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## **Multiple Literacies: Beliefs and Related Practices among Chinese Kindergarten Teachers**

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**Abstract:** Fifty-five Chinese kindergarten teachers from Shenzhen ( $n = 38$ ) and Hong Kong ( $n = 17$ ) were surveyed to discern their beliefs and reported practices about multiple literacies related to e-learning and knowledge management. Results indicated that: (1) Shenzhen teachers had a better knowledge about multiple literacies and facilitated the development of multiple literacies in their students more than their counterparts from Hong Kong; (2) Teachers' educational attainment and their beliefs did not predict the multiple literacies practice; and (3) after controlling for these variables, child-PC ratio significantly contributed to the variation in multiple literacies practice. Educational implications and challenges associated with teacher education are discussed.

**Keywords:** Multiple Literacies, Early Childhood, Chinese Kindergarten Teachers, Hong Kong, Shenzhen.

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## 1. Introduction

The rapid development of Information and Communication Technology (ICT) has marked our evolution from an industrial-modern society to an information-postmodern society; education has similarly undergone this transformation (UNESCO, 2005). This study aims to examine the influence of this change on early childhood education, focusing on Chinese kindergarten teachers' beliefs and practices related to multiple literacies. Today, the term *multiple literacies* is widely used, encompassing both the new forms of literacy associated with ICT (e.g., media literacy, print literacy, computer literacy, multimedia literacy) and the culturally-specific form of education such as cultural literacy, social literacy, and ecoliteracy (UNESCO, 2005). This all-inclusive concept, however, is relatively new to educators especially to those working in early childhood settings. Although there is a rising awareness of the implications of the changing nature of literacy, the early literacy pedagogies all over the world continue to be based on a performative model, in which emphasis is placed on transmitting narrow literacy concepts and skills (Marsh, 2007). And few empirical studies have been conducted on early childhood teachers' beliefs and practices related to multiple literacies. It is widely believed that the teachers' beliefs and values about educating and learning affect their teaching practices (Fang, 1996; Stipek, Givvin, Salmon, & MacGyvers, 2001; Kagan, 1992; Thompson, 1992), and influencing their beliefs is rather essential in altering their classroom practices. Therefore, in understanding Chinese teachers' beliefs about multiple literacies and the links between their beliefs and practices, this study compared the kindergarten teachers' beliefs and instructional practices in Hong Kong and Shenzhen, two neighboring Chinese cities under the "One Country, Two Systems" principle.

### 1.1. Teacher Beliefs about Literacy

Literacy has been defined as the ability to identify, understand, interpret, create, communicate, and compute using printed and written materials associated with varying contexts (UNESCO, 2005). Conventionally, most language teachers have an understanding of literacy as "a set of tangible skills, particularly the cognitive skills of reading and writing" (UNESCO, 2005, p.149), and this concept has been widely used in numerous literacy studies (Li & Rao, 2000, 2005; Sénéchal & LeFevre, 2002; Shu, 2003; Whitehurst & Fischel, 2000). These beliefs regarding literacy bestow teachers the responsibility of transmitting these literacy skills to students. Chinese teachers in Hong Kong kindergartens provide students with step-by-step instructions, reading drills, copying exercises, and even homework (Li & Rao, 2000, 2005) as part of their literacy instruction. In recent years, however, a new socio-cultural approach to understanding literacy has emerged, combining studies in linguistics, social psychology, anthropology and education. Within the previously mentioned perspective, literacy is conceptualized as a plural set of social practices and as a cultural tool. Based on a comprehensive review of various definitions and conceptualizations of literacy, Fransman (2005) has delineated the following four major perspectives:

1. Literacy as an autonomous set of skills. The most common conceptualization of literacy views reading and writing as the most important cognitive skills acquired through various ways, such as the "phonetic approach" and "reading for meaning" (Street, 2003). The emphasis on meaning pays special attention to phonetics, word recognition, spelling, and vocabulary. These skills provide a mental framework for an individual to think analytically as well as to teach systematically, therefore this conception is associated with direct teaching practices in preschools (Street, 2003).

2. Literacy as applied, practiced, and situated. This view is based on the premise that literacy is a social practice embedded in social settings, and that its value depends on its applicability in specific contexts (Collins & Blot, 2003). It does not agree with the practice of labeling people as illiterate or literate based on autonomous literacy skills, because many who were labeled “illiterate” are found to make significant use of literacy practices in different contexts as demands arise in their everyday lives (Doronila, 1996; Street, 2003). This view of literacy as a social practice rather than an entity is strongly supported by several scholars (Castleton & Marya, 2002; Kist, 2005; Lankshear & Knobel, 2003). The main critique against this perspective, however, is its tendency to stress local contexts while neglecting the impact of events outside the context. A good example would be the effects of globalization (Collins & Blot, 2003).
3. Literacy as a learning process. This view conceptualizes literacy as an active and broad-based learning process, as opposed to literacy as a product of a narrowly defined and focused educational intervention (Fransman, 2005). In this learning process, critical reflection on concrete experience has been advocated by Freire in his various works (Freire, 1993; Freire, 2005). Freire is particularly recognized for his concept of *critical literacy* which involves intensive reading, reflection, and interpretation of texts. Other scholars have advanced the concept of literacy as a learning process which commences from the individual towards the learning communities (Rogoff, 2003; Sergiovanni, 1994).
4. Literacy as text. This view considers any text as discourse requiring critical engagement to discern the embedded meaning (Kress, 1989), as “texts vary by subject and genre, by complexity of the language used and by ideological content, whatever explicit or hidden” (UNESCO, 2005, p.152). Therefore, the basic steps involved in the reading of texts are to understand the subject, genre, language complexity, and ideological content (Barton, 1994). In preparing 21<sup>st</sup> century students, “it is helpful to think about what kind of literacy one needs in order to read things critically,” the ultimate aim of which is to enable students of this century to “interrogate text for purposes of understanding how authors position readers” (Harste, 2003, p. 11). This study explores the Chinese teachers’ understanding of literacy and how their understanding is related to the way they teach children in early childhood.

## **1.2. Multiple Literacies: Extending the Scope of Literacy**

Postmodernists have moved beyond considering literacy as an autonomous area or a set of isolated technical and objective skills. They assume that literacy is determined by the cultural, political, and historical contexts of the community in which it is used (Gee, 1996; Knobel, 1999). Thus, they have advanced the notion of multiple literacies, which involves an individual making sense of the world in different contexts and time through the use of different means (Street, 2003). This view on literacy is shared by various scholars (Bonanno, 2002; Castleton & Marya, 2002; Delgado-Gaitan, 2005; Garcia, 2002; Harste, 2003; Koshewa, 2001; Lankshear & Knobel, 2003; Lee, 2003; Nelson & Zobairi, 1999; Warriner, 2004). Piazza (1999, p. 2), for example, defines multiple literacies as “the complex blend of communicative channels, symbols, forms, and meanings inherent in oral and written language (verbal and nonverbal) as well as the arts – visual arts, music, dance, theatre, and film (including television, video, and technology).” Reading does not only mean mimicking the words, but also covers the interpretation of pictures, signs, symbols and sounds which differ according to each context (Cope & Kalantzis, 2000). Nevertheless, it is not easy to list down all aspects that constitute multiple literacies. The

idea of the “whole mind at work” (Nelson & Zobairi, 1999, p. 82) seems to summarize the intricacies of multiple literacies.

Piazza (1999) lists art, music, dance, theatre and film, among others, as new forms of literacy. An individual becomes literate by understanding the symbol systems in each category, the types and depth of meaning they convey, the modes of communication in which they are transmitted, and the creative ways of using them to express meanings (Nelson & Zobairi, 1999). Moreover, Gallego and Hollingsworth (1992) list community literacy, school literacy, and personal literacy as additional forms. Community literacy refers to the “appreciation, understanding, and/or use of interpretive communicative traditions of culture and community”. School literacy refers to “interpretive and communicative processes needed to adapt socially to school settings, maintain good sense of self and gain a conceptual understanding of school subjects.” Personal literacy refers to “the ways of knowing and beliefs about self and personal communication norms arising from historical or experiential and gender-specific backgrounds” (Gallego & Hollingsworth, 1992, p. 207).

Scholars such as Kist (2005), Bean (2006), and Vila (2005) emphasize the use of non-print media in communication. Kist (2005, p. 2) argues that conveying information through “moving pictures, still photography, dance, theatre, music, and visual art” is as effective as through the print media. For this reason, computer literacy and all other skills involve accessing, evaluating, and using helpful information accessed from the Internet as well as some aspects constituting multiple literacies. This study considered whether Chinese teachers, who have typically advocated a traditional view of literacy, have embraced this new dimension and consequently changed their instructional practices.

### **1.3. Developing Multiple Literacies in Early Childhood**

Strategies for developing multiple literacies in pre-primary children are, similar to the aspects that constitute them, too varied to be listed exhaustively. However, these various ways could be summarized in phrases like “whole mind at work” (Nelson & Zobairi, 1999); “one hundred languages of children” (Edwards et al., 1998), and “the whole brain is involved” (Norman, 2004). Hence, the goal is to engage the whole person in developing multiple literacies in students. In this sense, Donovan (1997) argues that educators should provide children with as many opportunities available to be able to help them express themselves better. To achieve this, teachers should be open to using a variety of symbolic languages, such as literature (e.g., use of picture books), visual arts (e.g., drawings, paintings, shadow plays, models, sketches), writing, movies, music and electronic computer games, even comics (Edwards et al., 1998; Harste, 2003; Jacobs, 2007; Nelson & Zobairi, 1999).

Two main challenges, however, are associated with multiple literacies education. First, multiple literacies require resource-rich environments that provide children with materials for creative artistic work (Harste, 2003; Jacobs, 2007). Yet previous studies have found that Hong Kong kindergartens featured a low level of teachers’ ICT competence, a shortage of hardware and Chinese software, a lack of resources and technical support, and a relatively low parental level of ICT competence (Leung, 2003; Li, 2006). Second, it was found that only teachers who express high interest in using a variety of symbolic languages can successfully teach multiple literacies (Donovan, 1997; Edwards et al., 1998). Are these under-qualified Chinese teachers (Li, 2006) in Hong Kong kindergartens ready for a “paradigm shift” (Kirschenbaum, 2006, p. 2) from the old way of learning using printed materials to the new way of education through multimedia? The researcher considered this question.

Although studies in Western countries demonstrate encouraging results of the positive effects of education in multiple literacies, there seems to be a dearth of research in this area in Chinese societies. Most of the existing studies tend to address literacy in its classical sense—reading and writing (e.g., Chang, 2006; Li, 2000, 2005; and Leong, Tan, Cheng & Hau, 2005). Soundy and Qiu (2006) were the first to address visual arts in the study of literacy comparing kindergarteners in China and the United States. In Singapore, a shift from viewing literacy as functional or as pertaining to linguistic accuracy has been reflected in the curriculum since 1991. Four domains of language use have been introduced, including “communication and language development, thinking skills, learning how to learn, and language and culture” (Cheah, 1996, p. 2). In Taiwan, it is believed that technology literacy begins in kindergarten (Lai, 2002). In fact, technology education has been incorporated into the curriculum of teacher colleges (Lee et al., 2000). The aim is to introduce kindergarteners to the concept of Living Technology—the acquisition of knowledge related to technology and engineering useful in their present and future lives — to foster children’s all around development (Lai, 2002). In Hong Kong, Tang (1993) studied the use of graphic literacy in secondary school students. However, very few studies have been conducted on multiple literacies in the area of early childhood education in Chinese context. This study compared kindergarten teachers’ views and their corresponding practices in two neighboring Chinese cities, Hong Kong and Shenzhen. The following four questions guided the investigation of this study:

1. What are Chinese kindergarten teachers’ beliefs about multiple literacies?
2. How do Chinese kindergarten teachers apply the concept of multiple literacies in their teaching practice?
3. What factors facilitate or hinder Chinese kindergarten teachers’ multiple literacy education?
4. What are the similarities and distinctions between the kindergarten teachers in Hong Kong and Shenzhen in terms of their beliefs and practices related to multiple literacies?

## **2. Method**

### **2.1. Participants**

Four kindergartens serving young children from middle-class families were purposively selected in Hong Kong and Shenzhen. All the teachers of the two Hong Kong kindergartens ( $n = 17$ ) and two Shenzhen kindergartens ( $n = 38$ ) and their students participated in this study. Most of the teachers were experienced early childhood educators and their teaching experience ranged from 1 – 20 years. In Hong Kong, 35.1% of the teachers have 1-5 years of teaching experience, 37.8% have 6-10 years, 5.4% have 11-15 years, and 10.8% have 16-20 years. The corresponding figures for Shenzhen teachers were 37.5%, 25%, 18.8%, and 12.5%. A small population of teachers in Hong Kong (6.25%) and Shenzhen (5.41%) have less than one year teaching experience. Their educational attainment ranged from the completion of junior secondary school to the procurement of undergraduate degrees. In the Hong Kong sample, majority (56.25%) of the participants had recently completed Year 10 when this study was conducted, while 31.25% of sample had completed Year 12/13. An undergraduate degree was obtained by only 12.5% of the participants. On the other hand, majority of Shenzhen participants (70.27%) had received tertiary (normal school) education, and 24.32% of the sample population had attained an undergraduate degree. As shown in Table 1, the teachers in Shenzhen had significantly more years of education than their counterparts in Hong Kong,

$F = 4.51$ ,  $p < .05$ . This difference is not caused by a sampling bias but is rather a reflection of the societal differences in teacher qualifications between Hong Kong and Shenzhen (Li, 2006). In fact, there were no differences in the years of teaching experience between the teachers from the two Chinese cities,  $F = .01$ ,  $p > .05$ .

## **2.2. Instrument**

A 14-item questionnaire was developed to investigate participants' understanding of multiple literacies and their related teaching practices. As shown in the Appendix, the questionnaire consisted of two parts: Part 1 (items 1 – 6) comprised questions that served to evaluate the general views of participants on multiple literacies, while items in Part 2 (items 7 – 14) were specifically designed to determine the extent to which participants apply multiple literacies into practice. Some items in the questionnaire followed a 7-point Likert Scale format, whereas in the other items, choices on the rating scale differed on qualitative dimensions. The last two items were open-ended questions and were included with the intention of taking a deeper look at the participants' experiences in promoting multiple literacies in schools and their opinions for the future development of this area.

## **2.3. Procedure**

Each participating teacher received a copy of the questionnaire mentioned and a cover letter explaining the purpose of the study and its instructions by mail. The accomplished questionnaires were then returned to the researcher in sealed envelopes. The response rate was 100%. The participants were documented using a video camera in their respective classrooms for a full morning session. Before starting the formal coding of the video data, the two assistants recoded one case selected from each participating kindergarten. The percent agreement on the four cases was a satisfactory 93.8%, indicating an excellent inter-rater reliability.

## **3. Results**

### **3.1. Chinese Teachers' Beliefs about Multiple Literacies**

Results show that the concept of multiple literacies is relatively new to both Hong Kong and Shenzhen teachers. Only 14 out of 55 participants reported that they have heard of the term multiple literacies, constituting only 25.5% of all the teachers who were surveyed. As shown in Table 1, there were no significant differences between Hong Kong and Shenzhen teachers regarding their beliefs about the value of multiple literacies, print literacy, non-print literacy, and ICT literacy. However, Shenzhen teachers had a significantly broader sense of the capacities of multiple literacies and what they constitute ( $M = 17.16$ ,  $SD = 4.43$ ) than their Hong Kong counterparts ( $M = 14.29$ ,  $SD = 5.28$ ),  $F = 4.36$ ,  $p < .05$ .

### **3.2. Chinese Teachers' Reported Multiple Literacy Practice**

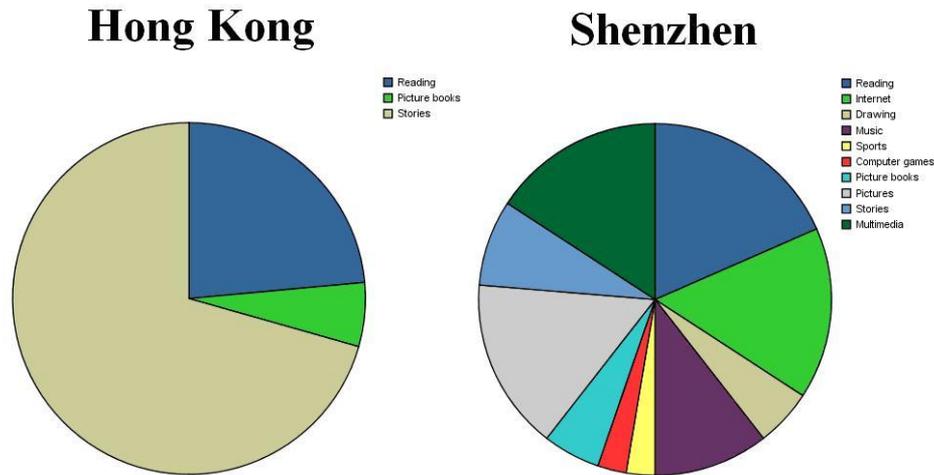
It was found that most Hong Kong (93.8%) and Shenzhen (88.2%) teachers employed both print and non-print media in their daily teaching. They performed similar educational practices, balancing print and non-print literacies. The Hong Kong kindergarten teachers averagely used 17.29 out of the 24 resources listed on the questionnaire in their daily teaching activities, whereas the Shenzhen teachers used 18.32 of them. However, Shenzhen teachers reported a significantly higher usage of assessment with multiple literacies than their Hong Kong counterparts,  $F = 11.99$ ,  $p < .001$ .

**Table 1: Chinese Teachers' Beliefs and Practices Regarding Multiple Literacies: Mean Scores and Group Differences**

	Hong Kong ( <i>n</i> =17)		Shenzhen ( <i>n</i> = 38)		F Value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Teacher's educational attainment	2.56	.73	2.19	.52	4.51*
Years of teaching experience	2.94	1.18	2.97	1.26	.009
Languages used in teaching	1.38	1.03	3.11	.46	73.38***
Child-PC Ratio	14.0	6.33	7.23	11.07	4.43*
Class size	26.44	4.66	30.2	8.17	2.94
List of Multiple Literacies	14.29	5.28	17.16	4.43	4.36*
Value of Multiple Literacies	5.94	1.03	6.00	.99	.04
Value of Print Literacy	5.88	.99	5.53	1.50	.80
Value of Non-print Literacy	5.06	.75	5.21	1.32	.20
Value of IT Literacy	5.12	.86	5.53	1.27	1.46
Balanced practice between Print and Non-print literacies	5.44	.81	6.03	1.06	3.90
Media used for literacy learning	17.29	4.27	18.32	5.06	.53
Assessment with Multiple Literacies	4.76	.83	5.83	1.13	11.99***
Assessment with print literacy	5.06	1.03	4.46	1.61	1.98

*Note.* \*.  $P < .05$ . \*\*.  $P < .005$ . \*\*\*  $P < .001$ .

About 97.2% and 82.4% of the kindergarten teachers in Shenzhen and Hong Kong stated that they had computers in their classrooms, respectively. Although there were relatively more students in a class (30 students) in Shenzhen kindergartens, each computer was only shared by seven children, whereas in Hong Kong 14 children might need to share one computer. Thus, Shenzhen teachers reported a significantly lower child-PC ratio (7: 1 vs. 14: 1),  $F = 4.43, p < .05$ . There were no significant differences between Shenzhen and Hong Kong in terms of class size and teacher's teaching experience. However, it is worthwhile to point out that Shenzhen teachers used Putonghua (National Common Language) in teaching their students. In comparison, Hong Kong teachers used Cantonese (the dialect for Canton and some southern China areas).



**Figure 1. Distributions of the Most Frequently Used Teaching Materials by the Hong Kong and Shenzhen Teachers.**

Figure 1 shows the array of teaching materials most frequently utilized by teachers in Hong Kong and Shenzhen. Hong Kong teachers reported using stories, other reading material, and picture books. In addition to the previously mentioned media, Shenzhen teachers used a variety of materials including the Internet, drawing, music, sports, computer games, and pictures. Both the range of teaching materials most frequently utilized and least frequently utilized by Shenzhen teachers have greater variation than those of the participants in Hong Kong (please refer to Figure 1). For example, although tools such as reading, drawing, music, picture books, pictures, and stories were often adopted by both teachers in Hong Kong and Shenzhen, participants from Shenzhen frequently used the Internet, sports, computer games, numeracy, TV, and multimedia as teaching media as well. The data suggest that teachers in Shenzhen are more capable in incorporating a heterogeneous set of class materials in teaching. This also echoes the finding that Shenzhen teachers have a broader sense of the capacities of multiple literacies than their Hong Kong counterparts. However, an interesting phenomenon found in Shenzhen was the fact that the most frequently used teaching materials, namely, the Internet, sports, computer games, TV, and multimedia, also appeared in the list of least frequently used materials. Such finding did not surface in the Hong Kong sample. This result indicates that the set of teaching materials used by the Shenzhen teachers might in fact depend on the teacher's preference and varies from teacher to teacher.

Regarding the difficulties in developing multiple literacies, 36.8% of the Hong Kong teachers regarded "lack of time" as the major obstacle, followed by "limited ability of young children" (26.3%), "lack of resources" (15.8%), "insufficient teacher training" (15.8%) and others (5.3%). In addition, 30.5% of the Hong Kong teachers thought it was essential to have more teachers' training to enhance their knowledge of multiple literacies and to utilize multiple media and information technology effectively in their teaching. Meanwhile, many Shenzhen teachers regarded "insufficient teacher training" (36.4%) and "lack of resources" (31.8%) as the major obstacles, followed by "limited ability of young children" (18.2%), "lack of a clear, systematic, and scientific curriculum guide" (9.1%), and others (4.6%). In summary, the common barriers mentioned by both samples were: insufficient teacher training, lack of resources, and limited abilities of young children. The major solution suggested by the participants was to provide more teachers'

training to equip them with necessary knowledge and skills for developing multiple literacies in young children.

**3.3. Contributors to Multiple Literacies Practices**

Intercorrelations between teachers’ beliefs and reported practices are shown in Table 2. Significant correlations were found between teacher beliefs regarding the value of multiple literacies, print literacy, and IT literacy and their balanced literacy practices. A negative correlation was found between the teacher’s belief about the value of non-print literacy and the practice of assessment with print literacy.

**Table 2: Spearman Correlation between Chinese Teachers’ Beliefs and Practices Regarding Multiple Literacies (N = 55)**

	Q7	Q8	Q12	Q13
List of Multiple Literacies	.09	.25	.16	.01
Value of Multiple Literacies	.40**	.03	.12	.18
Value of Print Literacy	.37*	.15	.09	.11
Value of Non-print Literacy	.25	.01	.06	-.30*
Value of IT Literacy	.38*	.06	.01	.24

Note. (1) \*. Correlation is significant at the .05 level (2-tailed).

(2) \*\*. Correlation is significant at the .01 level (2-tailed).

(3) Q7: Balanced practice between Print and Non-print literacies; Q8: Media used for literacy learning; Q12: Assessment with Multiple Literacies; Q13: Assessment with print literacy.

To determine the relative contribution of teacher qualifications and beliefs to their multiple literacies practices, the researchers conducted a set of hierarchical multiple regression analyses with the calculated *Multiple Literacies Practice Index* — which is a sum of Q7 (balanced practice between print and non-print literacies), Q8 (media used for literacy learning), and Q12 (assessment with multiple literacies) raw scores as the dependent variable. Results are shown in Table 3. The significant regression models indicated that: (1) teachers’ educational attainment and their beliefs do not predict the multiple literacies practice; but (2) child-PC ratio significantly contributed to the prediction of multiple literacies practice, after controlling for teacher’s education, qualifications, and beliefs

**Table 3: Hierarchical Regression Analysis Predicting Teachers Multiple Literacies Practice (N = 55)**

Variable	Beta	R <sup>2</sup>	ΔR <sup>2</sup>	F
1. Teacher’s educational attainment	.12	.02	--	.55
2. Value of multiple literacies	.23	.07	.05	.19
3. Value of IT literacy	.09	.08	.01	.29
4. Child-PC ratio	-.37	.19	.11	4.76*

Note. \*. P < .05. \*\*. P < .005. \*\*\* P < .001.

#### 4. Discussion

Thus far, this is the first investigation ever made on Chinese teachers' understandings and teaching practices regarding multiple literacies. This study set out to examine the survey data with an attempt to ascertain the similarities and distinctions between two Chinese cities. It was found that Shenzhen teachers have better knowledge about multiple literacies and practices than their counterparts from Hong Kong. In this section, we will discuss these findings and their implications for early childhood education and teacher education.

##### 4.1. Chinese Teachers' Beliefs about Multiple Literacies

The present study found that few of the Chinese teachers (25%) knew the term *multiple literacies* although some reported similar teaching practices in their classrooms. This finding implies that the concept of multiple literacies is relatively new to Chinese kindergarten teachers. The concept's inclusion and promotion in teacher education programs in Hong Kong and Shenzhen is advisable. However, difficulties and resistance in advocating this postmodern concept are also expected.

First, the rapidly expanding English term *literacy* does not have a literal equivalent in Chinese. In China, literacy is officially translated into the Chinese word *shao mang*, literally translated as "eradicating illiteracy." Anthropologists translated it into *xue wen hua*, meaning "learning to be culturalized" (Li, 2000). Developmental psychologists defined it in a conventional perspective which means "being able to read Chinese characters" (Li & Rao, 2000, 2005). The dominant view is that literacy is an autonomous set of skills, and that the benchmark of being literate in Chinese in Beijing, Hong Kong, and Taiwan is set at knowing between 2,500 and 3,500 characters (Butcher, 1995; Taylor, 1999; Li, 2000). This conceptualization favors the implementation of a teacher-directed structured program designed to teach a set of literacy skills, as well as the employment of direct teaching methods such as instruction, drill, practice, and rote learning of written Chinese characters (Li & Rao, 2005). Thus, redefinition and reconceptualization of Chinese literacy is urgently needed if the promotion of the concept of multiple literacies and the development of appropriate literacy practices in early childhood settings are desired.

##### 4.2. Societal Differences in Teachers' Beliefs and Practices

In the list of multiple literacies, this study found significant societal differences in the list of multiple literacies and in the variety of teaching materials/ tools used by teachers from Hong Kong and Shenzhen. Teachers from Hong Kong seemed to be conservative, confining their understanding of multiple literacies to the traditional definition of being able to read and write. A highly significant percentage of the sample population (94.12%) valued the importance of printed media. Although quite a large percentage (88.24%) highly regarded the aid of computers and the Internet in teaching, neither computer games nor the Internet was chosen to be in the top three most frequently used teaching materials. Findings show the lack of computer resources in Hong Kong classrooms. On average, 14 children had to share one computer in Hong Kong; thus, it is a major obstacle in promoting multiple literacies in this city's kindergartens. Furthermore, even though most Hong Kong teachers believed that examining children's ability to express themselves freely through the use of different media is an effective way of multiple literacy assessment, they appeared to be less open and positive about this method of evaluation than the Shenzhen teachers. Instead, more participants from Hong Kong even preferred assessing students' acquisition of multiple literacies by utilizing printed media and written format. This suggests that the teachers in Shenzhen have a relatively broader concept of multiple literacies and a more open attitude towards teaching multiple

literacies in kindergartens.

These societal differences in teachers' beliefs and practices could be associated with macro- and micro-system distinctions (language environment, curriculum guidelines, classroom settings, and existing resources). Shenzhen is a monolingual society. Children in this city are immersed in a community where Putonghua is the spoken language and simplified Chinese characters are used in written form. Like other cities in mainland China, the formal teaching of literacy skills is prohibited in early childhood settings such that the parents and teachers do not expect this form of teaching to be part of the curriculum (Li & Rao, 2000). The young children typically receive informal literacy experiences through various kinds of media, and Shenzhen teachers are more qualified in teaching multiple literacies than Hong-Kong teachers (Li & Rao, 2005). In contrast, Hong Kong features a trilingual environment. This therefore poses difficulties for children to acquire Chinese literacy and makes both parents and teachers value the role of print literacy and literacy acquisition through direct teaching in their own homes and in the preschool stage. Although informal literacy practices are promoted in teacher education courses, it seems that teachers are most influenced by established practices in the field. The kind of teacher-directed, formal teaching of literacy skills remains a prominent part of the curriculum used (see Li & Rao, 2005, for classroom observations). Shenzhen is one of the most developed cities in Mainland China and is adjacent to Hong Kong. While Hong Kong kindergartens repeatedly reported a lack of PCs, updated hardware as well as good educational software (Leung, 2003), IT-literate teachers, resources and technical support, and parental level of ICT competence (Li, 2006), the Shenzhen kindergartens had significantly more computers and lower child-PC ratio when this study was conducted. Thus, the Shenzhen teachers might not feel constrained using PCs and other non-print materials to teach young children in the classroom. This might be associated with the reason why child-PC ratio was found to be the significant contributor to multiple literacies practice in the present study, a topic which will be thoroughly discussed in the following section.

### **4.3. Empowering Teacher to Teach Multiple Literacies**

The present study found no link between teachers' beliefs and practices about multiple literacies. Instead, child-PC ratio was found to be the significant contributor to the multiple literacies practice, after controlling for teacher's education, qualifications, and beliefs. This finding is inconsistent with the widely-received principle that teachers' beliefs and values about teaching and learning affect their teaching practices (Fang, 1996; Kagan, 1992; Stipek et al., 2001; Thompson, 1992).

Why was there a gap between the Chinese teachers' beliefs and practices? This might be mainly attributed to the constraints in Chinese kindergartens. First, developing multiple literacies in early childhood require both the use of resources and the teachers' openness in utilizing a variety of symbolic languages or teaching materials. The present study, however, found that most of the Chinese kindergartens were facing the difficulties of insufficient teacher training, lack of resources, and limited abilities of the young children. These difficulties were also reported in previous studies conducted in Hong Kong preschools (Leung, 2003; Li, 2006). By comparing the resources available in the Hong Kong and Shenzhen kindergartens, the present study shows that the choice of teaching aids of kindergarten teachers is confined to the resources available, despite the fact that they believed some teaching materials which they have not used before were important to the development of multiple literacies in children. Such limitation imposes a substantial risk in ensuring preschool students receive a justifiable quality education. Thus, it is crucial to enrich the current resources by providing a greater variety of teaching materials for teachers to choose from. For instance, improvement through the

provision of the Internet and other computer resources in Hong Kong preschool classrooms is necessary, as computer and information literacies are of crucial importance in restructuring education for an advanced knowledge management and fast-paced e-learning.

Enhancing teachers' understanding of multiple literacies while equipping them with relevant teaching skills is as essential as the improvement of their capabilities in teaching multiple literacies in kindergartens. In the present study, most of the Chinese teachers suggested providing more teachers' training for their empowerment in developing multiple literacies and e-learning in kindergartens. This finding is consistent with Hollingsworth and Gallego's (2004) study about professional development on multiple literacies that teachers could respect and develop both school sanctioned and out-of-school literacies after training. The study found that teachers become increasingly confident when the concept of multiple literacies is put into practice. In this sense, the goal for promoting multiple literacies begins at the pre-service level and continues through the development of teachers in Chinese societies.

The present study emphasizes the lack of formal training with regard to the concepts and teaching of multiple literacies. In order to work toward the changing attitudes and practices of these teachers on multiple literacies education, professional development should be attained through three key factors that will contribute to this change. First, it is necessary for them to obtain a greater understanding of what multiple literacies constitute, shaping their mindset to a broader and more objective way of developing attitudes and beliefs that are in line with good teaching practices. Second, teachers benefit from being shown a specific series of instructional strategies, which should be developed in collaboration with teacher educators, necessary to implement these new concepts about multiple literacies. Lastly, on-going school-based support and mentoring during follow-up activities is essential for maintaining changes in attitudes and practices. Nevertheless, further studies are needed to understand why there is a gap between Chinese teachers' beliefs and practices with regard to multiple literacies in kindergartens.

#### **4.4. Limitations of the Current Study**

Three main limitations were encountered in this study. First, the initial sample was drawn from two kindergartens of each Chinese city, thus resulting in the relatively small number of participants. Second, the findings were mainly based on a questionnaire, while the actual teaching practices of teachers were observed by the researchers to verify the findings. Finally, the attainment of multiple literacies of kindergarteners in Hong Kong and Shenzhen was not examined (and there is no such an instrument in Chinese society that is capable of the examination), therefore disabling the researchers from determining the effects of the different teaching practices of Hong Kong and Shenzhen.

Nevertheless, this study is one of the first to investigate this particular subject and there is still room for improvement. Although the term *multiple literacies* has never been clearly defined and there is debate among researchers, this pioneering study could aid future research on this topic. A handful of scholars point out that the teachers' professional development in teaching multiple literacies is vital for children's acquisition of multiple literacies (see Edwards et al., 1998; Harste, 2003; Hollingsworth & Gallego, 2004; Nelson & Zobairi, 1999). Moreover, this study will provide some insights into early childhood education of multiple literacies and will have important implications for knowledge management and e-learning in the early years.

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## **Appendix**

### Survey on Teachers' Beliefs and Practices about Multiple Literacies

#### *Part I. Beliefs about multiple literacies*

1. Do you know the term multiple literacies? What is it?
2. In the following list, check as much as possible what you think is part of multiple literacies.
3. How important do you consider multiple literacies to be for children? (7-point Likert-Scale)
4. How important do you consider print literacy to be for children? (7-point Likert-Scale)
5. How important do you consider non-print literacy to be for children? (7-point Likert-Scale)
6. How important do you consider IT literacy to be for children? (7-point Likert-Scale)

#### *Part II. Practices related to multiple literacies*

7. I try to strike a balance in teaching print literacy (e.g. writing) and non-print literacy in daily teaching.
8. I have used the following medias in teaching young children's literacy (check as much as possible what you have used).
9. I assess young children with non-print literacy.
10. I assess young children with print literacy.

#### *Part III. Difficulties and Suggestions*

13. What are the difficulties that you have encountered in the process of developing multiple literacies in children?
14. Based on your experiences, what should be done to foster multiple literacies in children? (Provide your views in the space below).