teaching Chinese Literacy: Lesson Example
Note: While this example is focused on young learners, these examples can be used with beginners at any age.

The research mentioned above is consistent with theories stating that learning to read Chinese involves knowledge of the spoken language, while gradually learning and discovering how thousands of seemingly unrelated visual patterns form Chinese characters in principled and rule-governed ways. Successful learners also come to recognize and exploit Chinese character components that convey phonological and semantic information; through instruction and sustained practice, they develop the ability to rapidly recognize words with little cognitive effort. Although the time in beginning Chinese STARTALK student programs is short in duration, students can be introduced to the Chinese writing system in ways that foster novice-level word recognition.

For example, a Can-Do Statement in the STARTALK curriculum might be, "I can say the words for several familiar animals in Chinese and I can identify the characters for these words." To help students accomplish this, the teacher could compose a song incorporating key vocabulary, using a tune familiar to students. For example, if the unit involves the names of animals, compose a song to the tune of *Frère Jacques*. (In Chinese, the song is alternately known as 三只老虎 Three Tigers or 两只老虎 Two Tigers.)

Step 1. Introduce the spoken Mandarin words for the animals that you include in the lesson.

Step 2. Lead the class in singing the song, substituting a different animal in each round. At first, cue the animal names with pictures of the animals.

Step 3. When the class is comfortable with the song, cue the animal names with the characters for each animal. Sing the song at the start and close of each class.

For recognizing radicals, a Can-do Statement might be, "I can identify a radical used in the characters for many animals."

In the accompanying lesson, the animals introduced might include 狗 *gǒu* (dog), 猫 *māo* (cat), 猪 *zhū* (pig), 狐 *hú* (fox), 马 *mǎ* (horse), 羊 *yáng* (sheep), 牛 *niú* (cow), and 鸡 *jī* (chicken). Prepare multiple sets of flashcards of the characters and the pictures of the animals, in which each card has either a character or a picture.

Step 1. Give one set to a pair or small group of students. Have the students work together to match the characters to the corresponding pictures (or Pinyin).

Step 2. Display the characters in large print (e.g., on a whiteboard or chalkboard or with large flashcards) and have each pair or group match one animal character to its picture on the board until all of the characters and pictures are correctly matched.

Step 3. Have students work together in pairs or small groups to identify all of the characters that have one piece in common. When all of the groups have finished, have members of each pair or group hold up the cards that share one component in common. Write that component on the board. It is 犭 *quǎn*, the dog radical. Tell the class that this component is a radical and that when it occurs in a character, it often indicates that the character refers to an animal. Have students follow you in writing out the radical by hand. Guide the students to realize that many characters for animals do not have this radical and that not every character that has this radical is a dog.

Step 4. End with the song. Have each pair or group divide up the characters equally. When you get to a particular animal in the song, have the team members who have that animal's character hold up the card.

This is just one example of objectives and classroom activities based on both first and second language research that demonstrate how to approach beginning literacy instruction in a STARTALK classroom.

Principle 2: Literacy instruction is incorporated in a thematically based, balanced approach that encompasses both higher- and lower-level skills and competencies.

2.1   Literacy instruction does not stand alone but flows from and integrates with elements of a standards-based thematic unit.

Thematic units are centered on themes that are broad and creative enough so that the unit can include multiple interconnected subject areas. Resources available on the STARTALK website contain examples of model thematic units (e.g., Mulan) with integrated literacy elements. Repetition of the concepts within the thematic unit helps students develop language and literacy skills as well as content area knowledge.

2.2   Teachers sequence literacy instruction according to the topics addressed in the thematic unit.

When designing literacy lesson plans, teachers must create a meaningful environment and engage students in multiple ways to develop language and literacy. Teaching characters and words can be more effective when students are exposed to an environment with rich visuals and print and can be reinforced when lessons are purposefully sequenced and linked. When texts for younger learners are used, such as stories in children's literature that provide sequence and anticipation clues, continuity between the lesson, students' literacy, and overall language development is enhanced.

2.3   Teachers find needed reading materials and, if necessary, adapt or modify them to meet the needs of the students.

A collection of children's books and other appropriate texts can become essential instructional materials for providing children with reading opportunities that appeal to the interests of individual children. Teachers use relevant and developmentally appropriate materials, including both authentic materials (stories, fairy tales, informational text, etc.) that are linguistically and culturally appropriate and teacher-designed materials that are created or adapted for Chinese L2 learners. Teachers often need to adapt or modify materials by considering the types of *scaffolds* or supports that students will need to understand the material as well as the age and language proficiency levels of the students.

2.4   Teachers design a variety of tasks that integrate the culture, content, and oral language of the thematic unit.

Teachers can design classroom activities that help students build fluency and comprehension and provide opportunities for guided conversations that engage children in strategic listening, speaking, reading, and writing about text. Reinforcement is essential for students to retain and apply their learning in a variety of ways and settings. Themes purposefully connected to content standards by

proficiency, grade, or both can serve as a platform to plan and implement activities for oral and written development.

Nonlinguistic cues such as pictures, performance, and songs can help the students, especially young and emergent language learners, develop language abilities. Instructional resources such as picture books, songs, and rhymes allow the students to develop vocabulary in a meaningful context while embedding vocabulary in culturally rich materials. In addition, children's books often feature pictures for visual support and story sequencing that can help students develop oral and written Chinese language skills while also providing a context for Chinese characters or words to be explored and understood in rich context.

A number of activities to consider:

- Interacting with students by asking them questions about a selected reading text to encourage active thinking and facilitate reading comprehension.
- Asking "who, when, where, what, how, why" questions to help students make and use sentences to express their thoughts and learning.
- Using graphic organizers to help students understand story elements such as characters, setting, and events.
- Asking students to rewrite a story with a new ending or from a different point of view and explaining how their rewrite is connected to the original story.
- Having students present their rewritten stories with artwork to the class.

2.5   Teachers design literacy tasks that are suitably complex and include both higher- and lower-level skills.

Literacy involves both lower-level processing, such as recognizing words, and higher-level processing, which involves more complex comprehension building. There is not a linear progression from low-level to high-level processing. Students who are developing initial or early literacy skills in Chinese can also do some high-level of processing of information.

Lower-level character recognition and word recognition are processes unique to character-based languages and are crucial skills for reading in Chinese. Reading for everyday purposes in Chinese requires the recognition of several thousand characters. It also requires understanding that most words are formed by two or more characters and that word boundaries are not represented on the printed page. Research has shown that rapid and accurate character recognition is basic to text comprehension and that comprehension drops quickly when a reader is unfamiliar with even a small number of characters in a text.

There is a hierarchy in acquiring the skills needed for lower-level processing, and teachers should use a scaffolded approach to carefully build these skills.

Table 2 highlights lower-level processing skills for early Chinese literacy development.

Table 2: Lower-Level Chinese Processing Skills

Characters	Words	Phrases	Sentences
Readers need to work on both the accuracy and the speed of their character recognition.	Readers must acquire the ability to identify word boundaries in Chinese, where characters are evenly spaced within each line and are not grouped into words.	Readers need to learn to identify the grammatical markers that identify phrases.	Readers need to be able to identify the role and relationship of phrases in each sentence of a text. This includes the ability to recognize markers and groupings of text that create larger chunks of meaning.

Higher-level processing skills are not unique to Chinese. They are necessary for reading and fully comprehending text in all languages. In fact, many students of Chinese as a foreign language may not have completely acquired these skills for reading in their primary language of instruction. Consequently, teaching higher-level processing skills in Chinese is an opportunity for the Chinese language classroom to support the development of higher-level literacy skills in English, as well as an opportunity for collaboration between the Chinese teacher and the English language arts teacher.

Research has shown that successful higher-level reading depends on quick and accurate lower-level processing. This is an issue of *cognitive capacity*; the total amount of information the brain is capable of retaining at any given moment. The more effort the reader needs to spend on lower-level tasks such as character recognition, the less cognitive capacity is available for higher-level tasks.

Higher-level processing skills are not language specific; these skills can map across languages and are particularly helpful for Chinese L2 students who have already developed literacy skills in their first language. Table 3 highlights these skills.

Table 3: Higher-Level Processing Skills

Word Recognition	Text Linkages and Meaningfulness	Identifying Text Type and Purpose	Identifying Author Viewpoints
Readers are able to identify the meaning and grammatical role of words based on the context. Some words have multiple meanings depending on where and how they appear in the sentence.	Readers are able to identify words that indicate timing sequence (e.g., *before*), cause and effect (e.g., *therefore*), conditional situations (e.g., *if*), and the organization of the text (e.g., *first*, *then*, *in conclusion*).	Readers are able to identify the text as a description, narrative, or explanation and to identify the purpose of the text.	Readers are able to identify facts and other explicit, literal information in the text. Readers can make predictions based on the text and can apply information from the text to perform additional tasks.

Both lower- and higher-level processing skills are important for fully developing Chinese literacy skills. Although STARTALK student programs are short-term and often involve novice-level learners, STARTALK teachers can begin to introduce higher-level reading skills even in the beginning stages of literacy acquisition with the use of carefully selected (and modified) authentic materials and/or with carefully created texts. To be accessible to learners, texts must consist primarily or entirely of familiar characters, words, and grammatical structures. These familiar characters, words, and grammatical

structures should include those introduced in the lessons in which the written texts occur. Because oral language develops more quickly than does character knowledge, texts can consist of a mixture of characters and Pinyin.

Depending on the reading goals, teachers design a series of tasks or activities in which students can be asked to skim and scan a text to find different kinds of information that help to identify the topic, purpose, or organization of a text. Following are some examples.

- In a descriptive text, students can be asked to find all of the adjectives or circle all of the numbers and then identify who or what they are describing.

- In a narrative text, students can be asked to find all of the transition words that indicate sequence. Students can then be asked to find the main verb in each sentence for one or more paragraphs and try to construct the sequence of events.

- Students can be asked to work in small groups to identify a text as primarily descriptive or narrative, to circle the words and phrases in the text that convinced them of the text type, and then to explain their decision to the other students in their group.

- For some activities, teachers may want to identify the text type and then ask their students to perform a task based on the content of the text. For example, the teacher may introduce a visual or written passage as a text message from a friend who will be visiting from out of town and instruct them, on the basis of the content of the passage, to decide whether they should prepare breakfast, lunch, or dinner for their friend or to decide what showing of a movie in local movie theater they will take their friend to.

Notice that none of these activities involve translating the text to English, and none require total comprehension of the text. Instead, the focus in these activities is to develop strategies for getting various types of information from a text by approaching the text from various perspectives and to make decisions on the basis of this information.

Table 4 illustrates how teachers can make decisions about designing tasks and activities that will lead to the identification of appropriate overall learning experiences for the STARTALK Stage 3 student curriculum template. For this purpose, we define a *task* as an activity or action carried out as the result of processing or understanding language. The use of a variety of tasks makes language teaching more communicative.

Table 4: Planning for Literacy Task Complexity: Factors and Considerations in the Relationship between Tasks and Texts for Chinese Language Learners

Task Design Factors and Considerations	What Does It Mean?	Implications for STARTALK Stage 3 Major Learning Experiences
Relevance Is the task relevant and meaningful to the learner?	Lessons and activities are all connected to the theme.	Continuing with the previous example, teachers compose a song incorporating key vocabulary, using a tune familiar to the students, where the theme is Learning about Animal Friends.
Complexity How many steps are involved in the task? How complex are the instructions? What cognitive demands does the task make on the learner? How much information is the learner expected to process?	Students learn from simple, short, and less complex tasks, then advance to more complex tasks (e.g., moving from understanding key words in a text to understanding the details.	Students are able to say the names of some animals and are able to substitute those names for other animal names they are learning. They are able to recognize, read, and then write the characters for each animal.
Amount of Context Provided Prior to Task How much prior knowledge of the world, the situation, or the cultural context is assumed in the way the task is framed? How much preliminary activity is allowed to introduce the task and set the context?	As the proficiency level increases, reliance on context decreases, but at the beginning stages, learners often need to understand the context.	Students begin learning about pets, then move to farm animals and animals in the wild.
Language Processing for the Task Is the language that learners are expected to produce in line with their processing capacity?	Be aware of which syntactic structures are expected to be produced at different stages.	Students learn that *quǎn* is a radical and that when it occurs in a character, it often indicates that the character refers to an animal such as 狗 *gǒu* (dog), 猫 *māo* (cat), 猪 *zhū* (pig), or 狐 *hú* (fox).
Amount of Help Available to the Student How much assistance can the learner get from the teacher, the text, other learners, or learning aids? Does the partner provide help?	At the beginning stages, learners may require more help. For example, to set up a dialogue with partners, the teacher may need to do more context setting and modeling.	After modeling correct stroke order and direction, students can write the radical by hand. They are able to complete worksheets that incorporate this radical and practice writing the characters of different animals.
Degree of Grammatical and Contextual Accuracy How "standard" does the task require the learners to be? What is the desired effect?	Different types of tasks may require lesser or greater amounts of accuracy. For example, giving detailed instructions would require a greater degree of accuracy than would everyday conversation.	Students, aided by Pinyin, learn the sounds of the characters. Later, they can be introduced to the characters.
Time available		

How long does the learner have to carry out the task?	Can the task be accomplished in the time frame for the lesson, unit, and entire STARTALK program?	Students complete tasks that involve knowledge of the spoken language with a gradual learning and discovering of the characters in a consistent, rule-governed way.

The list of task design factors and accompanying questions is adapted from: *Nunan, D. (1988). The Learner-Centered Curriculum. A Study in Second Language Teaching.* New York, Cambridge University Press.

2.6 Vocabulary is contextual and based on the theme and developmental appropriateness.

Research in both first and second language learning has established a strong relationship between vocabulary knowledge and reading ability (Grabe, 2009). However, traditional methods of learning vocabulary, such as the memorization of decontextualized word lists, are not recommended. Instead, teachers are urged to teach vocabulary in context to link the vocabulary with the overall theme and meaning of extended text. In beginning-level classes, teachers should introduce characters for words that students have already learned via a transliteration system such as Pinyin while ensuring that vocabulary learned in characters is reviewed on a regular basis. Whenever possible, solidify vocabulary learning by ensuring that activities include an integration of reading, writing, listening, and speaking. Some activities include the following:

- Reinforce learning of vocabulary by having students sort characters or words into categories such as verbs, adjectives, or radicals; add to this task by having students sort characters or words that align to the theme.

- Guide students to match words in context, such as matching a noun with an appropriate action word to form a sentence.

- Allow students to retell a story by placing key words in the correct order to show story events; retelling can be done orally or/and in writing.
- Ask students to write a word in response to a description such as, "I have four legs. I can swim. I am green . . . Who am I?"

Principle 3: Literacy development for Chinese L2 learners is dependent on and integrated with rich and meaningful oral language experiences. Oral language development is enhanced by meaningful connections with written language.

3.1 Teachers design Can-Do Statements that include the literacy component of the thematic unit.

Elementary and middle school–level STARTALK programs often enroll students who have a variety of

backgrounds and experiences. STARTALK-endorsed principles provide the framework for teachers to develop Can-Do to design literacy activities in thematic units and lessons.

One example is Loyola Marymount University's STARTALK student program for grades 1–4. The program targets students who are enrolled in Mandarin immersion programs. Program instructors chose the theme *Virtual Journey along the Silk Road* and focused on interdisciplinary project-based learning. A sample Can-Do Statement from this program targeted at the intermediate low level for fourth grade immersion student participants is "I can write a short summary and do a comparison of some landmarks/items/food produced and/or traded in the cities I visited (Turfan, Dunhuang, and Xi'an) along the Silk Road.

In the unit, students created a marketplace after having learned about three selected cities along the China route of the Silk Road (Turfan, Dunhuang, and Xi'an). Students learned about the characteristics of each of the cities, including the native foods and animals, ancient coinage, trading practices and goods, transportation, music, dance, and poetry as well as landforms. Students used language skills and descriptive language as they served in different roles (docents, buyers and sellers of goods, artists, etc.) in the marketplace. They used greetings and the language of negotiation to enact selling and bartering in the marketplaces of their selected city. They also created artifacts and scenery to depict daily life during that era. Teachers provided carefully selected and scaffolded experiences, such as using sentence frames; writing journals about the trip; creating lists of traded objects; describing landscapes (geographical features); and using descriptions of climate, food, and transportation. Students engaged in the exchange of products and ideas about the culture, livelihood, dwellings, food, clothing, and activities of people along cities of the Silk Road and participated in buying and selling activities using Chinese coins.

Teachers used scaffolds to support student learning of characters and vocabulary in context. Here are some examples:

1. _____ is similar to _____.

2. _____ is different from _____, because _____.

3. The _____ (Bell Tower) in _____ (Xian) is as _____ (tall) as _____ (the White Horse Dagoba in Dunhuang).

4. I see _____ (list many beautiful paintings and musical instruments) in _____ (Dunhuang) and _____ (list different types of fruits) _____ in _____ (Turfan).

Fourth grade students compared and contrasted these objects and items from the Silk Road with their present environment. As part of the culminating event, students recreated the city of Xi'an, where they served as docents, buyers, citizens, merchants, visitors, and tour guide in the city for parents and community members.

3.2   Teachers support oral language instruction with the integration of literacy connections through characters, Pinyin, or both.

In languages written with an alphabet or a syllabary (e.g., Pinyin or Zhuyin, also known as Bopomofo), there is a standard relationship between the written form of a word and its pronunciation. Once you learn that relationship, you can write anything you know how to say (although you may not spell everything correctly). You can read words that you have never seen before by sounding them out. In fact, you can read anything, even words whose meanings may be unfamiliar to you. Reading is a way to expand vocabulary.

In alphabetic languages and languages with a syllabary, the relationship of the written word and its pronunciation is something like this:

> Written Word   ⟷   Pronunciation

In languages with complicated spelling systems such as English, readers also have to learn additional rules of pronunciation and exceptions to these rules to arrive at the pronunciation, but this is relatively easy compared with reading Chinese characters.

As already discussed, Chinese characters often contain cues to their pronunciation, but there is no one-to-one correspondence between the form of the character and its pronunciation. That is, there is nothing in the structure of a character that enables you to sound out the character and associate it with a pronunciation. Similarly, nothing in the pronunciation of a word informs you about how the character is written.

In Chinese, the relationship of a character to its pronunciation is something like this:

> Character   →   ???   ←   Pronunciation
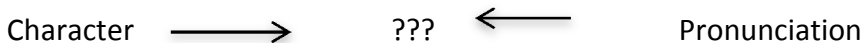
As a result, transcription systems make this task easier by providing a standard written representation of Mandarin pronunciation. That is, they are essentially alphabets for representing the pronunciation of Chinese characters. Like alphabets, you have to learn the association between each letter (or shape) and a sound, and you have to learn how to connect the sounds to form Mandarin syllables and words. Unlike alphabets, knowing the transcription system alone does not enable you to read Chinese, since Chinese texts are written in characters. But transcription makes it easier to link the form of the character to its pronunciation.

The relationship of a transcription to the character and pronunciation is something like this:

> Character   ⟷   Transcription   ⟷   Pronunciation

Over the centuries, many different transcription systems have been developed to indicate the pronunciation of Chinese characters in spoken Mandarin (and in other dialects as well). These include

Zhuyin Fuhao, a system of 37 character-like symbols, and Romanization systems that use the Latin alphabet such as Wade-Giles, Yale, Gwoyeu Romatzyh, and Hanyu Pinyin.

Hanyu Pinyin, commonly referred to as Pinyin, is the official system in the People's Republic of China and is used by most of the world to represent the pronunciation of Mandarin. Zhuyin Fuhao (also known as Bopomofo) is used in Taiwan.

How do learners of Chinese as a foreign language benefit from knowing a transcription system?

1. It simplifies the process of learning and reviewing characters. Without a transcription system, learners must rely on their teachers to provide the pronunciation of all new characters and words, and they have no way to review the pronunciation of characters that they have learned.

2. It accelerates the development of literacy skills, especially the ability to compose in Chinese. If learners know a transcription system and are permitted to use it when they write, they are able to compose texts equivalent in difficulty and complexity to their spoken language abilities. Without a transcription system, readers are limited to expressing themselves in writing using only the characters that they have learned. As oral language develops much more quickly than does character knowledge, the absence of a transcription system greatly limits the ability of learners to communicate in writing and to learn the structure and conventions of extended written texts.

3. It enables the reader to access more written texts. When a text includes both Pinyin and characters, comprehension can be facilitated and frustration reduced.

4. It permits learners to acquire the spoken language more rapidly by providing them a way to acquire vocabulary, grammar, and the like via a system they can readily access, instead of trying to learn the spoken language via characters, which would be pretty much impossible.

5. It enables the electronic input of characters and therefore the use of digital platforms such as word processors, e-mail, text messaging systems, and social media to both communicate and access more information.

For STARTALK programs in which the learners are middle school or high school students, the introduction and use of Pinyin is less controversial, because these learners have their L1 reading ability to bring to the task of learning Pinyin. That is, the alphabetic principle of assigning sounds to letters and words in English can be applied to learning Pinyin. Their challenge, then, is much the same as the challenge for students learning to read French, Spanish, or German: While the alphabet used to represent the sounds and words of these languages is their familiar Roman alphabet, the rules for how the alphabet represents the words and sounds of these particular languages are very different. Consequently, learners will need substantial target language input accompanied by Pinyin print representation to learn how Pinyin works.

For Chinese language programs designed for elementary school learners, issues such as when or how to teach Pinyin are still debated, with some programs introducing Pinyin in the second half of first

grade, while others introduce Pinyin in third or even fourth grade. For students who are in long-term immersion programs, for example, learners who do not know how to read can start learning characters because they will be introduced to the alphabet during the English part of their day. Other program models might not formally teach the Pinyin system to young learners, but they can ensure that Pinyin accompanies the characters as a bridge to allow students to connect oral language with literacy. At some point, however, students will need to be able to use Pinyin or some other transliteration system, as transliteration is an important method for accessing important technological resources, such as word processing, texting, and online dictionary lookup.

In summation, the use of Pinyin remains a very controversial issue in the Chinese pedagogical community, and it is one that needs its own research agenda to resolve. There is, however, research involving Chinese children exposed to Pinyin (Lin et al., 2010) that indicates Pinyin serves as a direct and reliable tool for teaching characters that have unreliable phonetic elements while also facilitating awareness of tone, syllables, and phonemes, thus acting as a self-teaching resource for students when they are away from their teachers. This research also suggests that it may be important for learners to develop this phonological sensitivity at an early age, as it may ultimately promote Chinese character reading and boost literacy development.

Additionally, Guan, Liu, Chan, Ye, and Perfetti (2011) suggested that for Chinese L2 learners, Pinyin supports the acquisition of a phonological representation and helps learners to retrieve resources they acquired through spoken language. It is important, then, to view Pinyin (or other transliteration systems that programs choose to use) as a tool for *accessing* the Chinese language and culture encoded within the Chinese writing system.

3.3 Teachers design integrated oral and literacy tasks and assessments that support learning outcomes and are appropriate to the language proficiency and age level of the learners.

Assessment is the vehicle for teachers to find information about their students' backgrounds and prior learning. Assessment is ongoing; therefore, students must be assessed before, during, and after teaching to determine their interpersonal, interpretive, and presentational skills in oral and written language. Testing formats should also be diverse to maximize opportunities for students to demonstrate what they know or have learned. Formative and summative assessments are integral parts of teaching and learning.

3.4 Formative and summative assessments include vocabulary, sentence, and text comprehension as appropriate for the proficiency level of students.

The goal of formative assessment is to provide feedback and information during the instructional process so that teachers can check on student learning. The goal of summative assessment is to evaluate student learning at the end of an instructional unit. It is important that both formative and summative assessments include both higher-level and lower-level processing skills as described earlier.

Conclusion

As Chinese language classes are becoming more in demand at all levels of U.S. foreign language education, developing literacy has presented perhaps the greatest challenge for U.S. learners. To confront these challenges, teachers need guidance in designing literacy programs and methods for conducting effective literacy activities that develop their students' reading and writing proficiency with Chinese characters, supported by transliteration systems such as Pinyin. This paper offers a set of principles to guide the teaching of literacy in the STARTALK classroom, much as the STARTALK-endorsed principles have guided the conduct of STARTALK programs over the past many years. This paper has also presented research and theoretical support for these principles, along with suggestions and resources to help teachers design literacy instruction not only for STARTALK programs but for a variety of educational settings encountered in U.S. education. While we, the members of the committee who wrote this paper, wish we could say that the contents of this paper represent the final word on how to conduct Chinese literacy instruction, we know this is not the case. Before this is possible, significant amounts of research and experience will need to be amassed and disseminated. Instead, we present this paper in the spirit of Laozi, who stated, "千里之行，始於足下," which is often translated as 'a thousand-mile journey begins with a single step'. This paper, then, is presented as a first but firm and determined step that will help Chinese language teachers guide their learners toward increased levels of proficiency in reading and writing Chinese.

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Appendix 1: Chinese Summative Assessments

A few tests are available for assessing literacy for elementary Chinese programs; however, none are widely adopted by K–5 Chinese programs. Many schools and districts use their own assessments and calibrate their results with some of the tests from the list below. This is not a comprehensive list, but these tests are among the more popular ones currently being used by schools and school districts.

WPT

The American Council on the Teaching of Foreign Languages (ACTFL) Writing Proficiency Test (WPT) is a standardized test for assessing functional writing in a language. It measures the ability of the student to write well and appropriately for real-world situations. WPT consists of four prompts that relate to practical, social, and professional topics in both formal and informal settings. It is not tied to content or method of instruction. WPT compares the student's writing sample with the ACTFL proficiency level descriptors for writing as shown here. The proctored test is 80–90 minutes in duration and is assessed by a certified ACTFL rater.

ACTFL Writing Proficiency Level Highlights

ACTFL Level	Level Highlights
Superior	Can produce informal and formal writing on practical, social, and professional topics treated both abstractly and concretely. Can present well-developed ideas, opinions, arguments, and hypotheses through extended discourse. Can control structures, both general and specialized/professional vocabulary, spelling, punctuation, cohesive devices, and all other aspects of written form and organization with no pattern of error to distract the reader.
Advanced	Can write routine, informal, and some formal correspondence, narratives, descriptions, and summaries of a factual nature in all major time frames in connected discourse of a paragraph in length. Writing is comprehensible to all native speakers due to breadth of generic vocabulary and good control of the most frequently used structures.
Intermediate	Can meet a range of simple and practical writing needs, e.g., simple messages and letters, requests for information, notes, etc. Can communicate simple facts and ideas in a loosely connected series of sentences on topics of personal interest and social needs, primarily in the present. Because of vocabulary limitations and errors in basic structures, writing is comprehensible to those accustomed to the writing of non-natives.
Novice	Can produce lists, notes, and limited formulaic information on simple forms and documents. Writing is typically limited to words, phrases, and memorized material.

Source: The table is based on descriptions from the *ACTFL Proficiency Guidelines 2012,"* 3rd edition, by the American Council on the Teaching of Foreign Languages, 2012.

ACTFL Reading Proficiency Level Highlights

ACTFL Level	Level Highlights
Superior	Can understand texts from many genres dealing with a wide range of subjects, both familiar and unfamiliar. Can understand texts that use precise, specialized vocabulary and complex grammatical structures. Can understand lengthy texts of a professional, academic, or literary nature.
Advanced	Can understand the main ideas and supporting details of authentic narrative and descriptive texts. Can compensate for limitations in lexical and structural knowledge by using contextual clues. Can read new subject matter.
Intermediate	Can understand information conveyed in simple, predictable, loosely connected texts relying heavily on contextual clues. Can read texts that are not complex and have a predictable pattern of presentation.
Novice	Can understand key words and cognates, as well as formulaic phrases that are highly contextualized.

Source: The table is based on descriptions from the *ACTFL Proficiency Guidelines 2012,"* 3rd edition, by the American Council on the Teaching of Foreign Languages, 2012.

AAPPL

The ACTFL Assessment of Performance toward Proficiency in Languages (AAPPL) is a proctored online performance-based assessment across the interpersonal, interpretive, and presentational communication modes within a familiar classroom context. The AAPPL measure provides realistic role-play incorporating audio and video elements to create real-world tasks. Reading passages, listening text, speaking and listening tasks, or writing prompts are aligned with ACTFL proficiency levels.

AAPPL is designed for students from fifth through 12th grades. The Interpersonal Listening and Speaking component can be used for primary grade immersion students who have keyboarding skills. Each of the four components of the test takes approximately 30 minutes to complete, for a total of two hours combined. Interpersonal Listening and Speaking and Presentational Writing are scored by ACTFL-certified AAPPL raters. Interpretive Listening and Interpretive Reading are machine scored.

YCT

The Youth Chinese Test (YCT) was developed by Hanban to improve the language proficiency of foreign students younger than 16 years of age who are learning Chinese. It consists of two independent tests, a reading and writing test that is divided into four levels, and a speaking test that is divided into beginner and intermediate levels. It is based on vocabulary learned.

Youth Chinese Test (YCT) Reading and Writing Levels

YCT Level	Words	Reading	Skills	Test
I	80	Characters with Pinyin	Can understand and use some of the most common Chinese phrases and sentences	Listening and Reading Two sections, 35 questions Test time: 35 min
II	150	Characters with Pinyin	Can understand and use some simple Chinese phrases and sentences and cope with basic level communications	Listening and Reading Two sections, 40 questions Test time: 50 min
III	300	Characters with Pinyin	Can communicate on familiar daily topics in a simple manner	Listening and Reading Two sections, 60 questions Test time: 60 min
IV	600	Characters only	Can communicate in Chinese at a basic level in their daily, academic, and professional lives	Listening, Reading, and Writing Three sections, 80 questions Test time: 85 min

As an example, Utah Dual Language Immersion programs use YCT Levels I–III for assessment. The proficiency targets by grade can be found in Appendix 2 for your reference.

HSK

The Chinese Proficiency Test (HSK) is an international standardized exam developed by Hanban that tests and rates Chinese language proficiency. It assesses nonnative Chinese speakers' abilities in using the Chinese language in their daily, academic, and professional lives.

HSK Test Levels

HSK Level	Words	Student Suitability	Skills	Test
I	150	2–3 class hours of Chinese per week and have studied Chinese for **one semester** or more.	Can understand and use very simple words and phrases.	Listening and Reading Two sections, 40 questions Test time: 40 min
II	300	2–3 class hours of Chinese per week and have studied Chinese for **two semesters** or more.	Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters.	Listening and Reading Two sections, 60 questions Test time: 55 min
III	600	2–3 class hours of Chinese per week and have studied Chinese for **three semesters** or more.	Can communicate at a basic level in their daily, academic, and professional lives. Can manage most communication in Chinese when travelling in China.	Listening, Reading and Writing Three sections, 90 questions Test time: 90 min
IV	1200	2–3 class hours of Chinese per week and have studied Chinese for **four semesters** or more.	Can converse in Chinese on a wide range of topics and are able to communicate fluently with native Chinese speakers.	Listening, Reading and Writing Three sections, 100 questions Test time: 105 min
V	2500	2–3 class hours of Chinese per week and have studied Chinese for **five semesters** or more.	Can read Chinese newspapers and magazines, enjoy Chinese films and plays, and give a full-length speech in Chinese.	Listening, Reading and Writing Three sections, 100 questions Test time: 125 min
VI	5000	Students who can communicate fluently with others in Chinese at a native or near-native speaking level.	Can easily comprehend written and spoken information in Chinese and can effectively express themselves in Chinese, both orally and on paper.	Listening, Reading and Writing Three sections, 101 questions Test time: 140 min

STAMP 4Se and STAMP4s

The Avant Assessment STAMP (STAndards-based Measurement of Proficiency) 4Se measures proficiency in reading, writing, listening, and speaking and can be used by students in grades 3–6. The assessments are web based and computer adaptive (i.e., the test adapts to the student's ability level) with real-world content questions for elementary school students. The proficiency benchmarks are aligned to ACTFL levels Novice through Advanced. Writing and speaking results are scored by certified raters and are typically available in 3 to 7 business days, while reading and listening scores are available as soon as the test taker completes each section.

STAMP 4s is also targeted for third students in grades 3–6. The test takes an average of 80 minutes to complete (with reading taking 25–35 min and involving multiple-choice questions, writing taking 10 min with two prompts, listening taking 25–30 min and involving multiple-choice questions, and speaking taking 10 min with two prompts) but is not timed.

Appendix 2: Building Blocks for Chinese Literacy

Component Parts

There are thousands of Chinese characters, each with its own unique shape. A college graduate in China can read 4,000 or more. However, each character is composed of a much smaller number of recurring component parts, or 部件 *bùjiàn*. Once you learn to write or recognize the common recurring parts, it becomes easier read or write a large number of characters.

The same component part can occur in many characters. For example, the component part 月 occurs in these and many other characters: 明， 期， 腰， 萌， and 脆.

A character can contain one, two, three, or more component parts. Here are examples:

One component part: 水， 人， 上， 山， 大， 小, 火, 女, 子
Two component parts: 好， 明， 姓， 学， 情， 团
Three component parts： 哪， 森， 做， 经,急， 借， 游

All characters take up the same imaginary space, whether handwritten or printed, no matter how many component parts they contain. The more component parts the character contains, the smaller each one is written. Notice the relative size of 木 in the following characters with one, two, three, and four component parts: 木, 林, 森, 楚.

Only a small number of possible arrangements of component parts are possible within a character. Here are the most common:

⊞ Two component parts, horizontally arranged: 明, 作, 林

⯃ Three component parts, horizontally arranged: 做, 附, 哪

⊟ Two component parts, vertically arranged: 学, 冒, 草

☰ Three component parts, vertically arranged: 高, 萝, 复

▣ Outside–inside: 国, 同, 因

Characters may also have mixed orientation. For example, a vertical character may have two components on the top and one on the bottom:

⊞: 架, 想

or one component on the top and two on the bottom:

⊞: 萌, 森

Strokes and Stroke Order

The component parts of characters and the characters themselves are written as a series of strokes. Characters can have as few as one or two strokes or as many as twenty or more strokes. Most simplified characters have no more than eight to twelve strokes; traditional characters may consist of many more. Whether someone is learning simplified or traditional characters, strokes are written in a fixed way, in terms of stroke order and stroke direction. The basic rules of stroke order are summarized here:[1]

1. Top to bottom
2. Left to right
3. Horizontal before vertical
4. Right-to-left diagonal stroke before left-to-right diagonal stroke
5. Outside before inside
6. Inside before outside
7. Inside before bottom closing stroke
8. Center verticals before outside "wings"
9. Cutting strokes last
10. Left vertical before closing stroke
11. Top or upper-left dots first
12. Inside or upper-right dots last

Radicals

As we have said elsewhere in this paper, knowledge of the component parts of characters simplifies the task of character learning, reducing the work of learning a character from the memorization of the individual strokes of each character to the memorization of a much smaller number of component parts. In addition, some component parts provide information about the character that further aids in memorization and recall. These are the components that serve as the radical (部首 *bùshǒu*) and the phonetic, sometimes called "phonetic radical" (生旁 *shēngpáng*), in a character.

The radical is the part of the character that is used to organize characters in a Chinese dictionary. Traditional character dictionaries distinguish 214 different radicals. Simplified character dictionaries distinguish 189. Every character has a radical. Some characters consist of the radical and nothing else, but most include a radical and at least one other recurring part.

Most radicals are associated with a meaning, and this meaning is often conveyed in the meaning of the characters in which it occurs. The following characters are among those that consist of a radical alone. Each character is followed by its Pinyin transcription and its meaning: 人 *rén* (person), 女 *nǔ* (female), 木 *mù* (wood), 水 (alternately occurring as 氵) *shuǐ* (water), 金 *jīn* (gold), and 口 *kǒu* (mouth).

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[1] These rules are slightly modified from those found at http://www.archchinese.com/chinese_stroke_order_rules.html.

When these characters serve as the radical in another character, they often bring their meaning with them. For example, characters with the radical 女 *nǚ* (female) often have something to do with females: 姐 older sister, 妹 younger sister, 妈 mom, 奶 grandmother, 姑 young lady, and so on. Characters with the radical 口 *kǒu* (mouth) often have something to do with things you do with the mouth—吃 eat, 喝 drink, 吐 spit, 咬 bite—or with language—吗 the marker of yes/no questions, 吧 the marker of suggestions and suppositions, 呢 the marker of rhetorical questions, 啊 the marker of surprise, and so on. Characters with the radical 金 (written as 钅 in simplified characters when it occurs in characters with more than one component part) often having something to do with metal: 钢 *gāng* (steel), 铅 *qiān* (lead), and 银 *yín* (silver).

Sometimes the meaning of the radical is only loosely conveyed in the character in which it occurs. 女: 好 good, 昏 marriage. Sometimes there is no clear relationship between the meaning of the radical and the meaning of the character in which it occurs. For example, 口 (mouth) is the radical in the following characters, none of which has anything to do with the meaning of 口 mouth： 只 only, 可 possible, 台 platform, and 后 after. 女 is the radical in the following characters, none of which has anything to do with the meaning of 女 female: 如 if, 始 begin, and 委 *committee*.

In short, knowing a radical's meaning won't help you figure out the meaning of a new character in which it occurs as the radical. But it can help you remember the meaning of that character once you have learned it. For example, when you learn the character 吧, you can remind yourself that 吧 is associated with language use and therefore that it begins with 口. When you learn the characters 吧 (the marker of suggestions and suppositions) and 把 (take), you can distinguish them correctly by associating their radicals with their meanings. The radical in 吧 is 口, which is associated with language and words. The radical in 把 is 扌 hand, which is associated with actions or things that involve the hand.

A Note about Identifying the Radical in a Character
A recurring part is a possible radical if it is included in the list of radicals. But a possible radical is not necessarily *the* radical in a given character. It is the radical if it is the only possible radical in the character. But a character often includes more than one possible radical. Then, the identification of the character is sometimes rule governed and sometimes arbitrary. For example, for most characters, if the character has left-right orientation, the left-most part is the radical, as in 她 (the radical is 女) and 这 (the radical is 辶). But some radicals always occur on the right in characters with left-right orientation, so in the character 那, the radical is 阝.

If the character has top-down orientation, the radical is typically the topmost recurring part: 简 (the radical is ⺮).

If the character has outside-inside orientation, the radical is typically the outside enclosure: 国 (the radical is 囗).

The Phonetic 生旁 *shēngpáng*

The phonetic (sometimes called the *rhyme*, *rime*, or *phonetic radical*) is the part of a character that provides a pronunciation cue for the character. Not all characters have a phonetic, but scholars estimate that 80% or more of characters do. The phonetic indicates that the character in which it occurs rhymes with or vaguely rhymes with the phonetic itself.

For example, 青 *qīng* is the phonetic in the following characters, 青 *qīng*：清 *qīng*，情 *qíng*，精 *jīng*，静 *jìng*，and 婧 *jìng*. 门 *mén* is the phonetic in the following characters: 们 *men*, 问 *wèn*, and 简 *jiǎn*. 巴 *bā* is the phonetic in the following characters: 吧 *ba*, 把 *bǎ*, 爸 *bà*, and 爬 *pá*.
Studies of Chinese-educated native speakers of Mandarin have shown that the most successful elementary school–aged readers use the phonetic component in characters to identify and recall characters.

In sum, you cannot rely on a phonetic to sound out a character that you have never seen before. But if you know that a recurrent part serves as the phonetic in the character, you can use it to help you remember the pronunciation of the character. For example, you can remind yourself that the character 简 includes the recurring part 门 *mén* and that it is a near-rhyme with 门 *mén*. When you learn the characters 吧 and 把, you can remember that they are both near rhymes with 巴 *bā*.