Chinese is one of the oldest writing systems in the world. The earliest extant writing examples of Chinese date back to 3,500 years ago. The Chinese language is the most spoken language. Over 1.3 billion people in the world speak Chinese as a first language, mostly in the People’s Republic of China (mainland China), Hong Kong and Taiwan.

These three societies differ in a number of ways that may influence children’s literacy development. Mandarin (Putonghua), the standard spoken Chinese, is the official language in mainland China and Taiwan, whereas Cantonese, a Chinese language spoken in Canton province and its neighbouring areas in Southern China, is mostly used in Hong Kong. Simplified script (e.g. ‘妈’/mom) is used in mainland China, whereas traditional script (e.g. ‘媽’/mom) is used in Hong Kong and Taiwan. Children in mainland China receive formal literacy instruction from age six in primary school, whereas children in Hong Kong start formal literacy learning from age three in kindergarten. In mainland China, pinyin, an alphabetic coding system using 26 Roman letters and four tone marks representing the pronunciation of Chinese characters, is taught in the first grade of primary school to help children learn to read new characters. In Taiwan, Zhuyin Fuhao, a phonetic script used to show the pronunciation of Chinese characters, is used to help children learn to read new characters; in Hong Kong, no phonological coding system is available; visual–verbal memorization (‘look and say method’) is the principal method of teaching and learning new characters.

Orthographic and phonological representations in Chinese fundamental principles

The basic units of written Chinese are characters. One character usually represents a morpheme. There are about 7,000 morphemes in Mandarin but only about 1,200 syllables, so that more than five morphemes share one spoken syllable on average (Shu, 2003). The large number of single-syllable homophones is a salient feature in Chinese.

The basic units of spoken Chinese are syllables. Chinese syllables can be subdivided into an onset and a rime. A further subdivision into phonemes is possible, but not necessary for learning to read Chinese (Anderson and Li, 2005). Chinese is a tonal language, having four lexical tones (in Mandarin Chinese) that differentiate the meanings of morphemes that otherwise have the same syllable forms.
The Chinese writing system is known for its visual complexity. The smallest unit of the Chinese writing system is the stroke. A stroke is a dot or a line written in one continuous movement. Among the 3,500 common characters listed in the Dictionary of Chinese Character Information (1988), the majority have 6–13 strokes. The complex characters have as many as 20 strokes and over (e.g. ‘猫’) and the simplest ones have only one stroke (e.g. ‘一’).

More than 80 per cent of Chinese characters are compound characters. A compound character (e.g. ‘猫’/deng4/stare) consists of two parts: a semantic radical (e.g. ‘目’/eye) which provides some information about meaning, and a phonetic radical (e.g. ‘登’/deng1) which provides some information about pronunciation (Hoosain, 1991). Compound characters have a spatial structure. Left–right and top–down structures are the two major types of character structures. About 59 per cent of characters in primary school textbooks in Hong Kong have left–right structures and 25 per cent of characters have top–bottom structures (Tong and McBride, 2014). A radical usually appears in a specific position in a character. In a left–right structure character, the semantic radical usually appears on the left and the phonetic radical falls on the right, whereas in a top–bottom structure character, the semantic radical usually appears at the top and the phonetic radical usually appears at the bottom. Some radicals or subcomponents appear only in fixed positions. For example, the radical ‘忄’ appears only on the left and ‘八’ appears only on the right of characters.

It should be noted that neither the semantic radical nor the phonetic radical always provide reliable clues of a character’s meaning or sound, respectively. However, the semantic radical is more reliable in providing a meaning cue than is the phonetic radical in providing a sound cue, due to the higher frequencies of semantic radicals than those of phonetic radicals in Chinese. The predictive accuracy of the phonetic radical for communicating sound information is 40 per cent if the lexical tone information is excluded and 25 per cent if it is included (Shu et al., 2003).

Phonological sensitivity is an excellent marker of reading variability in Chinese, as universally found across writing systems (Ziegler et al., 2010). Pinyin knowledge, which reflects both segmental awareness (e.g. syllable, onset-rime) and suprasegmental awareness (lexical tone), was uniquely concurrently associated with Chinese word reading in one study (Siok and Fletcher, 2001) and uniquely predictive of Chinese reading in kindergarteners (Lin et al., 2010) and school-age children (Pan et al., 2011).

Morphological awareness, including sensitivity to homophones/homographs and lexical compounding in Chinese, is particularly important in learning to read Chinese, given that many syllables and words in Chinese are pronounced similarly and learners must be sensitive to differences in meanings. Chinese children’s ability to create new compound words from known morphemes was significantly associated with word reading (McBride-Chang et al., 2011; Wagner, 2003) in one early study and longitudinally predicts word reading (Tong et al., 2009). Children with difficulties in learning to read Chinese often have difficulties in morphological awareness (e.g. Lei et al., 2011; McBride-Chang et al., 2011).

Visual-orthographic knowledge and copying skills are also important for Chinese reading and writing acquisition (Anderson et al., 2013; Tan et al., 2005; Wang et al., 2013; Wang et al., 2015) and impairment (Ho et al., 2004), given the high visual complexity and fairly predictable internal structure of Chinese characters, as described earlier.

**Implications for literacy instruction**

Generally, in Chinese classrooms children are not explicitly taught the formation rules of Chinese characters. Rote memorization and copying practice predominate in the teaching
Chinese-speaking societies

of characters (Wu et al., 1999). Findings of recent research on Chinese literacy provide two major implications for early literacy education in Chinese.

First, young children develop implicit knowledge about the internal structure of Chinese despite lack of direct instruction, which suggests the importance of informal literacy experience in the early years. Children live in worlds surrounded by print; they acquire an understanding of the regularities of the printed world and its relationship with the spoken language before explicit instruction is available (Miller, 2002). Chinese kindergarteners develop knowledge about the formal characteristics of writing quite early. From the age of two, Chinese children can produce distinctions between writing and drawing in conventional ways appreciated by adults, reflecting their cross-domain knowledge about writing (Treiman and Yin, 2011). From the age of three, they can produce important visual distinctions between name writing and non-name single-character writing, indicating their within-domain knowledge about different types of writing (Yin and Treiman, 2013). From the age of four, they typically show sensitivity to the structural, phonetic and positional regularities of Chinese radicals and such sensitivity explained unique variance in Chinese reading and writing one year later after statistically controlling for age and IQ in one study (Yin and McBride, 2015). Five-year-old children enter an important stage of orthographic knowledge development (Zhao and Li, 2014): five-year-olds were found to pay more attention than younger children to the visual form information of Chinese within the print environment (Zhao et al., 2014), and their reading experience was significantly related to the neural specialization of word processing above and beyond the effect of maturation (Li et al., 2013). These findings provide evidence for implicit learning of Chinese in informal settings.

Second, explicit instruction of Chinese literacy skills is significantly related to later literacy outcomes, which suggests the positive contribution of formal literacy instruction after the age of five. Li et al. (2008) followed 88 kindergarteners (mean age five years) in Hong Kong, where formal literacy instruction is commonly provided, and Beijing, where formal literacy instruction is prohibited. They found that Hong Kong children surpassed Beijing children in literacy attainments concurrently and three years later. After controlling for age, site, maternal education and teacher qualification, formal literacy activities significantly contributed to literacy attainment at primary school. Chow et al. (2008) found that an integration of metalinguistic training and parent–child dialogic reading better prepared kindergartners (mean age 5.2 years) in Hong Kong for learning to read than did conducting parent–child dialogic reading alone. Packard et al. (2006) found that first graders in Beijing who received explicit orthographic and morphological instruction performed significantly better after two semesters in their ability to copy characters and to write them from memory than did the control groups. These findings point to the potential positive contribution of direct literacy skill training after the age of five.

Early literacy

Definition of early literacy success

In mainland China, preschool education is not part of the nine-year compulsory education. There are 198,553 kindergartens in mainland China, of which 30 per cent are public and 70 per cent are private (National Educational Development Statistics Bulletin, 2013). In Taiwan, preschool education is provided by both public and private kindergartens or
childcare centres. In Hong Kong, all kindergartens and nursery schools are private. In 2007, 1,001 kindergartens were registered at the Education Bureau of Hong Kong.

The three Chinese-speaking societies all advocate age-appropriate, child-centred, whole-person development in early education, with the goal of achieving balanced development in domains of physical health, language, society, science and arts/aesthetics (Curriculum Development Council of Hong Kong, 2006; Ministry of Education of the People’s Republic of China, 2012; Ministry of Education of Taiwan, 2012).

Early literacy education aims to prepare children to read and write, with an emphasis on fostering children’s ability to construct meaning and express ideas, rather than training decoding skills. For example, in mainland China, the Guidelines for Preschool and Kindergarten Education (Trial Version, 2001) states that the goal of early literacy education is to ‘develop children’s pre-reading and pre-writing skills’. The Guide to 3-to-6-year-old Children’s Learning and Development (2012) provides detailed expectations for children at each developmental stage and offers educational suggestions and strategies for teachers and parents.

Three objectives are outlined for early literacy education: 1) to help children develop interest in reading and form positive reading habits; 2) to enable children to master basic reading comprehension skills; and 3) to foster children’s interest and ability in expressing ideas through pictures or words.

In terms of reading, two- to three-year-olds are expected to develop interest in exploring picture books and writings in their daily environment, recognize the writing of the group they belong to and describe key people or objects in the pictures. Three-to-four-year-olds are expected to understand short stories, describe details in pictures, differentiate between writing and drawing, and know that writings can express a meaning. They are also expected to know the position of books’ names and recognize their own names. Four-to-five-year-olds are expected to know that signs and symbols express certain meanings and serve certain functions and to appreciate the emotions and feelings expressed in stories. Five-to-six-year-olds are expected to be able to tell the major content, plot and theme of the stories they read, appreciate the beauty of language in the stories and create different endings for the stories.

In terms of writing, children are expected to use graphic symbols to express emotion and feeling at age four, use self-invented graphic symbols to indicate space, object or record action at age five and create picture books at age six. Taking correct body gestures when drawing and writing is emphasized from age four.

Policy for multilingual literacy and language learning

Mainland China and Taiwan are monolingual societies. In mainland China, although English is introduced in some kindergartens, there is no mention of English or other foreign language in official policies. In Taiwan, children are directed to ‘know that different cultures have different languages’, but no official policy is available for second or foreign languages.

Hong Kong is a bilingual society where English is spoken as a second language. Cantonese is the mother tongue of most Hong Kong children and is used in preschools. Guide to the Pre-primary Curriculum (2006) states that developing proficiency in the mother tongue is of primary importance; and the goal of learning English is to ensure that children 1) develop interest in English; 2) understand simple everyday conversations; and 3) can sing and recite nursery rhymes in English.
Policy implementation in practice

Current situation

Gaps exist between policy and practice in all three societies. In mainland China, the level of policy implementation differs greatly between developed and underdeveloped regions, and between urban and rural areas. For example, in Beijing, 83 per cent of the 152 kindergartens in Haidian district are public kindergartens administered by the government. Of these, 79 per cent are first-class kindergartens where state policies are observed (Haidian District Preschool Education Three-year Action Plan, 2011–2013). Contrastingly, in rural areas of mainland China, 75 per cent of early childhood institutions are ‘pre-primary classes’ where teachers give long and direct teaching of Chinese characters taken from the Grade 1 syllabus (Zhang and Zhou, 2005). In Hong Kong, explicit teaching of reading and writing is common practice in kindergartens (Li et al., 2012).

Factors influencing the implementation of early literacy policy

Traditional Chinese culture

Confucianism has been deeply rooted in China since 2000 years ago when Emperor Wu Di declared it the official state philosophy. Receiving education was considered a way to master knowledge and moral integrity, both of which are needed for passing imperial exams to gain a government position and uphold family honour. In modern Chinese societies, the examination-oriented educational system and parents’ high expectations for children’s mastery of knowledge and skills are deeply influenced by this tradition. Chinese parents wish their children to receive formal literacy instruction as early as possible in order to gain an advantage in examinations in the primary school.

In addition, traditional Chinese literacy instruction features repeated reading, reciting and copying. Teachers are the authority in the classroom and students obey and follow. For centuries, Chinese children have been learning Chinese through repeatedly reading and reciting classics and copying characters from books using a brush. In the process of copying, children were expected to learn the various components of characters, the correct steps of strokes and the balance of a character within a square space. This long-standing tradition of literacy instruction contradicts the expectation of modern early literacy policies, which advocate child-centredness, fostering interest and not just skill drills and tests. Teachers struggle between requirements of government policies and expectations of exam-oriented parents.

Practical constraints

Two practical constraints impede early literacy policy implementation in China: regional development disparity and insufficient professional training.

Gaps exist between developed and underdeveloped regions in mainland China. According to the Educational Statistics Yearbook of China (2005), the average early childhood education expenditure per child in the rural area was 247 RMB in Fujian province, a coastal developed province, but was only 107 RMB in Shaanxi province, a less developed inland province. In 2005, 48 per cent of early childhood workers had no professional qualifications in urban areas, but the number was 72 per cent in rural areas. In practice, early literacy policies are better implemented in developed regions than in less developed regions.
Insufficient teacher training is a common problem in mainland China, Hong Kong, and Taiwan. Lee and Tseng (2008) reported that in Taiwan some preschool teachers felt cultural tensions and conflicts in implementing developmentally and individually appropriate education. In mainland China and Hong Kong, many kindergarten teachers lack the motivation to make changes because they have little confidence in their ability to implement reform in their classrooms. At the same time, teachers struggle to meet the demands of highly expectant parents (Li et al., 2011; Liu and Feng, 2005).

**Professional training of early years professionals**

Continuous efforts are made in the three societies to improve professional training for kindergarten professionals.

In mainland China, in-service professional training for kindergarten teachers is provided at three levels. At the national level, a nationwide early education professional training programme called ‘China National Training Program for Kindergarten Teachers’ was launched in 2011. The programme consists of three-year training sessions. In each session, 10,000 kindergarten principals and backbone teachers are selected nationwide and trained intensively. At the province level, local education administrations organize continuing education programmes in which local kindergarten teachers can complete a certain number of required courses in a flexible manner within a certain period. At the kindergarten level, the *Kindergarten Feature Training Program* (KFTP) is developed by each kindergarten. KFTP is aimed at improving kindergarten teachers’ professional skills, strengthening each kindergarten’s unique features and building shared identity among kindergarten teachers (Yan, 2015).

In Hong Kong, the Special Education and Kindergarten Education Division of the Education Bureau organizes a wide range of in-service training events such as workshops, seminars and school-based programmes for kindergarten teachers and staff. These training events help teachers improve professional knowledge and skills and keep them updated about the latest developments in education and reform.

In Taiwan, preschool teachers receive professional training from three channels: evening classes at the universities, seminars or workshops organized by private educational institutions and non-profit organizations, and kindergarten exchange programmes between Taiwan and foreign countries (Qin, 2012).

**Principal methods and content areas of literacy instruction**

There is a common trend of incorporating Western pedagogies into Chinese kindergarten practice in the three societies (Lee and Tseng, 2008; Li et al., 2012). Emphasis on integrated teaching and learning is reflected in the official guidelines for early literacy instruction. In mainland China, formal literacy instruction featuring rote memorization and repeated drilling is prohibited in kindergartens (Li and Rao, 2005; Li et al., 2012). Teachers are encouraged to develop children’s pre-reading and pre-writing skills through shared reading and integrated literacy activities. When reading, teachers should draw children’s attention to the conventions of book reading, facilitate children’s comprehension through questions and answers about story plots and relevant pictures, and guide children to appreciate the rhythms and rhymes of the language (Dang, 2011; Zhou, 2009). After reading, children are encouraged to share their thoughts, collaboratively recall the plots of stories with the aid of pictures and re-create endings imaginatively (Zhou, 2009). Writing is integrated into drawing activities and plays. Instead of character copying, games, such as connecting dots
contouring an object, are recommended to foster children’s eye–hand coordination and fine motor skills.

Due to traditional cultural influence and practical constraints discussed earlier, Western pedagogies are adapted in Chinese societies to accommodate local needs. Formal literacy instruction is provided to varying degrees. For example, in Hong Kong, formal literacy instruction is still prevailing in kindergartens (Li et al., 2012). The teacher reads aloud a new character to the whole class, directs children’s attention to the spatial organization and order of its strokes, and asks the class to repeat the pronunciation (Chan et al., 2008; Li and Rao, 2005).

**Provision for children with special educational needs**

In mainland China, an early literacy provision for children with special educational needs is insufficient. Support for three-to-six-year-olds with disabilities and developmental delays is mostly provided by local Associations of Persons with Disabilities (LAPDs) and independent NGOs (Hu and Yang, 2013). Some social education agencies provide kindergarten classes in special education schools. Efforts are being made to provide integrated preschool education for children with special educational needs. For example, 18 kindergartens in Beijing set up inclusive classes in 2007, but the scope of efforts is far from enough to meet the demand of the whole population of children with special educational needs (Hu and Yang, 2013). To date, no standard identification and intervention systems are available in mainland China for kindergarten children with special educational needs. Experienced teachers may detect children with learning problems, but due to lack of knowledge and systematic assessment tools, a large number of at-risk children are being overlooked in mainland China (Liu and Lin, 2009). Moreover, some Chinese parents are reluctant to accept that their children have learning difficulties and miss the optimal time for early intervention.

In Hong Kong, a more mature government-supported system is available to serve young children with special educational needs. In 2005, the Hong Kong government launched the Comprehensive Child Development Service, which integrates resources of the medical and healthcare sectors, educational agencies and social welfare systems to provide early identification and intervention services for children in need of special support in kindergartens. Kindergarten teachers detect children with potential learning needs with the help of Pre-Primary Children’s Development and Behaviour Management – Teacher Resource Kit issued by the Hong Kong government. After detection, teachers refer children to local maternal and child health centres for assessment. Children receive further assessment at Child Assessment Services if needed, and may also be referred to medical facilities for specialized consultation or receive pre-primary training services provided by special childcare centres (Education Bureau, 2008, 2014). In addition to providing identification tips, the Teacher Resource Kit also supplies teachers with various strategies to cope with children’s problems such as word learning difficulties and poor language abilities.

**Variety of literacy materials available**

Across the three societies, children have plenty of opportunities to interact with literacy materials, such as children’s literature, everyday character cards and written works constructed by teachers and children, and they have various types of writing equipment with which to draw, scribble and experiment.

Picture-book reading is a major type of literacy activity in all three places. The picture books typically feature a simple plot, vivid characterization and attractive illustrations. The
language and vocabulary are relevant to children’s daily life experience. Kindergartens usually have book corners where children can easily access a wide variety of picture books. In Li and Rao’s (2005) survey with teachers from four kindergartens in Beijing, 53 per cent of the teachers reported having over 50 books for children in their classrooms and 88 per cent of the teachers reported updating the bookshelves once a month.

The books selected for children represent diverse contents, values and aesthetic features in order to provide children with rich and diversified reading experience (Zhou, 2009). Four genres are typically selected in mainland China: poem/nursery rhyme, narrative, prose and science (Zhou, 2009). The traditional Chinese poems are considered as particularly appropriate for Chinese young children. The reading materials usually have the content of Chinese traditional nursery songs, folklore and traditional Chinese festivals. In Taiwan, similarly, reading materials selected for young children are often related to traditional Chinese culture and Taiwanese conventions. Children also have opportunities to read about foreign mythologies, nursery rhymes and fairy tales (Zhou, 2009).

Children have easy access to writing equipment such as pencils, crayons and paper in the classrooms. In Hong Kong, for example, there are writing areas where children can practise drawing and writing with various writing materials (Chan et al., 2008). Across the three societies, children are encouraged to express ideas and feelings through pictures, symbols and writings.

Major challenges for current and future early literacy provision

There are three major challenges for early literacy provision in China.

First, gaps between policy and practice may exist for a long time. Chinese traditional views on education and practical constraints may continue to influence the implementation of modern early literacy policies. However, narrowing the gap is both possible and promising, for example through promoting professional training for kindergarten teachers, especially those in rural areas and economically disadvantaged regions.

Second, more basic research is needed to understand how young Chinese children develop pre-reading and pre-writing skills. Due to the unique characteristics of the Chinese orthography, findings from research on alphabetic writing systems may not be directly generalizable to Chinese children. As Pine and Yu (2012) pointed out, Chinese literacy experts should spend time in kindergarten classrooms, conduct action research in collaboration with kindergarten teachers and translate theories into strategies that are feasible in practice.

Third, more work is needed to support young children with special educational needs in China. As described earlier, Hong Kong does a better job than mainland China in this regard. In mainland China, the population of children aged between nought and six is 100 million, whereas in Hong Kong, the number is 0.4 million. Take dyslexia, for example: the prevalence rate of this learning disability is 9.7 per cent in Hong Kong (Chan et al., 2007) and 8 per cent in mainland China (Wu et al., 2004). This means that 38,800 young children at risk for dyslexia in Hong Kong can be detected early in kindergarten and provided with timely intervention, but the 8,000,000 at-risk children in mainland China are, regrettably, largely unidentified and unaided.

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