

Running Head: EARLY CHINESE LITERACY

Curricular and Instructional Influences on Early Literacy Attainment: Evidence from Beijing, Hong Kong and Singapore

Hui Li

Nirmala Rao

The University of Hong Kong

Date of Resubmission: April 14, 2005.

Correspondence should be addressed to Dr. Hui Li, Faculty of Education, The University of Hong Kong, Pokfulam Road, Hong Kong. Electronic mail may be sent to philiphuili@gmail.com.

Abstract

This study considered curricular and instructional influences on early Chinese literacy attainment in Beijing, Hong Kong and Singapore. The participants included 198 pre-school children, their teachers and parents. Children were administered the Pre-school and Primary Chinese Literacy Scale at the age of either 2 or 3 years, and again one year later. Teachers were asked to report on their beliefs and practices related to literacy education and classroom observations were conducted to determine the extent to which directives issued by the Beijing, Hong Kong and Singapore governments were implemented. Investigation showed that there were marked differences across the societies in curriculum guidelines and approaches to literacy teaching. Results indicated that by the age of 4, pre-schoolers in Hong Kong and Singapore had significantly better Chinese literacy attainment than those in Beijing. Although age was the best predictor of attainment, location, teacher's qualifications and classroom experience also significantly contributed to children's literacy attainment.

Comment [H1]: Yes, it is a test

Curricular and Instructional Influences on Early Literacy Attainment: Evidence from Beijing, Hong Kong and Singapore

Research conducted in English speaking countries indicates that there are wide variations in children's pre-literacy skills and that reading skill in pre-school is correlated with reading ability in primary school (Scarborough, 1989). These findings have led to an increased focus on the teaching of literacy in pre-schools in these countries. Both family and school related factors influence early literacy attainment. Family influences include: maternal education, home environment (Snow, 1991, 1999) and Social Economic Status (SES) (Whitehurst, & Lonigan, 1998). Further, both what is taught and how it is taught in a pre-school setting are important determinants of early literacy attainment. This study focused specifically on curricular and instructional influences on Chinese literacy attainment by comparing pre-school children in Beijing, Hong Kong and Singapore.

The cognitive demands of learning English or Chinese may differ because of orthographical differences between the two languages. Unlike the English language, the written unit in the Chinese language, the character, indicates both meaning and phonology. Indeed, research indicates that morphological awareness contributes significantly to young children's Chinese character recognition (McBride-Chang, Shu, Zhou, Wat, & Wanger, 2003). Given the fact that children may have more difficulty understanding and reproducing complex characters than English alphabets, instructional approaches used to facilitate reading Chinese may have a considerable influence on early Chinese literacy attainment.

It is important to note that the status of the Chinese language differs in Beijing, Hong Kong and Singapore. In the People's Republic of China (Mainland China), there is only one official language, Chinese. The spoken form is Putonghua and simplified Chinese characters are used for writing. Hong Kong has two official languages and aims to be a tri-lingual (Putonghua, Cantonese and English) and bi-literate (Chinese and English) society while

Comment [H2]: Mainland China refers to the People's Republic of China (PRC). Greater China is the term which is used to refer to the PRC, Hong Kong, Taiwan and Macau.

Singapore has four official languages (English, Chinese, Malay and Tamil). In Singapore, English is used as the language of instruction in schools and the child's mother tongue is taught as a second language. Despite differences in the prominence of the Chinese language, comparisons between Beijing, Hong Kong and Singapore are particularly instructive for several reasons. First, pre-school curriculum guidelines vary markedly in terms of both explicitness and content. For example, the Singapore government has broad guidelines about the curriculum whilst the PRC government has issued very specific curriculum directives. Second, curriculum guidelines reflect distinct views on the age at which to start formal literacy teaching. For example, the view espoused in the PRC is that formal reading instruction should not commence until children are 6 years old, when entering primary school.. On the other hand, guidelines in Singapore reflect a belief that the pre-school curriculum should include a focus on preacademic skills. Third, informal observations of pre-school education suggest that considerable differences in approaches to early literacy exist across the three societies. These differences will be explored in the present study.

Pre-school Curriculum and Instruction in Beijing

From the 1950s to the 1970s, school education policies in China were influenced by those in the former Soviet Union (Hayhoe, 1984) and since the 1980s they have been influenced by US educational policies (Li & Li, 2003). The same is true for pre-school curriculum guidelines. From the 1950s to the 1980s, a subject-centred pre-school curriculum, based on the Soviet model, was followed in the PRC. The teaching of Chinese literacy and testing of children's achievement in pre-schools were prohibited from 1952 with the publication of the *Tentative Regulations on Work in Kindergartens (Trial Version)* (GOC, 1952). Reminiscent of Elkind's (2001) position of "much too early", the government viewed

early literacy teaching as a waste of time and was concerned that it could be counterproductive. Hence, it advocated waiting until children were at least 6 years old before embarking on formal literacy instruction. Despite repeated requests from academics and parents to review this policy, the directive is still in effect.

In the early 1980s, China initiated a set of political, economic and educational reforms to transform the country into a market economy and modernized society. Large-scale reform in the field of early childhood education commenced. The reform documents promoted an integrated early childhood curriculum and criticised the subject-based curriculum (Li & Li, 2001). The *Regulations on Work in Kindergartens* issued by the China State Educational Committee in 1989 reinforced the notion of an integrated curriculum, advocated play-based learning, and denounced the explicit teaching of academic skills (China Pre-school Education Research Society, 1999). Some of the principles that underlie the approaches recommended by the *Regulations* are rooted in Western views of early pedagogy and are not consistent with traditional Chinese beliefs about early learning. For example, China has emphasised rote learning and the teacher has typically been a transmitter of knowledge rather than a facilitator of learning. Pre-school educators experienced difficulties in implementing the *Regulations* because they were not accompanied by practical guidelines and because many of the *regulations* were inconsistent with traditional beliefs and practices about early learning (Wang & Mao, 1996). Hence, between 1990 and 2000, Chinese early childhood educators were in a transition phase and had difficulties embracing new ideas in their practices (Li & Li, 2001).

In 2001, the Ministry of Education issued the *Guidance for Kindergarten Education* (GOC, 2001). The document provides advice to early childhood educators in order to bridge the gap between the progressive ideas and actual practices in pre-schools. Detailed suggestions, accompanied by specific requirements for content in five domains of

development (health, language, society, science, and art) are provided. It should be noted that a variety of curriculum approaches, including programmes based on Montessori , High/Scope and Reggio Emilia, have been trialled in the PRC (Li & Li, 2003).

In the 1990s, a few approaches to teaching Chinese literacy emerged under the guise of "educational experiments". Some kindergartens tried out different approaches to the teaching of reading, and reports indicate that many of these were "effective" (Liang, Li & Wu, 1997). Yet, these findings have not influenced the pre-school curriculum. The success of the various approaches may be a result of the fact that the first few hundred characters are comparatively easy to learn. Pre-school curriculum guidelines have changed over the years. However, as mentioned earlier, the ban on direct teaching of literacy skills remains in force today.

Pre-school Curriculum and Instruction in Hong Kong

The *Manual of Kindergarten Practice* issued by the Hong Kong Government (Education Department, 1984) provides guidelines on general curriculum aims, teaching principles, programme planning, organization and content, as well as recommendations for the schedule, organization of space, basic furniture and teaching resources. In 1996, the Hong Kong Government published the "*Guide to the Pre-primary Curriculum"* (Education Department, 1996). This is a common curriculum guide for both kindergartens and child care centres, which recognises that "education" and "care" can not be separated in the provision of services for young children (Rao, Koong, Kwong & Wong, 2003). The Guide promotes a child-centred approach and stresses all-round development of children. It espouses contemporary views on effective early teaching and learning and provides suggestions for facilitating intellectual, communicative, personal, physical and aesthetic development. The Hong Kong Government has expressed concern that some kindergartens still go too far in presenting formal academic curricula, using inappropriate teaching methods for children

below the age of six (Rao, 2002). Hence in 1999, the Education Department published a list of 'Dos and Don'ts' for kindergartens (Education Department, 1999). The list of 'Dos' includes having a curriculum that covers moral, cognitive, physical, social, and aesthetic aspects of development by organising activities that promote all-round development; organising various child-centred learning activities; using the mother-tongue as the language of instruction; and respecting individual differences. The vast majority of Hong Kong's population speaks Cantonese as a first language, but parents also want their children to learn English. A common practice in Hong Kong is to combine Cantonese and English, but this presently results in poor standards of both languages. The document points out that a focus on separate language development can help to improve the situation. The list of 'Don'ts' also reflects the Hong Kong context: don't ask children in Nursery Class (aged three to four years) to write; don't ask children to do mechanical copying exercises; don't adopt a one-way, lecturing form of teaching, and don't design a curriculum which is too difficult.

In 2000, the Education Commission put forward proposals to enhance the professional competence of early childhood educators, improve quality assurance, reform the monitoring mechanism, enhance the links between early childhood and primary education, and promote home-pre-school co-operation (Education Commission, 2000). However, the education reform documents did not address pre-school curriculum, per se.

It should be noted that children in Hong Kong are exposed to both Chinese and English at the pre-school level. The Hong Kong government considers the early years a time to promote the mother tongue, (i.e., Chinese) and consequently, official documents, such as the guidelines on pre-school curriculum published in 1984, 1993 and 1996, make no mention of teaching English (Wong & Rao, 2004). However, almost all kindergartens in Hong Kong do teach some English. English is valued by parents as a route for advancement in the education system and society. Parental desire for early literacy instruction has resulted in

extensive whole-group instruction, intensive drilling and a focus on rote memorization of isolated skills (Ho & Bryant, 1997; Law, 1999; Opper, 1992). Kindergartens know that English is required in primary school, and therefore teach it at the pre-school level as a form of preparation (Wong & Rao, 2004).

Pre-school Curriculum and Instruction in Singapore

The compulsory bilingual education policy instituted in Singapore since 1966 has led to English being learned as the first language and the child's mother tongue being learned as the second language (Cheah & Lim, 1996). English is widely used as the language of instruction in schools and for official communication. However, the growing interest in investing in China, as well as, the dominance of Chinese population in Singapore has led to an increasing concern about the Chinese language because of its importance in the transmission of Chinese culture and values (Li & Rao, 2000). Chinese parents in Singapore want to ensure that their children start learning to read and write Chinese at an early age, and achieve an acceptable level of competence in the Chinese language. This view is widely accepted by pre-school teachers in Singapore (Cheah & Lim, 1996).

The Government of Singapore has issued guidelines on pre-school English curriculum but none exist for the teaching of Chinese at the pre-school level. Consequently, pre-school curriculum and instruction in the Chinese language have been left to kindergarten proprietors. Most pre-schools are privately owned and they operate in a highly competitive environment. Programmes for young children focus on language, literacy, numeracy, art, music, and computing skills and the direct teaching of Chinese literacy is very popular in Singapore pre-schools. Interestingly, while pre-school teachers in Singapore believe that their pre-schools emphasise pre-academic skills, parents and primary schools desire an even greater academic focus.

Although the three societies value the transmission of Chinese culture, they diverge

significantly in the pre-school curriculum guidelines and strategies recommended to develop Chinese literacy. In Beijing, the teaching of reading and writing is prohibited to prevent the adoption of what are considered inappropriate instructional approaches and the adverse long term consequences of premature teaching. In Hong Kong, the pre-school curriculum guidelines provide suggestions on the teaching of both Chinese and English literacy. On the other hand, the Singapore government has a laissez-faire policy with regard to the teaching of Chinese literacy in the early years. Despite differences in the status of the Chinese language in Beijing, Hong Kong and Singapore, this study considers the impact of differences in pre-school curriculum guidelines on early Chinese literacy attainment, across these three societies.

While curriculum guidelines and instructional methods in educational settings have an important influence on early literacy attainment, other factors including home influences, school-home connections, and the degree of environmental support for learning two languages in bilingual societies, also impact on early literacy. Research with English-speaking populations has found that influences of parents, home environments, SES, home-school connections, and environmental supports are critical for early literacy acquisition (Snow, 1999; Whitehurst, 1999; Whitehurst, & Lonigan, 1998). Beijing is a monolingual society and children living there can be expected to show higher Chinese language proficiency than in Chinese societies where languages other than Chinese are taught at the pre-school level. Hong Kong is essentially a Chinese society and there is much support for the learning of Chinese, while English is considered an auxiliary language. Conversely, in Singapore, English is more dominant. Given this background, one would expect children from Beijing to show higher Chinese literacy attainment than those from Hong Kong and Singapore. However, this is not the case.

Li and Rao (2000) examined parental influences on pre-school Chinese literacy attainment in Beijing, Hong Kong and Singapore. Children ranging in age from 2 to 6 years

were administered the Pre-school and Primary Chinese Literacy Scale (Li, 1999) and the parents' reported on their own involvement in literacy teaching. Results indicated that by the age of 4, children in Hong Kong and Singapore showed higher Chinese literacy attainment than those in Beijing and that children in Hong Kong had significantly higher Chinese literacy attainment than those in Singapore. Findings indicated that the age at which parents begin teaching their children to read Chinese significantly contributed to the prediction of Chinese literacy attainments in all three societies.

We know that, in addition to home environment, approaches to instruction affect reading attainment. Based on a review of studies which considered instructional approaches to Chinese reading, McBride-Chang (2004) suggests that children's learning of reading skills is better when they receive explicit instruction. However, McBride-Chang (2004) also claims that drawing conclusions about the effectiveness of different approaches to the teaching of Chinese reading is problematical, as language, character script, and teaching systems vary across different Chinese societies. Notwithstanding these linguistic differences, the current authors compared Chinese literacy attainment in Beijing, Hong Kong and Singapore. On the basis of the previous work and detailed analyses of pre-school curriculum guidelines, the following predictions were made:

1. In all three societies, we expected older children to show higher literacy attainment than younger children.
2. We predicted that, by age 4, children in Hong Kong and Singapore would show significantly better literacy attainment than those in Beijing.
3. We assumed that there would be a "good fit" between pre-school curriculum guidelines and actual pedagogical methods used for literacy instruction in pre-schools. For example, we did not expect to find Beijing pre-schools teaching reading and writing, but expected Hong Kong and Singapore pre-schools to do so.

Method

Participants

Children were followed longitudinally for one year. At Phase 1, participants included 240 children, their parents and kindergarten teachers in Beijing, Hong Kong, and Singapore. The sample included 40 two-year olds and 40 three-year-olds from each location. Boys and girls were also equally represented in the sample. One year later, at Phase 2, 198 of the 240 children were re-assessed. The sample included: 66 children in Beijing (34 three-year-olds and 32 four-year-olds) from four randomly selected kindergartens in *Xicheng* and *Chongwen* districts; 62 children in Hong Kong (30 three-year-olds and 32 four-year-olds) from three kindergartens and one childcare centre located in *Hong Kong Island, Kowloon*, and *New Territories*; and 70 children from Singapore (38 three-year-olds and 32 four-year-olds) enrolled in four pre-schools located in *Tampines, Jurong West, Hougong* and *Woodlands*. All 12 pre-schools catered for children from middle-class backgrounds. In Hong Kong and Singapore, children were from families where at least one parent spoke Chinese at home.

There were no significant differences in demographic variables and the mean PPCLS scores at Phase 1 between the children who were assessed at Phase 2 and those who were not (n=42) . This indicated that sample attrition was not a source of bias in this study.

Parental education attainment in the three societies varied widely, but societal differences in literacy remained after controlling for parental education (see Li & Rao, 2000). Teacher educational attainment in the three societies ranged from the completion of junior secondary school to the procurement of undergraduate degrees. The average number of years of school education for teachers in Beijing, Hong Kong and Singapore was 12.82, 11.25 and 11.15, respectively. The corresponding figures for years of professional training were 4.68, 2.27 and 0.8 in Beijing, Hong Kong and Singapore, respectively. Teachers in Beijing had

more years of education and teacher education than their counterparts in the other two societies.

Measures

Pre-school and Primary Chinese Literacy Scale (PPCLS). This instrument consists of four subscales: Picture-Character Matching (Character Identification), Listen-and-Point (Visual and Auditory discrimination), Point-and-Read (Word Recognition), and Read-and-Say (Expressive Vocabulary). A full description of these subscales is available in Li & Rao (2000). The total PPCLS score was regarded as the indicator of a child's Chinese literacy attainment and was used in data analyses. The PPCLS is a reliable and valid measure of Chinese literacy (Chow & McBride-Chang, 2003; Li, 1999).

Classroom Literacy Environment Index (CLEI). This index was developed to tap teacher beliefs and practices related to Chinese literacy education, classroom literacy resources, reading strategies and teacher-child interactions. The scale consists of 30 items, which have forced-choice responses. Some items follow a Likert-type format, whereas in other items the choices on the rating scale differ on qualitative dimensions. For example, teachers responded to the question, "How many Chinese books are currently available in your classroom?", by selecting one of the following 5 alternatives: no Chinese books; less than 10 books; 10 - 29 books, 30-50 books; more than 50 books. Another item is concerned with how often the books displayed in the classroom are changed. Teachers responded by selecting one of the following choices: not applicable; about once a year; about twice a year; once a month; once a week. During Phase1, 48 class teachers (16 from each location) of the 240 children who participated in the study completed CLEI.

Classroom observations. During Phase1, the first author conducted classroom observations of literacy teaching in 11 classes in which the child participants were students.

Teachers were requested to follow their normal routines. In Beijing and Hong Kong, all children in these classes were ethnic Chinese, as were the vast majority of the children in the Singapore pre-schools. The focus of the observation was the teaching strategies deployed by the teacher and a running record was made of classroom events. Information regarding the physical set up and classroom displays was also obtained.

Comment [H3]: Only teachers are eligible to teach young children.

Procedure

Class teachers were trained to administer the PPCLS and then assessed children using the scale. During Phase1, children were administered the PPCLS, teachers completed the CLEI, and classroom observations were conducted. Additionally, parents were asked to complete the Home Literacy Environment Index (HLEI) (Li & Rao, 2000). During Phase 2, children were re-administered the PPCLS by the same teachers who assessed them During Phase 1. The current paper focuses on pre-school literacy environments; therefore the data from the HLEI are not discussed.

Results

Societal differences in Chinese literacy attainment

Two MANOVAs with Location (3) X Age (2) X Gender (2) as between-subject variables were conducted. The dependent variables for one MANOVA were the PPCLS subscale scores (Character Identification, Visual and Auditory Discrimination, Word Recognition and Expressive Vocabulary) at Phase 1 and Phase 2. For the other MANOVA, the dependent variables were the PPCLS total scores, formed by adding the 4 subscale scores, at Phase 1 and Phase 2. The two MANOVAs showed the same pattern of results. Hence, we decided to focus on the PPCLS total score and follow-up analyses are reported for this variable.

The MANOVA on the PPCLS total score indicated that there were significant main effects of Age at both Phase1 [F (1, 238) = 3.97, $p < .01$] and Phase 2 [F (1, 196) = 12.88, p

< .001]. Further, the main effects of Location at Phase2 [F (2, 196) = 3.54, p < .05] and the Age X Location interaction [F (5, 192) = 3.63, p < .05] were significant. Since Gender was not significant, data from boys and girls were combined for subsequent analyses.

Insert Table 1 about here

Table 1 shows the mean PPCLS scores across age and societies. Two ANOVAs were conducted, with Age (2) and Location (3) as between-subject variables. The dependent variables were the PPCLS total scores at Phase1 and Phase 2, respectively. Results paralleled the MANOVA results and indicated that the main effect of Age was significant at both Phase1 [F (1,238) = 3.97, p < .01] and Phase2 [F (1,196) = 12.88, p < .001] . The Age X Location interaction was also significant, F (5,192) = 4.02, p < .05. Subsequent analyses focused on societal differences among children of the same age. A series of one-way ANOVAs, with Location (3) as the independent variable were conducted. Results indicated that at Phase1, there were no significant differences among the two-year-olds from the three societies, F (2,117) = 2.30, p > .05. There were also no significant differences among the three-year-olds from the three locations at either Phase1 [F (2,117) = 1.38, p > .05] or Phase 2 [F(2,99) =3.49, p > .05)]. However, there were significant differences among four-year-olds who were assessed at Phase2, F (2, 95) = 7.35, p < .001. Follow-up analyses using Scheffe's test indicated significant pair-wise differences between children in Beijing and Singapore and between children in Beijing and Hong Kong. Hence, results suggest that significant societal differences emerge by age 4.

Insert Figure 1 about here

Classroom literacy environments

Teacher Beliefs about Literacy. The majority of teachers in Hong Kong (93.5%) and Singapore (81.4%) regard early literacy teaching as a preparation for primary school. On the other hand, most Hong Kong teachers (62.9%) said that they conducted literacy education just "to follow the curriculum of school".

Children in pre-schools in Hong Kong and Singapore are exposed to more than one language. Most teachers (80.0%) in Singapore assume that bilingualism is a basic need in their community, but few teachers (8.1%) in Hong Kong assume bilingualism is necessary for their children's future educational and occupational success. About 60% of all participating teachers in the three locations believe that the earlier a second language is introduced, the easier it would be for children to learn. On the other hand, while 63.6% of Beijing teachers believe that children are capable of learning more than one language, only a small number of Hong Kong (3.2%) teachers believe that F (2, 45) =32.49, $p < .001$.

Insert Table 2 about here

Classroom Literacy Resources. There were significant differences across societies in the number of Chinese books available for children in the classroom, F (2, 45) = 58.98, $p < .001$. In Beijing, 81.8% teachers reported that they had more than 30 Chinese books available for children, whereas all the teachers in Hong Kong and 85.7% teachers in Singapore said they had no more than 29 Chinese books. Significant differences were also found between the three societies in terms of the frequency of changes made to the Chinese books made available to children in the classroom, F (2, 45) = 30.25, $p < .001$. Most teachers in Beijing (87.9%) changed books in the bookshelf once a month, whereas the majority of teachers in Hong Kong (74.2%) and Singapore (67.2%) did it biannually or annually.

Teacher Reported Practices. There were differences across societies in teachers' involvement in Chinese literacy education. Almost all the teachers in Hong Kong (98.4%), a large majority in Singapore (71.4%), and only a few in Beijing (34.8%) reported that they provided instruction in reading Chinese characters to children under 5 years. Further, all teachers in Hong Kong and Singapore taught 4 year-olds how to write Chinese characters whereas none of the teachers in Beijing reported doing so, F (2,45) = 38.53, $p < .001$.

The majority of teachers in Hong Kong (83.9%), Beijing (69.7%), and Singapore (52.9%) set a definite time for reading Chinese stories to their children. All teachers in Hong Kong (100%) reported that each reading session lasted less than 15 minutes, whereas most teachers in Beijing and Singapore reported spending around 15-30 minutes reading to children every day. The differences in time spent reading in pre-schools across the three societies were significant, F (2,45) = 26.22, $p < .005$.

Classroom Observations. These observations indicated that children in Hong Kong and Singapore were exposed to teacher-directed and explicit instruction, as will be highlighted below. Teachers typically taught children to recognise Chinese characters and practice writing the characters which they had just learned, using traditional methods. On the other hand, children in Beijing typically experienced “new” pedagogical approaches to character recognition. The following excerpts from written transcripts from the observations provide an illustration of these contentions:

> Beijing Class A
> Teacher A2: Please take out your textbook, put it on your table, and look at Lesson 3.
> [The children then took out their colourful textbook and opened the page with Lesson 3. The textbook, “Listen & Read Approach to Chinese Literacy”, is produced and published by a commercial organisation. Familiar words are repeated in different sentences to form a simple poem or story.]
> Teacher A2: Now, please listen to the tape carefully; Try your best to point with your finger at each character as it is read.
> [The children put their fingers on the first character of the Lesson 3 and waited for the tape to start. The teacher switched on a cassette player. Only some children pointed to the correct character.]
> Teacher A2: Now, please point to the correct characters and read aloud with the audiotape.
> [The children listened to the audiotape, pointed to the text and read aloud. All the children repeated the correct words, even those who pointed to the wrong character. The teacher walked around the tables to help these children put their fingers on the correct character.]

In an interview conducted after the observation, this teacher stated that she was not teaching Chinese reading. She claimed that she was merely promoting associations between hearing, pointing and reading aloud. However, based on the observation, it appeared as though she was indeed teaching (pre)reading skills, by using the traditional 'read-aloud approach'. For example, she asked the children to point to the characters as they said the words.

> Hong Kong Class B
> Teacher B3: Please put your hands on your knees and keep quiet. Look at the whiteboard.
> [The children became quiet and turned to the whiteboard. Some boys in the rear of the classroom were still chatting, and the teacher paused for several seconds to wait for them. They stopped talking and looked at the teacher.]
> Teacher B3: Look at this character, what is it? It is "faa1"[1](flower)
> [The teacher read this new character and showed how to write it and directed children's attention to the placement and order of strokes. The teacher told a story about this character to make it memorable.]
> Teacher B3: Follow me, read it aloud, "faa1(flower)! faa1 (flower)! faa1 (flower)!" [The students read it repeatedly, whole-class reading alternating with individual turns. The reading was followed by a 15-minutes period for writing the new characters they had just learned in the group session.]

This type of teacher-directed traditional approach has been used by Chinese teachers for thousands of years.

> Singapore Class C
> Teacher C1: Listen to me carefully; this is "ji1" (chicken), "ji1"! "ji1"! What is the difference between "ji1" (chicken) and "ya1" (duck)? Note the left radical, "ji1" is "you4" (又)， "ya1" is "jia3" (甲), they are different. But they share the same radical "niao3" (鸟) (bird） on the right. [The students gazed at their teacher curiously and silently, trying to grasp the major points and identify the two characters. Some children did not focus their attention on the task and were playing with their classmates.]
> Teacher C1: Now, please use your index finger to write the two characters in the air, follow me …
> [The teacher wrote the characters on the whiteboard, rehearsed the order of strokes, and analyzed the structure again. Children had to read the new characters repeatedly, whole-class reading alternating with individual turns.]
> Teacher C1: Okay, take out your exercise book and write the two characters 10 times each. [During the following 15 minutes, the children copied the characters in their exercise books. Some children had difficulty with the task and the teacher walked around the class helping children as appropriate.]

The typical order of instruction of Chinese characters was from single element characters to compounds, from high frequency to low frequency characters, and from regular

[1] Cantonese is a toned language, the numerals after Romanised forms represent the tone (highest =1, lowest = 6) of each word; 1= high level, 2 = high rising, 3 = mid level, 4 = low falling, 5 = low rising, 6 = low level.

to irregular characters. Interestingly, there were not many differences between Hong Kong and Singapore in the teaching of reading.

Contributors to Chinese literacy attainment

We conducted a hierarchical regression analyses to examine specific predictors of Chinese literacy attainment at Phase 2. We entered Age in Step 1 and Location (dummy coded as Beijing: 1; Hong Kong: 2; and Singapore: 3) in Step 2. In the following steps, we entered years of teaching experience, years of teaching writing to children, and the number of books available in the classroom. Results of the regression analyses are presented in Table 3. All variables, excluding the number of books available in the classroom, significantly contributed to prediction of Chinese literacy attainment and together accounted for 29% of the variance in Phase 2 scores. Age and location accounted for 12.9% and 5% of the variance, respectively in PPCLS scores. Together teaching experience and years of teaching writing to children explained 12% of the variance in the scores. But the number of books available in the classroom did not significantly contribute to the prediction of Chinese literacy. It should be noted that if the Home Literacy Environment Index is added as a predictor (Li & Rao, 2000), this model could explain 61% of the variation in PPCLS scores.

Comment [H4]: This is a score.

Insert Table 3 about here

Discussion

The study examined curricular and instructional influences on early Chinese literacy by comparing the literacy attainment of children, ranging in age from 2 to 4 years, in Beijing, Hong Kong and Singapore. We predicted that age, location, curriculum and pedagogy would influence Chinese literacy attainment. In general, all these predictions were substantiated by our findings.

Age and Societal Differences in Literary Attainment

Age was the best predictor of Chinese literacy attainment. In all three locations , older children showed significantly better attainment than younger ones. There were no significant differences among two- and three-year olds in the three societies but significant societal differences emerged at age 4. Children in Hong Kong and Singapore showed significantly better Chinese literacy attainment than those in Beijing. This pattern of findings is consistent with those reported by Li and Rao (2000) who also found significant age effects for literacy attainment and that differences between the societies were only significant for children over 4 years.

The reasons for these societal differences are complex and are a result of many home and school-related factors. Li and Rao (2000) found that despite differences across the three societies in pre-school curriculum guidelines, parental involvement significantly contributed to the prediction of Chinese literacy attainment of young children in Beijing, Hong Kong and Singapore. In attempting to explain these societal differences, it is important to acknowledge that a variety of factors may have worked in combination to produce them. Nevertheless, this paper focuses on school-related factors, as we believe the content and methods of literacy education are important determinants of children's early literacy development.

Societal Differences in Curriculum Guidelines and Instructional Approaches

It is important to bear in mind that curriculum guidelines on early literacy are influenced by wider educational policy and beliefs about the learning capabilities of children. For example, in some European countries, children only start formal schooling at age 7 and this is when they first receive formal instruction in reading. On the other hand, in some Asian countries, instruction in reading is given to children as young as 3 years. Beliefs about the appropriate age to start reading are reflected in educational policy, and in turn, in curriculum guidelines. In addition to variations across societies, there may also be wide

distinctions in approaches to literacy instruction within a society. For example, the phonics, whole language or other approaches to early English literacy instruction are used in North American. In contrast, there tends to be little variation in methods of reading instruction in primary schools in China, with the drill-and-practice approach typically used for the teaching of Chinese characters (Wu, Li & Anderson, 1999). The same approach was prevalent in the pre-schools we observed in Hong Kong and Singapore.

We predicted that there would be a good fit between pre-school curriculum guidelines and classroom practices and this assumption was supported by our data. Curriculum guidelines in Beijing prohibit the teaching of reading and writing in pre-schools. The rationale behind these guidelines is to avoid pedagogically and age-inappropriate pre-school practices and the potentially adverse long term effects of premature teaching. The curriculum guidelines in Hong Kong focus on holistic development but do suggest strategies for early literacy instruction and implicitly endorse the teaching of reading and writing (Education Department, 1999) to young children. The list of Dos and Donts for kindergartens reflects a concern about inappropriate curriculum content and methods for young children. The absence of curriculum guidelines related to Chinese literacy instruction in Singapore suggests that it is neither prohibited nor encouraged.

There were significant differences across the three societies in teachers' reported involvement in Chinese literacy education, which might be a direct result of, amongst other things, the curriculum guidelines which they are required to adhere to. As a consequence of prohibiting the early teaching of literacy, few children in Beijing started learning to read and write in classrooms before they were 5 years old, whereas the majority of their counterparts in Hong Kong (98.4%) and Singapore (71.4%) did so. However, classroom observations indicated that there might be a gap between reported and actual classroom literacy practices. For example, two of the four participating Beijing pre-schools had started to teach Chinese

reading with the "Listen & Read Approach to Chinese Literacy", which is produced and promoted by a commercial organisation. Although the teachers did not define what they were doing as teaching Chinese reading, the observations indicated that they were , as we can see from the Teacher A2's case. Classroom observations in Hong Kong and Singapore also indicated that both Chinese reading and writing were often taught using a drill-and-practice approach.

In general, there was consistency between pre-school curriculum guidelines and actual methods of literacy instruction in Beijing pre-schools. None of the pre-schools taught writing, although children were taught how to recognise simple characters. In Hong Kong, there was an attempt to follow the guidelines by using interactive teaching methods and making character learning more meaningful to children. Conversely, instructional approaches to character recognition in Singapore were much more teacher-directed and explicit.

Curricular and Instructional Influences on Early Literacy Attainment

The present study found that, after controlling for age and location, the number of years of teaching writing to children was a significant predictor of Chinese literacy attainment across the three societies. Writing the relatively complex Chinese script may help children better appreciate the importance of spacing and size of the three levels of orthographic structure: the stroke, stroke pattern, and character structure; and teaching children to write may be particularly important for Chinese character recognition. It should be noted that the explicit teaching of literacy skills was common in Hong Kong and Singapore. Explicit instruction has been shown to positively influence reading attainment in English-speaking children (Crain-Thorson & Dale, 1992; Evans, Shaw, & Bell, 2000; Sénéchal, & LeFevre, 2002; Whitehurst et al., 1994).

Some researchers (Whitehurst, 2001; Sénéchal, LeFevre, Thomas & Daley, 1998) have asserted that early reading instruction is necessary because pre-reading skills are not

acquired through typical oral interactions, or through enriched literacy environments. In keeping with this assertion, the present study found that the number of books available in the classroom, which is one of the many indicators of enriched literacy environments, did not significantly contribute to the prediction of Chinese literacy. This suggests that classroom literacy resources might not have a direct impact on Chinese literacy development in early childhood, or perhaps indicates that the variation in the number of books across societies was not large enough for a statistically significant result.

Instructional practices or pedagogical approaches are influenced by teacher background and the current authors have found that years of teaching experience significantly contributed to the prediction of Chinese literacy attainment across the three societies. In Beijing, this might be related to the fact that more experienced teachers appreciated the developmental capabilities of young children to learn to read and consequently encouraged "reading" in kindergartens, whereas other teachers simply followed the guidelines not to teach reading (Li, 2000). In Singapore and Hong Kong, more experienced teachers may have developed more effective instructional practices than their less experienced peers. The influence of these practices may be reflected in children's literacy attainment.

There were three main limitations in this study. First, the initial sample was drawn from middle class families and the number of participants was small. Second, other influences on children's literacy development, such as attitude towards reading, interest in literacy activities and self-confidence were not explored. Finally, the sample was only followed for one year and it was not possible to determine the long term influence of early curriculum and instructional approaches on later Chinese literacy attainment. Nevertheless, this study is a first attempt to examine the influences of pre-school curriculum guidelines and instruction approach on literacy attainment in Beijing, Hong Kong and Singapore. Li and Rao (2000) found parental influences on early literacy attainment, and the present study

ascertained that pre-school curriculum guidelines and classroom facilitation were also important to literacy development in early childhood. These findings enhance our understanding of how educational policies impact on early learning and illustrate the potency of government directives on early literacy development.