Expanding the Space and Practice for Chinese Literacy Through Immersion

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Michele Aoki, PhD
Chan Lu, PhD

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Many Chinese Dual Language/Immersion Programs Ask these Questions

1. What are theoretical considerations for biliteracy development of Chinese immersion students? – Shuhuan Wang

2. What does research say about developing students’ initial literacy in Chinese? – Chan Lu

3. What kind of professional development can enhance teachers’ effectiveness in helping students develop literacy in Chinese? – Michele Aoki
Theoretical Considerations of Biliteracy Development of Chinese Immersion Students

Shuhan C. Wang, Ph.D.
ELE Consulting International, LLC
Project Director, CELIN at Asia Society
A Theoretical Model: *Continua of Biliteracy*

Hornberger 1989; Hornberger & Skilton-Sylvester 2000; Wang 2004

- The model takes a Language **Ecological Perspective**, considering *Environment, Evolution, and Endangerment* of language learning and teaching, and language preservation and planning and policy.

- It has been applied in language education worldwide.

- Wang has applied it to the studies of heritage language, critical/world language, and language immersion education, and language planning and policy.
Conditions and Factors Influencing the Development of Biliteracy/Multiliteracy

Theoretical Continuum of Context: When, where, and who are using the language and why and how do they use it?
For Chinese Immersion Students:
What are the contexts of Chinese language in their lives?

- Family?
- School/Community?
- The World?

Spoken language in daily life?
- Written language in daily life?
- How literate?

One Language? which one?
- Two Languages?
- Multiple Languages?
All learners are situated in different contexts: How can we increase the contexts in which Chinese can be learned and used?

Think about the Use and Mode:
English vs. Chinese/Another Language…

- Private Sphere
- Public/Society
- Spoken
- Written
- Monolingual
- Bilingual

- Heritage learners
- World language learners
- English/third language learners
- Immersion students
- Diverse background
Theoretical Continuum of Media:
What are the relationships between the languages?

- Learners’ exposures: Simultaneous or successive?
- Linguistic structures: How similar/dissimilar are they? In what way?
- Orthographic systems: How similar/dissimilar are they? In what way?
For Chinese Immersion Students: What do they have to pay attention to in order to learn English and Chinese?

- Learners’ exposures: Simultaneous or successive?
- Linguistic structures: How similar/dissimilar are they? In what way?
- Orthographic systems: How similar/dissimilar are they? In what way?
A Web of Interrelationships Between the Systems of Languages and Cultures

Knowledge: phonetics, phonology, morphology, writing system, syntax, vocabulary, semantics…

Skills: listening, speaking, reading, writing skills….

Functions: greeting, thanking, making requests, inviting, apologizing, making formal speeches or writing, pragmatics, academic discourse…..
Theoretical Continuum of Content

What is being learned in/through Chinese language?

- Minority
- Majority
- Vernacular
- Literary
- Contextualized
- Decontextualized
The Continua of Content

- What is content?

- What subject matters are taught in Chinese? What is the key content in these subject matters that are taught in Chinese?

- Is Chinese language itself also a content area? If so, what should be taught as the “content” for Chinese language and how should it be included in an immersion curriculum?
Language as the Content of Study:  
World Readiness Standards for Learning Languages  
(ACTFL, 2014)

The 5Cs

Communicating in the Language
- Comprehensibility
- Comprehension
- Language Control
- Vocabulary
- Cultural Awareness
- Communication Strategies
Subject Matters as the Content of Study

- Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects
- Common Core State Standards for Math
- Next Generation Science Standards
For Chinese Immersion Students: The Content Should:

-- *Represent multiple perspectives and voices*
-- *Include social and academic topics*
-- *be contextualized and relevant in the real world*
Theoretical Continuum of Development: What can students do in the language and how well can they do it?

Reception

Production

Oral

Written

L1

L2…
Conclusion

• When talking about developing students’ biliteracy, we must consider the continua of *Context, Media, Content,* and *Development.*

• Create opportunities and apply strategies to build bridges in curriculum, instruction, and assessment for our students to develop biliteracy.
Processes and Components of Initial English Literacy Development

What are the processes and components of initial Chinese literacy development?
Academic vocabulary and reading comprehension in a Chinese immersion program

Dr. Chan Lü, Asian Languages and Literature, University of Washington
Literature on Mandarin Immersion

> Current research primarily focus on achievements for this group of learners (e.g., Burkhauser et al., 2016; Xu, Padilla & Silva, 2015)

> Appropriateness of using a standardized tests:
  - Normed on a different population (Met, 1991, p74)
  - Criterion-referenced assessments for general language proficiency vs. for content-specific knowledge (Lü, 2019)
Literature Review

> More attention on the partner language (Fortune, 2012; Lü, 2016, 2019)

> Academic literacy development - essential for immersion programs

> Academic vocabulary plays an essential role in reading comprehension (Nagy & Townsend, 2012)
The relationship between academic vocabulary knowledge vs. general vocabulary and reading comprehension are not the same for language minority ELL learners (Kieffer & Box, 2013; Proctor et al., 2006)

Underdeveloped morphological awareness may be the source of reading comprehension difficulties among dysfluent word readers (Kieffer & Box, 2013).
Literature Review

> Morphological awareness: The recognition, understanding, and use of word parts that carry significance

> Morphological decomposition and problem-solving

> Decompose, identify, disambiguate, integrate, infer

> Boost vocabulary knowledge, lexical inference skills and reading comprehension

> E.g. nation -> national -> nationality

> International -> internationalization (signals academic literacy growth)

Anglin, 1993; Carlisle, 1995; Li & Kirby, 2014; Zhang & Koda, 2012; Ke & Koda, 2017
Morphological awareness in Chinese

> Chinese is a morphologically-rich
> Chinese morphology is much more transparent than English morphology (Anderson & Li, 2005, p.85)
> 70% of all words used in Modern Chinese are compound words (Institute of Language Teaching and Research, 1986)
> The majority of words for second language learners are also two-character compound words (Xiao, Rayson & McEnery, 2009, pp. 13-14)
Morphological awareness in Chinese

电话 diànhuà  electric speech
电视 diànshì  electric vision
电影 diànyǐng electric shadow
电邮 diàn yóu electronic mail
电池 diànchí electric pool

diàn chē  electric car  diàn lǎn  electric PC  diàn shāng  electric commerce  diàn tái  electric radio  diàn wán......
(1) Are morphological awareness and lexical inference skills predictive of vocabulary knowledge in Chinese?

(2) Are morphological awareness, lexical inference skills and vocabulary knowledge predictive of children’s ability to comprehend science texts in Chinese?
Participants

> 3rd grade learners in a Mandarin immersion program (50-50, one-way)
> N = 60
> 26 female and 34 male students
> Average age = 114 months (SD = 3.8 months)

- 27 had 1 Chinese-speaking parent, and 3 had 2 Chinese-speaking parents
- No advantage from heritage speakers over non-heritage counterparts; consistent with Xu et al, 2015 on standardized test scores in reading, writing and speaking and Lü, 2016 using curriculum-based measures.
Tasks

Morphological awareness tasks: measured children’s ability to analyze and manipulate morphemes while reading two-syllable Chinese words.

Aspects
- Derivational awareness
- Compound awareness

Tasks
- Morpheme identification
- Morpheme discrimination
- Compound construction
Examples

Morpheme identification task (N =20)

Does “玩具” come from “玩”

Morpheme discrimination task (N= 18) “odd man out”

花钱、花园、花草

Compound structure task (N =20)

用雪做成的房子叫什么? 雪房、房雪
Vocabulary knowledge measures

- Breadth of vocabulary knowledge (N = 72)
  - Vocabulary checklist (Yes/No): 42 real two-character words + 10 pseudowords + 20 impossible pseudowords (Ku, 2001)

- Depth of vocabulary knowledge (N=16)
  - Word association task (Read, 1998)
Examples

- An example for word association test
- 漂亮 (pretty)

<table>
<thead>
<tr>
<th>Box 1</th>
<th>Box 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 好看 (2) 風景 (3) 電影</td>
<td>(4) 難受 (5) 聰明 (6) 書包</td>
</tr>
<tr>
<td>(1) Beautiful (2) Scenery (3) Film</td>
<td>(4) uncomfortable (5) Smart (6) Backpack</td>
</tr>
</tbody>
</table>
Text comprehension

- Four reading passages
- Average length of 153 characters
- Topics:
  - The life of ribbon snakes
  - The life of chimpanzees
  - The life of hummingbirds
  - The dances of honey bees.
- Local and global comprehension questions
Lexical inference

- Imbedded in the reading comprehension questions
- 18 questions in total
- 17 bi-morphemic words and 1 tri-morphemic words
Lexical inference

<table>
<thead>
<tr>
<th>Target word/sentence</th>
</tr>
</thead>
<tbody>
<tr>
<td>蜂鳥是世界上體型最小的鳥類，</td>
</tr>
<tr>
<td>A humming bird is the smallest bird in the world</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Informative context</th>
</tr>
</thead>
<tbody>
<tr>
<td>牠的大小和蜜蜂差不多。</td>
</tr>
<tr>
<td>Its size is similar to that of a honey bee.</td>
</tr>
</tbody>
</table>
## Results (vocabulary knowledge)

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol digit</td>
<td>16</td>
<td>64</td>
<td>37.53</td>
<td>8.03</td>
</tr>
<tr>
<td>Vocabulary size (z-score)</td>
<td>-5.98</td>
<td>0.96</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Vocabulary depth (max 4)</td>
<td>1.13</td>
<td>3.73</td>
<td>2.75</td>
<td>0.58</td>
</tr>
</tbody>
</table>
Results (MA and reading tasks)

<table>
<thead>
<tr>
<th>Task</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derivational awareness</td>
<td>0.71</td>
</tr>
<tr>
<td>Compound awareness</td>
<td>0.55</td>
</tr>
<tr>
<td>Compound construction</td>
<td>0.59</td>
</tr>
<tr>
<td>Lexical inference</td>
<td>0.54</td>
</tr>
<tr>
<td>Text reading comprehension</td>
<td>0.37</td>
</tr>
</tbody>
</table>
## Results - correlation

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
<td>1. Symbol digit</td>
<td>-</td>
<td>.21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Vocabulary knowledge size</td>
<td>.21</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Vocabulary knowledge depth</td>
<td>.16</td>
<td>.09</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Derivational awareness</td>
<td>.15</td>
<td>.15</td>
<td>.11</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Compound awareness</td>
<td>.25</td>
<td>.37**</td>
<td>.38**</td>
<td>.41**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Lexical inference</td>
<td>.20</td>
<td>.13</td>
<td>.47***</td>
<td>.36**</td>
<td>.58***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7. Text comprehension</td>
<td>.13</td>
<td>.17</td>
<td>.53***</td>
<td>.34**</td>
<td>.44***</td>
<td>.56***</td>
<td>-</td>
</tr>
</tbody>
</table>
Results (summary of regression analysis)

- Lexical inference skills *fully* mediated the relationship between compound awareness and vocabulary knowledge depth

- Vocabulary depth contributed significantly to text comprehension (but not vocabulary size)

- Morphological awareness and lexical inference skills jointly contributed to the prediction of text comprehension in Chinese.
Implication

- Common Core State Standards (CCSS, NGA Center & CCSSO, 2010) does not emphasize the “metalinguistic” approach (Ebbers, 2012)

- Emphasize salient and relevant features of the language and its writing system

- Academic vocabulary
Implication

- Vocabulary instruction (Stahl & Nagy, 2006, p. 75)
  - Planned and opportunistic

- Integrating language and content (Swain, 1996)
  - More fundamental planning is needed
  - Language and content integration does not happen automatically and situations have to be contrived
Seattle’s Journey in Mandarin Dual Language Immersion

Michele Aoki, PhD
International Education Administrator
Seattle Public Schools, WA
Mandarin Dual Language Immersion (DLI) Launched in Seattle:

- Fall 2008 at Beacon Hill International Elementary School
- Fall 2014 at Dearborn Park International Elementary School
- Fall 2014 at Mercer International Middle School
- Fall 2017 First cohort entered High School
- As of Spring 2018:
  - Grades K-5 at Beacon Hill; K-4 at Dearborn Park
  - Grades 6-8 at Mercer International Middle School
  - Grades 9-10 at a variety of high schools in the region
On the Path to Proficiency

• Over multiple years of proficiency testing* at 3rd, 5th, and 8th grade benchmarks, Reading in Chinese was always the lowest skill

• We determined that to expand their Reading proficiency, students need to read more broadly and more often

• *Seattle uses the Standards-based Measurement of Proficiency (STAMP) from Avant Assessment
Challenge of Teaching Literacy in a Chinese DLI Program

- In DLI the focus is on teaching content (e.g., Math and Science) so teachers prioritize that.
- In a 50:50 time model, never enough time in the partner language to teach content and language (and literacy).
- Teaching literacy in a character-based language (like Chinese) requires a different approach than teaching literacy in a language with a shared alphabet (like Spanish).
- At middle school, content instruction shifts from Math and Science to Social Studies.
- Students need strong literacy skills to engage with the content, but they need to enjoy communicating and learning in Chinese in order to stay motivated to continue.
Chinese Literacy Project launched in 2016

- Following workshops in 2015 with Dr. Mimi Met, sponsored by the Confucius Institute of the State of Washington (CIWA), we decided to launch the CIWA Chinese Literacy Project

- Goal: to create a set of resources and curriculum frameworks that will benefit Seattle’s Mandarin Dual Language Immersion Programs, but also be shared across Washington state and the United States

- What type of professional development would help us reach our goal?
State-wide professional development on Chinese literacy development

- **Chinese Language Teachers Association – Washington (CLTA-WA)** – strong professional organization of Chinese teachers at all levels

- **STARTALK Teacher Programs** – federally funded grant to prepare Chinese teachers to be certified to teach in K-12 public schools

- **Confucius Institute of the State of Washington** – funds much professional development for Chinese teachers and collaborates with CLTA-WA

- **University of Washington Asian L&L** – partners with CIWA and K-12 to offer workshops for teachers
Goals of Professional Development about Literacy

- Increase teachers’ knowledge and understanding of literacy issues in Chinese
- Involve teachers in piloting various products (Level Chinese, Joy Reader, Mandarin Matrix, etc.)
- Develop a learning community of teachers engaged in literacy work
- Develop Chinese teachers as leaders among their peers
Example: Chinese Literacy Workshop Series

http://confucius.washington.edu/event/chinese-literacy-lecture-series/

October 21, 2017 at the University of Washington

An Integrated Approach to Language Teaching and Assessment by Dr. Keiko Koda, Carnegie Mellon University

Chinese as Second Language — Critical Reading and Writing by Dr. Wenling Li, Trident University International
Example: Chinese Reading with Level Chinese


August 18, 2017 at Beacon Hill International School, Seattle Public Schools

Introduction to the CIWA Literacy Project

How to use the Specific Leveled Objectives in Level Chinese effectively

Getting started with Level Chinese for new teachers

A closer look at the data and plans for next year
Workshop on Chinese Literacy

Enthusiastic Chinese teachers after Literacy Workshop August 2017
Example: Beauty of Hanzi

http://confucius.washington.edu/event/the-beauty-of-hanzi/

November 4, 2017 at the University of Washington

Understand how Hanzi (Chinese Characters) came into being

Experience its beauty in terms of pronunciation, formation, and meaning
Example: Getting to Know Mandarin Matrix

http://confucius.washington.edu/event/getting-to-know-mandarin-matrix/

April 24, 2018 at the University of Washington

Workshop with Eric Chipman

Familiarize teachers, administrators, families, and community members with the innovative products being developed by Mandarin Matrix, in conjunction with their partners at the Confucius Institute of the University of Utah and Utah’s Mandarin Dual Language Immersion (DLI) programs.
Example: Chinese Linguistics for Language Teachers

http://confucius.washington.edu/event/uw-summer-course-chinese-linguistics-for-language-teachers/

July 19-August 17, 2018 at the University of Washington

UW Summer Course:
Chinese Linguistics for Language Teachers
By Dr. Chan Lu

Lay the groundwork for a solid understanding of how the Chinese language and its writing system functions.
Language and Literacy in Dual Language Immersion


November 2, 2018 at the University of Washington

Language and Literacy in Dual Language Immersion
by Dr. Chan Lu

How oral language competences in the two languages contribute to children’s literacy skills within and across languages, and how facets of children’s language-specific skills contribute to their literacy learning differently.
Chinese Early Language and Immersion Network: CELIN at Asia Society

Shuhan C. Wang
Joy Kreeft Peyton
Ting Shen

http://asiasociety.org/china-learning-initiatives/chinese-early-language-and-immersion-network
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Developing Initial Literacy in Chinese

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:

Find this and other CELIN Briefs Online:
https://asiasociety.org/china-learning-initiatives/celin-briefs-chinese-language-learning-and-teaching
谢谢！Thank you!

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