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**PRACTICAL PEDAGOGIES ON THE MANDARIN-ENGLISH BILINGUAL
FIRST LANGUAGE ACQUISITION OF CHINESE PRESCHOOL
CHILDREN IN EARLY CHILDHOOD FAMILY EDUCATION**

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SUMMARY

With the adoption of the methodology of systematic literature review, this study strives to answer the research question as what pedagogies are appropriate for parents in order to cultivate Mandarin-English Bilingualism for Chinese preschool children in early childhood family education.

Upon the exploration of the fundamental early bilingualism theories, three major findings are identified. In the first place, different pedagogies may be designed for different age periods of young children. Meanwhile, the balanced frequency and quality of language input of two languages are necessary for the successful cultivation of early bilingualism. Lastly, pedagogies would be family specific due to different family patterns.

In the review of the linguistic characteristics of Mandarin and English, three helpful implications are discovered. First, there is a close correlation in phonological awareness between the two languages. Second, there are few similarities in terms of the orthography between them. Third, similarities and differences exist in these two languages from the grammatical aspect.

When reviewing the current kindergarten pedagogies, more beneficial findings are recognised to support this study. First, the One-Person-One-Language principle could be adopted upon modifications. Second, it would be practical to schedule different time periods of a day to practice different languages. Third, visual assistance could be helpful for vocabulary development. Finally, collaborative working is important for young children as it helps to develop the social aspect of learning and using different languages.

By combining the findings and the Chinese context, this study suggested four practical pedagogies: The Age Stage Specific Strategy, the One Guardian One Language Rule, the Interactive Bilingual Word Wall as well as the Paired Bilingual Learning in the Community. Through the theoretical evaluation, evidence is found from the work of Piaget and Inhelder (1969) to support the practicability of four proposed pedagogies regardless of possible limitations.

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1. INTRODUCTION

English language study in China, started since the eighteenth century, officially became one of the key subjects in Chinese compulsory education upon the reform and opening-up in the late 1970s (Hu and Adamson, 2012). Since the beginning of the new millennium, early English literacy has gradually become a part of educational outcomes in kindergarten education which is not mandatory in China (Yu and Ruan, 2012). Meanwhile, with the trend of globalisation, the importance of English language has been further recognised among Chinese people and the bilingual cultivation of Chinese Mandarin and English of preschool children has become an essential consideration for young Chinese parents. Chinese Mandarin, the official language of China, is considered as the mother tongue of most Chinese people while some of them speak additional regional dialects most of which share similarities with Mandarin.

As the awareness of bilingual proficiency occurred to the minds of most Chinese people, the concerns and doubts around the cultivation of Mandarin-English bilingualism of preschool children are also increasing among young Chinese parents. Some Chinese parents worry about the possible negative impacts, such as accented speech, affecting between two languages (Lin and Johnson, 2010). Some others fear that the early bilingualism may even hamper the normal language development of both languages in children (Lin and Johnson, 2016). These concerns may result from the scarcity of research studies on the bilingual first language acquisition in early childhood family education in the Chinese context.

Before addressing the issue, some definitions regarding the research scale, context or subject should be clarified. Regarding the notion of 'Bilingual First Language Acquisition (BFLA)' (p. 2) in this study, it refers to the simultaneous acquisition of two languages both as the first language upon birth (De Houwer, 2009). Specifically, the acquisition consists of oracy (listening and speaking) and literacy (reading and writing) of two languages (Baker, 2001). Meanwhile, the notion of early childhood family education here refers to the pre-school education lead by the parents, and grandparents if necessary, with the home

as the primary environment and the proper extension to the local community. Moreover, as the minimum age of entering primary Grade One in China is the age of six, this study of Chinese preschool bilingual children focuses on the Chinese children who are under the age of six and learn Mandarin and English simultaneously upon birth.

Consistently, despite the debates around the early bilingual acquisition, most previous research works have agreed with the general practicability of early bilingualism. Vaid and Hall's (1991) study reveals that there are no evident differences on the neurological processing between bilinguals and monolinguals. While some parents may worry that learning two languages at the same time could be a great burden for young children and may also cause deficiencies of both languages, Cunningham-Andersson and Andersson (2004) suggest that young children are able to differentiate two languages upon sufficient input after a stage of confusion. Meanwhile, De Houwer's (2009) study clarifies that there is no evidence showing that bilingual children develop language skills slower than monolingual children. Additionally, Baetens Beardsmore (1986) points out that bilingualism does not affect the personality development and the intellectual capacities of children but pedagogic, social and psychological factors in the process of cultivation do. As concluded by the psychologist Baker (2000), children have the innate capability of handling two languages and switching 'effortlessly' (p. 26) between those two languages in different contexts while bilingualism has nothing to do with language disorders or delay. And the earlier exposure to two languages, the easier the children can complete their acquisition (Halsband, 2006). Therefore, with these consistent psychological findings as the theoretical foundation, this study focuses on the area of early bilingualism of young children in family education in the context of Chinese society.

When referring to the Chinese context, to begin the discussion, the characteristics of the Chinese family are discussed for better understanding. Previously, due to the one-child policy implemented in the late 1970s, most Chinese families, particularly urban families, became the nuclear ones with just one child (Liu, 2006). Since the release of the two-child policy in 2015, currently

the size of Chinese family transfers to the structure of one couple with one or two children. The size of a family, however, may be associated with the child-rearing values of parents. Xiao's (2013) study finds that in the large-size family parents tend to emphasise the conformity of children while parents in the small-size families may value autonomy. Another unique characteristic in most Chinese families, is the co-residence of three generations with the co-existence of parenting and grand-parenting. In China, the voluntary preschool kindergarten education is for children from age three to six while most children under the age of three are usually taken care of by their family all day long. Due to employment or migration of the parents, grandparents, as more reliable sources than babysitters, play essential roles in caregiving for the young children while conflicts may exist regarding child-rearing values of different generations (Settles et al., 2013). As a result, Chinese grandparents partly or even fully engage in child-rearing in around 80 percent of urban Chinese families (Lin, 2017). Moreover, the gender discourse is evident in Chinese families. According to Liang (2017), Chinese mothers, most of whom are also employed, are still the primary caregivers while most Chinese fathers perform as the secondary parents. He also points out that with consistent social changes contemporary Chinese fathers participate more in child caregiving while traditionally a father is the authority and the head of a Chinese family.

Regarding this study, previously there are studies addressing relevant topics that help form the background knowledge of this study. Specifically, there are comparative studies on the linguistic characteristics of Mandarin and English (for example, Gelman and Tardif, 1998; O'Seaghdha et al., 2010; Tsao, 1982), pedagogical studies of kindergarten immersion bilingual education (for example, Alanís et al., 2015) and reviews on the English teaching pedagogies in China (for example, Lin and Johnson, 2016). While there are also empirical studies on early bilingualism in other social contexts, few studies research the early family education for bilingual children in the Chinese context. To fill this gap, as the potential contribution to the bilingual research community, this study reviews current available literature and addresses the research question: what pedagogies are appropriate for parents in order to cultivate Mandarin-

English bilingualism for Chinese preschool children in early childhood family education. To be specific, this study looks at the linguistic characteristics of Mandarin and English alongside the characteristics of contemporary Chinese families and seeks to examine which pedagogies would be appropriate with regard to the early cultivation of bilingualism. It will evaluate the practicality of suggested pedagogies and make suggestions for Chinese parents specifically with preschool children.

In the following chapters, first, the research design of this study is discussed with a rationale for the methodology and the theoretical framework; second, there is a review on early bilingualism studies to help understand how bilingual proficiency could be achieved; third, the review on linguistic characteristics of Mandarin and English is conducted to address the importance of the attention to the language difference in bilingual acquisition; fourth, the bilingual pedagogies from the literature are reviewed and discussed to screen those potential ones which are appropriate for the Chinese context; finally, appropriate pedagogies for early BFLA in Chinese family education are proposed and evaluated via theories.

2. RESEARCH DESIGN

In this study, the ontological assumption is constructivism. As with the recognition that ‘multiple realities are constructed by individuals’ (Waring, 2012: 16), this study aims to systematically investigate literature to find out what pedagogies are appropriate for parents in order to cultivate Mandarin-English bilingualism for Chinese preschool children in early childhood family education. The epistemological assumption of this study is interpretivism accordingly. Since knowledge should be developed via interpretation (Waring, 2012), this study is based on available theoretical or empirical works to come up with appropriate pedagogies for early bilingual cultivation for Chinese preschool children in family education setting. In accordance with the constructivism ontology and interpretivism epistemology, this study adopts the literature-based methodology, carrying out a systematic literature review to address the research question. While the systematic literature review aims ‘to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question’ (Cochrane definition, 2013, quoted in Piper, 2013: 2), it would be a suitable choice for this study to look into different aspects of literature to suggest practical pedagogies.

In this study, the systematic literature review is conducted within journal databases and library catalogues covering education, psychology, sociology and general language study domains. Moreover, while this study selects the often-cited and scholarly-recognised books or theoretical papers published in the 20th and the 21st centuries, the inclusion criteria of empirical research articles are: first, articles that can provide fundamental knowledge or empirical evidence for the research topic in this study from the perspective of the empirical bilingual studies, linguistic characteristics of Mandarin and English, or current practical pedagogies are reviewed; second, articles that were published in the 21st century following peer review are selected; third, both qualitative and quantitative works are included; finally, articles are based on research undertaken worldwide with a preference for the Chinese context. Regarding

the process of searching for potential articles or books, 'bilingual children', 'early childhood bilingualism' and 'bilingual acquisition' are used as key words to search for theoretical and empirical works on general early bilingualism; 'linguistic characteristic, Mandarin, English' together with 'language difference, Mandarin, English' are the key words of searching for linguistic characteristics of the two languages; 'bilingual, pedagogies, early childhood', 'bilingual, pedagogies, kindergarten' as well as 'bilingual, pedagogies, Mandarin, English' are put into searching for current early bilingual pedagogies and specific ones for the Chinese context; 'Chinese family, structure' and 'Chinese family, characteristic' are used to understand the unique characteristics of the Chinese family to screen appropriate pedagogies for the Chinese context.

The underpinned theoretical framework, which is also the psychological foundation for evaluating the proposed pedagogies in this study, is the stages of cognitive development of children proposed by Jean Piaget. According to Piaget and Inhelder (1969), the first eighteen months in the life of an infant is the 'sensori-motor period' (p. 3) in which every acquisition of the infant is the response to external stimuli, followed by a period in which a toddler starts to develop the 'semiotic or symbolic function' (p. 51) starting from a year and a half to two years old. In their description of the appearance of semiotic function, first there are deferred imitation and 'symbolic play' (p. 54), then the phase of graphic drawing and formation of mental images shows up, and finally the nascent language articulation appears. With regard to the acquisition of language, they further describe that upon a phase of 'spontaneous vocalization' (p. 85) by imitation the one-word sentences appear at the end of the sensori-motor period, and then longer sentences could be produced starting approximately from the age of two years old. Meanwhile, as the next stage of 'concrete operations of thought and interpersonal relations' (Piaget and Inhelder, 1969: 93) does not appear until the age of seven or eight, the proposed period that are in accordance with this study is mainly the stage of semiotic and symbolic function. By briefly referring to Piaget's psychological work, the age period from one and a half to seven is a critical stage for the language acquisition of young children. The final proposed pedagogies in this

study will also be evaluated by this theoretical framework. With the fundamental psychological evidence, this theoretical framework would serve as the theoretical criteria to examine whether the suggested pedagogies are consistent with the principles of psychological development in children.

As for the ethical issues, all information collected in this study is obtained legally from the resources of the library of the University of Glasgow. And the reporting and presentation of all information is responsibly accurate. While this study is based on a systematic literature review, no ethical problems occur to hazard any person or organisation during the research.

Regarding the limitations of this study, it might be better to further conduct experiments or observations to evaluate the practicability of proposed pedagogies from the empirical perspective. However, due to limited time frame primary data is not possible to collect to support this study. While findings from systematic literature review may be theoretically appropriate, proposed pedagogies may be a good guidance for further empirical works on this area in the research community.

3. EARLY BILINGUALISM STUDIES

For the past several decades, psychologists and linguists have been researching the rationale behind the acquisition of bilingualism by young children with creative hypotheses and fruitful empirical findings. In this chapter, the literature review is carried out regarding the theoretical hypotheses on bilingualism in children, the advantages of early bilingualism for children, balanced bilingual development, factors that affect the quality of language acquisition, the aims of balanced early bilingual development, and previous empirical research on Mandarin-English bilinguals.

3.1 Theoretical Research on Bilingual Acquisition in Children

The research on the language acquisition of bilingual children became active in the 20th century. Initially, Cummins (1976) and Toukomaa and Skutnabb-Kangas (1977) propose the Thresholds Theory, hypothesising that there may be an essential threshold level of language competence for a bilingual child to attain so as to avoid the negative cognitive consequences and to acquire the potential positive benefits of bilingualism. Although this initial theory is not fully developed, it looks into both the positive and negative sides of early bilingualism. Then, Cummins (1978) proposes the evolved Thresholds Theory as the Developmental Interdependence hypothesis. He states that the more developed the first language the easier the second language could be acquired because the second language competence partly relies on the degree of competence of the first language in children. While the first evolution focuses on the inter-relations of two languages, in the following work, the internal balance of bilingualism is emphasised. Cummins (1979: 230) proposes the further evolved three thresholds: 'Addictive Bilingualism' as native-like competence in both languages, 'Dominant Bilingualism' referring to the competence in just one of the two languages, and 'Semilingualism' which indicates the deficiency in both languages. This further evolved theory specifies the possible situations in bilingual development and starts to look into the

rationale behind these types of bilingualism. However, Cummins warns that these terms might not be used strictly as linguistic ones since the process of bilingual acquisition is not only cognitive but also educational and environmental.

Another significant hypothesis is the Iceberg Analogy proposed as the common underlying bilingualism proficiency model by Cummins (1980, 1981). According to this model, while two languages are viewed differently as two separate icebergs in the outward discourses, these two icebergs are actually merged and operate via the same central processing system underneath the surface. This model is not limited to just two 'icebergs' and it might refer to more because Cummins believes that human beings have the capacity to store two or more languages and the development of language skills in one of the languages help develop the whole cognitive system. In addition to the extension to multilingualism, this model connects language acquisition to educational aspects as Cummins advises that information processing skills and educational achievement could be developed via either one or two languages while the deficiency of one or both languages could negatively affect cognitive functioning and academic performance. The later research works of Paradis and Genesee (1996) and Paradis (2001) further explain Cummins's hypothesis as interdependence exists between two phonological systems of bilingual children, or as the 'cross-linguistic influence' termed by Catalano et al. (2018: 3).

With the beginning of the new millennium, more research works were undertaken to diversify the bilingual research community. The psychologist Collin Baker (2000: 41-42) concludes two types of bilingualism in children: the 'simultaneous bilingualism' which refers to the exposure to two languages from birth, and the 'consecutive, sequential or successive bilingualism' indicating the situation of learning one language at home and another in the wider community. Accordingly, the notion of simultaneous bilingualism is in line with the research topic in this study. He also comments that the age of three is generally viewed as the borderline between these two types of bilingualism. Baker's research points out a new path on bilingualism study as he started to attend to the importance of the timing of the start of bilingual acquisition.

Besides, contemporary studies also look into the processing of bilingual acquisition in young children. De Houwer (2009) emphasises the importance of language experience as the essential input for the success of bilingual attainment in children. She explains that babies need at least a year to hear comprehensive sounds of a language to learn how those sounds are used to build blocks of words and sentences and this 'tuned in' (p. 28) could happen as early as the time of six months old. According to her detailed outline of bilingual development in the first five years of life, by the end of the first year babies are able to understand the words and phrases of two languages; then they start to utter bilingual words in the second year though their babbling starts from the second half of the first year in their life; and finally, their language production takes off from the third year. De Houwer's idea is not only the derivative of Piaget's psychological theory but also consistent with Baker's viewpoint which suggests the early bilingual acquisition before the age of three.

Apart from the rationale, some recent research works focus on the success of bilingual cultivation on young children as well. Cunningham-Andersson and Andersson (2004) stress that the most important factor in raising bilingual children is the motivation. They suggest an early start with continuous bilingual input which demands efforts from both parents and children. In addition to the bilingual input, Kohnert (2010) argues that multiple meaningful opportunities for interpersonal interaction are also essential for bilingual development. More factors that influence bilingual acquisition are discussed in the later section of this chapter.

3.2 Advantages of Early Bilingualism for Children

Previous research works have laid a solid theoretical foundation for early bilingualism acquisition. Despite the possibility of early bilingualism, past research has reached an agreement that young children can benefit from the process of bilingual acquisition not only linguistically but also cognitively and socially.

Primarily, early bilingualism benefits the children from the linguistic perspective. Lenneberg's (1967) work, in the field of human biology, finds greater plasticity of the nervous centres relevant to the speech in younger children while the gradual loss of language learning ability with aging is observed as well. Consistently, Baetens Beardsmore (1986) reveals that the earlier the bilingual acquisition is undertaken the easier a child could achieve native-like pronunciation and intonation patterns of both languages. Galambos and Hakuta (1988) also point out that with the development of bilingualism, the metalinguistic awareness is developing and may be beneficial to further foreign language study. Specifically, while the phonological awareness is a kind of critical ability to identify and manipulate the sound units of oral language (Wagner et al., 1994), Edwards' (2015) study concludes that the exposure to more than one language may increase the phonological awareness and the structure of one language could affect the formation of the phonological awareness. A series of research studies have also discovered the cross-language transfer of phonological awareness among Mandarin-English bilinguals (Chen et al., 2010; Gottardo et al., 2001; Marinova-Todd et al., 2010; Yan et al., 2005).

Furthermore, early bilingualism contributes to the cognitive development of young children. Cummins (1976) suggests three dimensions to the cognitive advantages of bilingualism: first, bilinguals may have a wider and diversified range of language and cultural experience than monolinguals; second, bilinguals may be more flexible in comparative thinking owing to the language switching mechanism; finally, the conscious and subconscious comparison between two languages in different contexts may help bilinguals develop particular metalinguistic skills. The later study of Kharkhurin (2015) finds that bilingualism not only facilitates the creative potential of children but also helps develop the cognitive mechanisms which are the foundation of creative thinking.

Lastly, early bilingualism brings about advantages from a social point of view. Ben-Zeev's (1977) empirical research reveals that bilingualism could help children promote communicative sensitivity, allowing them to constantly monitor the ongoing conversation to use the appropriate language. This sensitivity may draw their attention to the social nature specifically regarding

the persons they interact with in certain contexts. Baker (2000) has also discussed the detailed relations from this perspective. He suggests that being bilingual or multilingual may affect individual identity, interpersonal networks, education, employment, marriage and ways of thinking. In line with communicative sensitivity, bilinguals may have advantages concerning communication, character, culture, curriculum and personal career.

3.3 Balanced Bilingualism

When referring to the notion of bilingualism, some may interpret it as the equal competence of two languages. However, previous research has coined the term 'balanced bilingualism' (Baker, 2001:7) which is different from the former idea as it questions the possibility of equal competence in two languages. In this section, the discussions on balanced bilingual development and its aims are carried out from the review of former research.

Initially, some research works have focused on the functional nature of bilingual languages. García (1986) clarifies that bilinguals may use different languages to reflect different culture since usually a language is associated with a certain culture. This is important to children since the 'language and social repertoire' (p. 105) is originated from the childhood years. Therefore, in addition to individual linguistic ability, he explains that the environmental context is essential for bilingual development as it could be crucial for the linguistic and metalinguistic information, the rule of social language use, the linguistic and sociolinguistic rules for code-switching as well as the prestige of languages and motivation of learning each language.

Agreeably, research on language dominance rejects the idea of equal competence in bilingualism. While language dominance describes the relative proficiency in two languages by the same person (Sheng et al., 2014), research on cross-linguistic comparisons of the proficiency of bilinguals finds that there is always one language being more proficient, or dominant, than the other one (Gathercole and Thomas, 2009; Kohnert, 2008). Brebner et al. (2016) also

suggest that language dominance in an individual may vary over time with the changes of social contexts, and the patterns of acquisition and the amount of language exposure may lead to a change in language dominance in children.

Moreover, there is literature discussing the practicability of the balance of bilingualism. Baker (2000) directly points out that it is rare for anyone to be equally competent in both the oracy and literacy skills of two languages as bilingual proficiency does not stay constant over time. Hence the idea of balanced bilingualism may refer to 'reasonable' or 'appropriate' competence with variations in both languages (Baker, 2001: 7). And it would be an 'unrealistic ambition' (Cunningham-Andersson and Andersson, 2004: 16) to achieve equal competence in both languages.

Regarding the aims of balanced bilingualism, various conceptions are proposed in current literature from different perspectives. Bachman's (1990) model suggests language competence as the aim of language acquisition. Specifically, the model is composed of organisational competence, which consists of grammatical competence and textual competence, and pragmatic competence, which includes illocutionary competence and sociolinguistic competence. A different view is proposed by Lanza (1997) which regards language differentiation and the avoidance of language mixing as the aims of bilingual competence since young bilingual learners are in the process of completing complicated tasks such as the construction of linguistic subsystems like phonology, morphology, syntax and semantics. More recently, Edwards (2015) emphasises biliteracy as the key aim of balanced bilingualism and clarifies that bilingualism is more than the sum of two languages but also connects to the cultural awareness of each language.

3.4 Factors that Affect the Quality of Bilingual Acquisition

While the definition of balanced bilingual development is discussed, what contributes to the success of bilingual acquisition in children is another key area to look into. Current literature suggests that the process of language input,

environmental factors and patterns of family education are associated with the quality of bilingual acquisition.

In the first place, the process of language input is critical to the success of bilingual acquisition. Schachter (1986) suggests three key dimensions regarding the process of language input as the actual linguistic forms used with the learners, the manner of presentation to learners, and the metalinguistic information provided to the learners which consists of responses like 'corrections' and 'contributors' (p. 216). De Houwer (2009) supplements that the input frequency of each language the learners hear could be crucial to whether a child can become fluent in both languages or not.

Another essential aspect is the patterns of family education for young bilinguals. Baker (2000: 37) suggests that each bilingual family has its own 'patterns of intrafamilial language' in a certain cultural context. Baker (2001) further proposes four specific aspects parents should consider before deciding to raise their children bilingually: the languages each parent can speak, the language(s) each parent speak to the children, the languages other family members speak to the child, and the language(s) the child may experience in the local community. These suggestions clearly lay out the general patterns in bilingual family education. Vermeer (2001) also points out that the words most frequently used in parental speech to children are acquired earliest while depth of vocabulary as the understanding of the meanings of words is closely related to frequency of input. Cunningham-Andersson and Andersson (2004) agree with both ideas and supplement that parents should try to spend equal amounts of time on each language and give sufficient motivation for young children with rational patterns of family bilingual education. The patterns of family education may be unique in each bilingual family and demands flexibility because children may tend to develop more on the majority language which is widely accepted in community and the other one may be at risk as the minority language. Additionally, Kohnert's (2010) study summarises that the socioeconomic status, parental educational background and individual cognitive aptitude could also affect the quality of acquisition. Empirical evidence shows that the consistency of the language choice patterns of parents is closely

related to the use of appropriate languages by children in different contexts (Qiu and Winsler, 2017).

Lastly, there are some other environmental factors that are in association with the quality of bilingual acquisition. Halsband (2006) points out that besides the age and manner of acquisition of the learner, environmental factors could also influence the neural representation of language learners. One specific factor is the attitudes of people outside the bilingual family. Romaine (1995) points out that the attitudes of extended family and friends can impact the bilingual development of children. Cunningham-Andersson and Andersson (2004) supplement that since most people would still regard foreign languages as too difficult for young children to learn, it may be inevitable to hear criticism or unsolicited advice on the cultivation of bilingualism in young children when in the outside community. De Houwer (2009) expresses a similar viewpoint that comments from outsiders could somehow influence the bilingual decisions of parents as almost all parents strive for the very best for their children.

3.5 Previous Empirical Research on Mandarin-English Bilingual Children

Apart from the general theoretical research on bilingualism, there are also abundant empirical works on Mandarin-English bilingual children in recent years. Generally, the findings in previous empirical works are supportive of the theoretical studies, particularly from the perspectives of pronunciation and phonological development as well as vocabulary and reading skills.

The area of pronunciation and phonological development in Chinese bilingual children has been explored in different empirical research works. Lin and Johnson's (2010) study on bilingual preschool children in an English-immersion programme in Taiwan finds that bilingual 5-year-olds do not show delayed development in the phonological systems of both Mandarin and English, and that the phonological patterns of monolingual and bilingual children are similar rather than different. Similar results are obtained in Marinova-Todd et al.'s (2010) comparative study among preschool Mandarin monolinguals, English

monolinguals and Mandarin-English bilinguals. In this study, an advantage on the phonological awareness skills among Mandarin-English bilingual preschool children is observed as they outperform the monolingual counterparts in tests. Meanwhile, Wewalaarachchi et al. (2017) conclude in their comparative study that there are no differences between the responses to correct pronunciations of bilingual and monolingual toddlers, and that bilingual children are more sensitive to vowel variation than consonant and tone variation.

Moreover, studies on the development of vocabulary and reading skills in Chinese bilingual children provide practical suggestions for the research community. Lam et al. (2015), upon their experimental comparative study in kindergartens in Ontario, Canada, find that children in the Mandarin-English bilingual program show significantly better character reading skills and achieve higher vocabulary scores than the monolingual group. Lin and Johnson's (2016) empirical comparative study with comparable picture-naming and picture identification tasks in Taiwan reveals that Mandarin-English preschool bilinguals have substantial proportions of both 'translation equivalents and singlets' (p. 184) of expressive and receptive vocabulary in both languages, indicating that these bilingual children not only master the word pairs of equivalent meanings in two languages but also know how to individually use the vocabulary in each language.

3.6 Summary

From the literature review, we can see the rationale and advantages of early bilingual acquisition. Besides, the definition and access to balanced bilingualism in children is discussed and clarified, and the empirical research on Mandarin-English bilinguals is explored to reconfirm the theoretical assumptions. In general, the discussions in this chapter serve as the theoretical basis of the pedagogic proposals in later chapters. Particularly, three dimensions of implications for practical pedagogies appear from the literature review in this chapter. First, pedagogies may be different for different age periods of preschool children, including the period of language perception from

birth to a year and a half, the period of imitation from a year and a half to three years old, and the stage of rapid language development from three to six years old. Second, since the balanced frequency and quality of the language input of two languages are essential for the successful development of young bilinguals, they should be taken into consideration in pedagogies. Finally, pedagogies may be family-specific because the family patterns and parental language abilities vary especially in different social or cultural contexts. Former research works have laid the theoretical and empirical foundation on early bilingualism as the guidance for making specific recommendations regarding pedagogy.

4. LINGUISTIC CHARACTERISTICS OF MANDARIN AND ENGLISH

For over a century, linguists have been undertaking research on various types of languages across the world. Specifically, there are fruitful comparative studies on the linguistic characteristics between Mandarin - a Sino-Tibetan language, and English - an Indo-European one. In this chapter, discussions on the findings from the literature will be carried out from phonological, orthographic and grammatical perspectives.

4.1 Phonological Characteristics

The characteristics of Mandarin and English have been explored in previous comparative research works. In general, as the two languages belong to two distinct language families, there are phonological differences between Mandarin and English. Despite the differences, correlations are found in the two languages through the empirical research.

In the first place, the linguistic pitch, or lexical tone is the essential difference in spoken representation between Mandarin and English. Quam and Creel (2017) explain that Mandarin is a tone language in which pitch contours are used to distinguish lexical differences while English is an intonation language in which a rising pattern may indicate a question for confirmation. Specifically, Mandarin, in which the tone is both 'suprasegmental and phonemic' (Chung and Jarmulowicz, 2017: 998), has four lexical tones covering the domain of the Chinese syllabic system *Pinyin*, including high flat as Tone One, rising as Tone Two, falling-rising as Tone Three and falling as Tone Four (Quam and Creel, 2017). For English, the stress, as the principal prosodic feature, is a relative discourse to determine which syllable receives more stress than the other(s) in two or more contiguous syllables (Chung and Jarmulowicz, 2017). That is to say, Mandarin tone plays a similar role as stress does in English: the acoustic lexical purpose.

In previous developmental phonology studies, the phonological representation of children is believed to include both individual sounds and prosodic patterns (Pierrehumbert, 2003; Vihman and Croft, 2007). Chung et al.'s (2017) empirical study shows developing results on the linkage of linguistic sounds in word reading in both languages. According to their research, phonological awareness links the acoustic sounds to printed words while the learning of sound-letter mapping in children helps with the mutual decoding of sounds and words. Meanwhile, Mandarin tone and English stress, as the prosodic awareness, may be essential to reading acquisition as individuals could use prosodic patterns as a 'segmentation cue' (p. 1408) to sound out words. Additionally, the notion of rise time discrimination, which refers to the perception of speech rhythm and stress (Leong et al., 2011), has been suggested as a crucial predictor of word reading in English (Corriveau et al., 2007; Goswami et al., 2010, 2011, 2013) and Mandarin (Wang et al., 2012). According to these studies, the rise time discrimination may trigger the awareness of linguistic prosody and phonemes to further facilitate reading acquisition. This process may seem more direct in English since Mandarin has a unique orthographic system in which the decoding is not operated between printed words and sounds, but among Chinese characters, the syllabic system *Pinyin* and sounds. Specific orthographic differences are discussed in the next section.

Another evident difference between Mandarin and English is the general format of syllables. While there could be more than one syllable for an English word, there is usually only one syllable for a Chinese character. Moreover, the syllable boundaries could be ambiguous in English at times. While the stressed syllables in English appear at fairly regular intervals without direct mapping onto stem morphemes, non-stressed syllables are shortened to accommodate the pattern (Ladefoged, 2001). In contrast, such ambiguity rarely exists in Mandarin. The Chinese syllabic system *Pinyin* is a 'Romanized phonemic coding system' (Yeong and Liow, 2012:113) for transcribing Chinese characters to spoken discourse. As suggested by Wang et al. (2005), generally each Mandarin syllable consists of two parts: the onset and the rime. While the onset is usually a single consonant and the rime is a vowel(s), there are occasions that a syllable

consists of only a vowel. Although there are around 400 different syllables in Chinese *Pinyin*, with the existence of tones there are over 1300 tone syllables in spoken Mandarin (Taylor and Taylor, 1995).

Although vowels are compulsory in the syllables of both Mandarin and English, the positions of consonants vary in the syllabic discourses of the two languages. While English and Mandarin have almost the same number of consonants, the syllabic structure in English is much more complex because of the greater frequency and variety of consonant clusters in word-initial and word-final positions (Yeong and Liow, 2012). On the contrary, Mandarin has a large number of open syllables, no consonant clusters, and only two possible final consonants (Hua, 2002). Lin and Johnson (2010) supplement that within the total 22 consonants in Chinese *Pinyin*, 21 are permitted in the initial position except /ŋ/ while the possible consonants in the final position can only be /n/ and /ŋ/. As a result, the word boundaries and syllabic order in Mandarin are more salient than the ones in English (O'Seaghdha et al., 2010).

Despite the noticeable phonological differences, previous studies have also discovered the correlation between Mandarin and English. In the theoretical lens, the Speech Learning Model proposed by Flege (1995), which is in line with Cummins' (1980, 1981) Iceberg Analogy, explains that two languages of a bilingual coexist in a common phonological space with a natural interaction especially at the allophonic level. Besides, Ziegler and Goswami (2005) suggest that the syllable awareness is generally developed by the age of three or four and the awareness of onset and rime is developed by the age of four or five while the phoneme awareness usually cannot be achieved until the literacy development in children. From the empirical perspective, Wang et al's (2005) research on Chinese immigrant children in America shows that the onset and rime matching skills in Mandarin *Pinyin* is significantly associated with the ones in English syllables. They also provide two possible interpretations of this relationship. For one thing, as Mandarin *Pinyin* is an alphabetic phonetic system, such similarity helps improve the ability of English pseudo-word reading. For another, the general auditory processing skill may be the underlying factor to link the phonological skills in two languages. Regarding the capability to

differentiate the language sounds in the coexisting phonological space, Quam and Creel (2017) provide an empirical idea that the lexical memory may help a bilingual pull the Mandarin-sounding novel words into the Mandarin cluster and pull the English-sounding novel words to the English one without referring to top-down context to cue certain phonetic properties.

4.2 Orthographic Characteristics

From the phonological perspective, differences and correlation co-exist in Mandarin and English. Nonetheless, the orthographic differences between these two languages could be the most obvious visual contrast. Previous literature provides both the theoretical and empirical evidence to identify the representations of orthographic differences between them.

Generally speaking, the fundamental difference is that English is an alphabetic language but Mandarin is not. For English, letters in words represent phonemes so the phonological skill may be central for English oracy and literacy. However, unlike alphabetic English, Mandarin graphemes map onto syllabic morphemes instead of individual phonemes (DeFrancis, 1989; Mattingly, 1992). Specifically, Wang et al. (2005) introduce that strokes, as the basic units in Mandarin orthography, form radical components while a compound Mandarin character usually consists of two or more radical components. Another feature of Mandarin orthography they point out is that the configuration of radical components in characters normally follows a top-bottom or left-right structure. Therefore, learning Mandarin characters seems more difficult owing to the large amount of non-phonetic and visually complex symbols (Packard, 1990). As concluded by Marinova-Todd et al. (2010), Mandarin has a morphographic writing system in which characters are the basic symbols in written form, and each Mandarin character represents both a syllable and a morpheme.

While Mandarin characters seem less phonemically dependent than English words, debates have been conducted on the nature of Mandarin orthography. Among those claims, one recent argument that Mandarin orthography is a

meaning-based script is supported by some researchers (for example, McBride-Chang et al., 2003; Shu et al., 2006). Following this idea, morphological awareness may predict early Chinese character recognition rather than phonological awareness. Nonetheless, in earlier research works, Cheng (1992) argues that phonological awareness still plays an essential role in Mandarin character reading since Mandarin orthography is indeed a speech-based script in which each character matches a *Pinyin* pronunciation. Leong (1986) suggests that more than 80 percent of Mandarin characters are composed by semantic-phonetic radical components which not only indicate the meaning but also provide phonetic clues for the pronunciation of characters.

In empirical studies, the representations of orthographic differences between Mandarin and English have also been researched. Particularly, the neurological evidence helps prove the representations of orthographic differences in human brains. Tan et al.'s (2001, 2003) neuroimaging study on Chinese-English bilinguals shows that Mandarin character reading results in more activation in the brain areas that are in control of the coordination and integration of visual-spatial analyses in comparison with English word reading. Similarly, Liu and Perfetti's (2003) comparative study on Chinese-English bilinguals by using the Event-Related-Potential (ERP) techniques displays more detailed supportive evidence. They discover that Mandarin character reading requires both left and right occipital activation in brains while English word reading only activates the left one. In their explanation, the right occipital areas are mainly responsible for discriminating the two-dimensional spatial relationships of radicals. Therefore, it is unlikely that there is an orthographic correlation between these two languages across two different writing systems.

4.3 Grammatical Characteristics

Formal studies in Mandarin and English have also discovered grammatical differences. Particularly, the representations of grammatical differences involve semantic and syntactic contrasts.

Primarily, Mandarin differs from English in basic semantic style. Generally, there are a number of empirical studies discussing semantic differences across these two languages, including words referring to number-marking patterns (Lucy, 1992), spatial prepositions (Bowerman, 1996), object and substance terms (Imai and Gentner, 1997) as well as adjectives (Waxman et al., 1997). Specifically, one major semantic difference identified from the literature is the word forms and tense. In English, the forms of verbs change according to subjects and the tense while in Mandarin the same verb form is used for first, second and third persons, and the tense is conveyed by the time adverbs (Li and Thompson, 1981; Yip and Don, 2004). Padilla et al. (2013) suggest that the grammatical rules in Mandarin and English are not parallel since grammar rules like verb tenses, subject verb-object placement, adjective-noun placement are central for learning English while conjugations, declensions and other inflections are not evident in Mandarin. Qi et al. (2006) also point out that the personal pronoun forms in Mandarin are less complex than the ones in English. In contrast to the complex English pronominal paradigm, no 'gender, animacy or case contrasts' (p. 306) are identified in Mandarin person pronoun forms while the possessive case and plurality in Mandarin are semantically encoded by certain morphemes attached to the stem without making any changes in the word forms. As concluded by Gelman and Tardif (1998), the absence of morphosyntactic cues in Mandarin, such as articles, plurality and tense, indicates that expression of generics is less overt in Mandarin than English.

Apart from the semantic contrast, there are syntactic differences existing between Mandarin and English. While Mandarin and English share the same basic sentence pattern of subject-verb-object (SVO), other syntactic discourses vary. For instance, adverbial modifications must precede the verb in Mandarin but can either precede or follow the verb in English (Lam et al., 2015). Tsao (1982) describes the differences in preferred structures of two languages as that English would use a single adverb, a prepositional phrase, or a relative clause with a possessive relative pronoun while Mandarin adopts the 'the double nominative construction' (p. 106) without using relative clauses. He also suggests two specific types of features from the functional sentence

perspective. The first one is that ‘clefting and pseudo-clefting’ (p. 103), as the expression of a main clause and a subordinate clause in a complex sentence, are more frequently used in written discourse than spontaneous conversation in English but are evident in both written and spoken Mandarin. The other one is that ‘passivization’ (p.104), which indicates the object of the verb as the topic of a sentence by using the passive voice, is the most important syntactic function in English while this ‘topicalization’ (p.104) is easier to achieve in Mandarin by simply moving the object to the front of a sentence without making any changes in the form of the verb. In addition to the theoretical findings, Lam et al.’s (2015) study reveals that the syntactic awareness of Mandarin is significantly associated with English word reading and the syntactic awareness of English is also significantly correlated with Mandarin receptive vocabulary, though cautions should be addressed as the results may be associated with phonological or lexical awareness.

4.4 Summary

In this chapter, linguistic differences and similarities between Mandarin and English are discussed from the phonological, orthographical and grammatical perspectives. To summarise, three key findings may have beneficial implications for the proposal of practical pedagogies. First, the phonological awareness of Mandarin tone is correlated with English intonation. Second, there are few similarities between Mandarin orthography and the English one. Finally, Mandarin shares similar basic syntactic structures with English despite some minor differences in semantic styles. While the early bilingual acquisition focuses on learning the basis of both languages, these findings could be helpful for suggesting appropriate strategies to guide the young bilinguals.

5. BILINGUAL PEDAGOGIES FOR EARLY CHILDHOOD EDUCATION

Despite the lack of specific family bilingual pedagogies on Mandarin-English in current literature, there are plenty of research works researching on theoretical or empirical bilingual pedagogies for early childhood education. In this chapter, discussions on the general bilingual typology and empirical practical pedagogies are carried out to assess the implications for early bilingual education in the Chinese context.

5.1 Bilingual Typology

Previous research works have been working on rational early bilingual pedagogies that are in accordance with the characteristics of child development. While some examine macroscopic strategies as general strategic guidance across different social contexts, others study microscopic pedagogies as specific suggestions on certain linguistic sections of bilingual acquisition.

From the macroscopic point of view, some famous bilingual typologies are proposed to enlighten the research community. Among these typologies, the most famous one is the One-Parent-One-Language proposed by Ronjat (1913) who successfully cultivated his son to become a German-French bilingual. Specifically, the One-Parent-One-Language refers to the idea that each parent exclusively speaks a separate language to the child in the family. Later empirical findings further advocate this principle. Research has found that two-year-old bilinguals show the ability to switch between two languages to choose the right one according to the person they speak to and the situational context regardless of the variations in individual abilities (De Houwer, 1995; Deuchar and Quay, 1999; Lanza, 1997; Nicoladis, 1998; Nicoladis and Genesee, 1997; Quay, 1994). Meanwhile, Genesee et al.'s (1996) study witnesses the appropriate language matching among two-year-old bilinguals who can quickly and accurately accommodate to the language use of strangers.

Nonetheless, there are questions about the practicality of the One-Parent-One-Language principle. Cunningham-Andersson and Andersson (2004) suggest that if one of the parents does not spend an equal amount of time with the child as the other one does, the child may not receive enough input in that language while the prerequisite of this principle is that both parents should be able to understand both two languages. De Houwer (2009) also discovers this problem and advises to upgrade this principle to the One-Person-One-Language to fit families with different situations.

To sum up the existing strategies, the six-fold typology for early bilingualism organised by Romaine (1995: 183-185) may be explicit for instruction. According to her summary, the first typology is the One-Parent-One-Language; the second one is the 'One language-one environment'; the third one is the 'Non-dominant home language without community support' which indicates that both parents speak the same minority language to the child who learns the majority language in the community; the fourth one is the 'Double non-dominant home language without community support' which means that parents speak two different minority languages to the child who learns the majority language in the community; the fifth one is the 'Non-native parents' indicating that one of the parents speaks the majority language as a non-native speaker; the last one is the 'Mixed languages' for bilingual parents in a bilingual community.

From the microscopic perspective, research works are also active in searching for applicable pedagogies. Particularly, Qi et al. (2006: 304) introduce two essential early bilingual pedagogies: the 'bottom-up or analytic' and the 'top-down or synthetic' approaches. To be specific, when using the bottom-up approach, learners are guided to work on linguistic details like a single syllable, and once these small items are mastered longer utterances can be expected. In contrast, when applying the top-down approach, learners are taught to speak whole words, phrases or longer chunks of speech while the correctness of the details are expected to be achieved upon practice. Likewise, with regard to lexical development, Qi et al.'s (2006) study also suggests two key routes: one way is followed by referential words which are mapped onto

‘mental representations of prototypical referents’ (p. 304); and the other one is guided by context-bound and social-pragmatic words for detailed event representations.

Apart from the formal typologies, researchers provide further suggestions for early bilingual acquisition as well. As language learning would be a time-consuming process, Cunningham-Andersson and Andersson (2004) advise the parents to adjust to setbacks to encourage the child to be consistent and to use as many available resources as they can. For the second advice, they explain that it would be helpful for children to speak the non-dominant language with someone else especially with other bilingual kids, and to travel to the regions where the non-dominant language is spoken to help the child improve the cultural awareness if possible. Meanwhile, in line with the discussed factors that affect bilingual acquisition, De Houwer (2007) points out the importance of parental language input patterns which should be well-planned in advance for young children according to the family situation. Besides, De Houwer (2009) also refers to the emotion in parental language, suggesting that parents should avoid expressing negative emotions in only one language as this could cause the child to dislike that language.

5.2 Practical Pedagogies

While theoretical works on general bilingual typologies have been undertaken by many researchers, practical pedagogies for early bilingualism have been discussed via various empirical studies as well. Whether from the macroscopic or microscopic perspective, the proposed pedagogies are enlightening for the research community.

In the macroscopic lens, a noteworthy approach often used in the kindergartens in China is the immersion method. As introduced by Yu and Ruan (2012), usually there are two models of English immersion in China to create real environments for early bilingual acquisition. The first model is to schedule different time periods of each day when English or Mandarin is the only

permitted language for communication across all activities. The other one is to periodically switch the instructional language between Mandarin and English in specific contexts or classes. While this immersion method can create an authentic and natural language environment for children to learn both languages, they remind us that this approach sets high requirements on the language competence and pedagogical techniques of the educators so as to provide effective guidance for children.

From the microscopic perspective, researchers also summarise useful suggestions for guiding early bilingual acquisition. Since bilingual acquisition may inevitably cross two different cultures, Levine (1981) suggests that educators show hospitality to the cultural diversity by joining in the activities, monitoring the devices of different learners and supporting with comprehension. Similarly, Baker (2000) advises bilingual teachers to conduct purposeful codeswitching, to prepare bilingual worksheets or handouts to instruct modules in two languages and to integrate fluent speakers and learners. Furthermore, Alanís et al. (2015) introduce two effective kindergarten pedagogies, one of which is the interactive word wall for vocabulary development. According to their description, effective word walls can scaffold the bilingual acquisition of young learners by providing visual clues or visual reference, supporting the acquisition of high-frequency words, offering children a private place to display words that are important to them and encouraging independence in reading and writing through vocabulary building. The other pedagogy they suggest is the paired activities with dual languages which allows children to develop new languages via practice in a social context. Similar to the second suggestion, Liu et al. (2017) advise to use dialogic tasks for effective integration of the language and the content. In this idea, via 'pair and share' (p. 387) children can acquire not only the certain expressions of two languages but also the knowledge in different areas.

5.3 Summary

The literature review in this chapter is conducted from general bilingual typologies and practical pedagogies. In general, four supportive findings from the literature may be helpful for developing practical pedagogies in the Chinese context. First, the One-Person-One-Language, as the most frequently practiced principle, could be a potential strategy for the Chinese context upon proper modifications. Second, the strategy of scheduling different time periods of a day for practicing different languages could be considered as well. Third, visual assistance may help with bilingual lexical development. Finally, the importance of paired learning in the social context is emphasised by both theoretical and empirical literature. By referring to these findings, culturally appropriate pedagogies for Chinese bilingual children could be further developed.

6. PRACTICAL PEDAGOGIES FOR CHINESE FAMILY EDUCATION

In the previous chapters, primary suggestive findings are recognised from the aspects of fundamental early bilingual studies, linguistic correlation and differences between these two languages as well as current bilingual pedagogies in kindergartens. In this chapter, four practical pedagogies, including Age Stage Specific Strategy, One Guardian One Language, Interactive Bilingual Word Wall and Paired Bilingual Learning in the Community, are proposed for the early bilingual first language acquisition in Chinese family education together with respective theoretical evaluation. These four practical pedagogies are designed in this study as recommendations by combining the Chinese social context and the findings from the literature review discussed in the previous chapters.

6.1 Age Stage Specific Strategy

The first pedagogy proposed in this study is the Age Stage Specific Strategy. Here, three age stages are differentiated according to the findings from fundamental bilingual studies, including stage one of language perception from birth to a year and a half, stage two of language imitation from over a year and a half to three years old, and stage three of rapid language development from the end of the third year to six years old. Care must be taken here as the notion of age refers to the average and approximate one. In the Chinese context, while the education for young children under three years old is still absent, parents become the main educators of early education for children in stages one and two. And the involvement in kindergarten of children in stage three enables the cooperation of parents and the local community. This pedagogy also links to the linguistic characteristics. Since oracy usually appears earlier than literacy in young children, the correlation of the phonological awareness as well as syntactic structure between Mandarin and English may help with the development of oracy of these two languages in early stages.

Specifically, in stage one, although little obvious language performance can be achieved, young children are actually in an essential primary period of language perception to form initial language awareness for future development. Thus, parents should try to give a balanced input of simple oral words in the two languages for the young children in stage one. In stage two, young children become capable of pronouncing not only simple words but also phrases and short sentences. Hence in this stage parents need to provide a larger amount of sound input in the two languages for young children to imitate to develop early oracy. And early literacy in this stage may appear by means of drawing rather than writing. In stage three, upon further biological and neurological development, multiple aspects of linguistic awareness become available in the minds of young children most of whom can differentiate two languages and manipulate the proper usage of either language in certain contexts. Therefore, parents need to pay attention to the early acquisition of the grammatical rules of the two languages for young children in stage three while maintaining the balanced bilingual oracy and literacy input for the children. However, as this strategy is a general guidance, adjustments may be required due to the variances of individual abilities.

Consistently, this pedagogy is supported by the stages of cognitive development of children by Jean Piaget. Piaget and Inhelder (1969) suggest that the first eighteen months in life of an infant is the sensori-motor period for the construction of all the cognitive substructures, particularly spontaneous vocalisation appears between six and ten or eleven months followed by the differentiation of phonemes via imitation. They also advise that at about a year and a half to two years the semiotic thoughts appear to enable the recognition of languages, and then phrases and short sentences may be articulated by young children from the end of the second year. Another important suggestion from them is that as the syntax of children aged from two to four has been observed, the acquisition of languages for children in this age range cannot simply rely on imitation but demands the introduction of grammatical rules. Although the differentiation of the age of three is not mentioned in their study, they note that the next developmental stage of concrete operations could not be

achieved until the age of seven or eight in children. As a supplement, the age differentiation of three years is referred to as both the minimum age requirement for entering kindergarten in the Chinese context and the suggestions from Baker (2000) and De Houwer (2009).

6.2 One Guardian One Language

The second pedagogy, as the localised Chinese version of One-Person-One-Language reviewed in the chapter of practical pedagogies, is the One Guardian One Language. In the review of literature, the original principle of One-Parent-One-Language or One-Person-One-Language has been advocated with regard to its general practicability by many researchers over a century. And the modification on the original version is due to the unique Chinese context. In Chinese, for one thing, since most parents, or at least one of the parents in a family, are busy at work on weekdays and even at weekends sometimes. Such intense occupation by work in parents may lead to an imbalanced input of the two languages for the children if we simply apply the original principle. For another thing, as most parents are busy at work on weekdays, most grandparents are involved in the parenting of young children, especially of those who are not mature enough to enter kindergartens. Meanwhile, this pedagogy is associated with the findings in fundamental bilingual studies as well. While the frequency and quality of bilingual input is emphasised, past research works also suggest that pedagogies may be family-specific due to different family patterns and variations in parental language abilities.

To be specific, this One Guardian One Language principle invites the involvement of both parents and grandparents in the Chinese context. And it is flexible for each family to decide which language for which parent or grandparent to speak to the child. However, since most grandparents as the elder generation in China are usually not very proficient in English, this study suggests that parents speak English and grandparents speak Mandarin to the child. This may be suitable especially for young children under the age of three who are still in the process of language recognition. In this way, young children

would listen to the Mandarin speaking from grandparents in the daytime and the English speaking at nights when parents are back home from work particularly on weekdays. Such arrangements also help differentiate the time periods in a day for different language immersions as investigated in empirical studies. Moreover, this principle considers the language differences between genders while the language differences among different age groups are considered in the fourth pedagogy. Nonetheless, care may be taken when the grandparents are not available for the participation of parenting or when the family is a single-parent one. For these families, further adjustments may be required according to the specific family situations.

With regard to the rationale for this pedagogy, Piaget and Inhelder's (1969) study provides supportive theoretical evidence. According to their introduction, the construction of reality of young children in the first eighteen months is a general decentring process without understanding the means and ends. As children are in the process of constructing reality, the differentiation of different languages spoken by different guardians may be easier for the child to tell and recognise. Additionally, this pedagogy is also in line with the 'habit schemes' (p. 9) discussed in their work. They clarify that the elementary habit relies on general sensori-motor schemes as either the inborn or acquired responses to external stimuli, and that the habitual reactions further interact with the intelligence ones. Therefore, by applying this pedagogy, children may gradually form the habit of communicating with different guardians by using different languages in early stages even though they cannot figure out the differentiation mechanism they adopt or the outcomes of this pedagogy. In return, the habit can help promote the development of intelligence to enable them to comprehend the differentiation in a later developmental stage.

6.3 Interactive Bilingual Word Wall

The third pedagogy, as an evolved adopted version from the reviewed kindergarten pedagogy, is the Interactive Bilingual Word Wall. From the findings of the literature review, the word wall is suggested as visual assistance to help

with the lexical development in kindergartens. Likewise, in the family education context, this pedagogy is helpful for the development of early literacy. Linking to the linguistic characteristics, since few orthographic similarities are found between Mandarin and English, the early exposure to the written discourses of the two languages may be helpful for developing awareness of language differentiation and the word-meaning matching in bilingual children. Relating to the Chinese context, as currently the Chinese society is mostly a monolingual one, in the process of bilingual acquisition young children may have few opportunities to see English words as frequently as Chinese characters in daily life. While the balanced frequency and quality of exposure to two languages are essential for early bilingual acquisition in children, the word wall may fill the gap in reality to display two language words in pairs as the visual assistance.

Regarding this pedagogy, there are three dimensions included for the Interactive Bilingual Word Wall. Firstly, the word wall is mainly used by parents to display high-frequency bilingual words in pairs on paper cards, preferably not a large number of word pairs but just several ones at a time, to assist the bilingual acquisition of young children. This dimension is also in connection with the Age Stage Specific Strategy as the display could develop from the simple words in early stages to phrases or short sentences in later stages. Secondly, upon a certain period of exposure to several bilingual word pairs, parents can play the game of bilingual word cards matching with the children to help them develop linguistic awareness via the process of word-meaning matching. Then new word pairs can replace the previous ones and repeat the above steps while the old cards may be kept for later review. Finally, the word wall also allows the children to choose their favourite words to display. As suggested by the literature that the incentive or motivation is necessary for the language acquisition of the children, parents may take advantage of their curiosity and interest to discover more possible words the children want to learn and then display some other related words to improve the lexical development of the children. However, since young babies generally develop oracy prior to literacy as reviewed in the literature, the interactive bilingual word wall may not work

very well for the children in stage one but could be helpful to the development of early literacy for children in stage three.

Evidence for the rationale of this pedagogy is also identified from Piaget and Inhelder's (1969) study. Initially, they suggest that the constancy of size, which means the maintenance of perceiving the real size of an object in a distance, appears in infants of six months old after the coordination of vision and prehension at four and a half months old. Thus, the word wall may start to take effect on the six-month-olds since their vision and capability of comprehension start to work. Besides, when referring to the notion of mental images in children, they introduce two broad categories: the reproductive images as recalling sights which have been perceived; and the anticipatory images as imaginal movements and possible results. While the anticipatory images may not be available until the stage of concrete operation at the age of seven or eight, the mental images of children at the initial developmental stage are 'exclusively static' (p. 71). Moreover, in their further discussions on the memory of children, while the memory of recognising the reappearance of an object is 'precocious' (p. 80), the memory of evocation as evoking an object in its absence usually starts simultaneously with the mental images and the beginning of language learning. Therefore, the application of the word wall is consistent with the function of reproductive images and the memory of recognition in children from the very beginning.

6.4 Paired Bilingual Learning in the Community

The last proposed pedagogy, as a supplemental one for early family education, is the Paired Bilingual Learning in the Community. Primarily, the findings in the fundamental bilingual studies highlight the need for balanced frequency and quality of two languages. When referring to the quality of input, research on practical pedagogies emphasises the importance of paired learning in the social context so that the bilingual children can have the opportunity to interact with people of different age groups, and particularly, to play with other children. Hearing the languages used by different age groups may also help improve the

metalinguistic awareness in children. Additionally, this pedagogy links to the Chinese context in which most Chinese families, especially those living in cities, reside in apartments as a relatively isolated environment from neighbours in comparison with those families that live in houses. In order to promote the language development of bilingual children, this pedagogy becomes important in the Chinese context.

Specifically, this Paired Bilingual Learning in Community strategy can be operated from two perspectives. First of all, the bilingual learning pairs are not limited to formal study groups but they should involve chatting with adults or playing with other children while the people to be interacted with can be just Mandarin or English monolinguals. As there may be some other bilingual children in the local community, parents can introduce their children as friends to learn from each other to develop not only linguistic skills but also interpersonal skills. Furthermore, by relating to the Chinese context and the proposed One Guardian One Language principle, the suggestive time arrangements for bilingual children could be paired learning with Mandarin speakers on weekdays supported by grandparents and with English speakers at weekends led by parents. By doing so, the pedagogies proposed may be reasonably correlated without causing unnecessary confusions or difficulties in the bilingual acquisition in children. For this strategy, attention may be given to the quality of language use of the paired partners. Whether they use formal or informal expressions and positive or negative words could be influential to the young children in the stage of language acquisition.

Theoretical proof is also identified from the work of Piaget and Inhelder (1969). As with their statement, socialisation is important for the psychological development in children because contacting with people signifies the transition from 'contagion' (p. 24) to communication. In the process of interpersonal communication, children would first form specific schemes of their own actions to different behaviours and then the causality which may produce pleasure, comfort, or security, is established. This pedagogy, as the extension of language acquisition at home, fills the gap to enable the children to develop social awareness and adapt to the society. Meanwhile, as often emphasised in their

work, young children learn language in a context of imitation as language is not a preceding behaviour pattern. Therefore, the interaction with people outside the family can make up the part of social language. Finally, in their work they point out the importance of play in the development of children. To be specific, play transforms reality via assimilating the self needs, and, if necessary, imitating from external models. While language is the essential instrument of social adaptation, play could be an assimilation made by the language that is developed and modified by the children themselves. As language is integrated with play, the introduction of play into this pedagogy could meet the needs of young children while improving their language skills.

6.5 Summary

In this chapter, upon linking findings in literature review from different perspectives, four practical pedagogies on the Mandarin-English bilingual first language acquisition of Chinese preschool children for parents in early childhood family education are proposed to guide practice. To sum up, by linking the findings from fundamental bilingual studies, linguistic characteristics of Mandarin and English and the Chinese educational context, the Age Stage Specific Strategy is proposed; the One Guardian One Language is a localised version of One-Person-One-Language principle with reference to fundamental bilingual studies and the Chinese family context; the Interactive Bilingual Word Wall is adopted from the kindergarten pedagogy by considering the linguistic characteristics of two languages and the Chinese social context; and the proposition of Paired Bilingual Learning in the Community is derived from the fundamental bilingual studies, available practical pedagogies and the Chinese social context as well. Although variations may occur to the application of these pedagogies due to different family patterns, these four proposals as the production from the findings in literature review may serve as the theoretical reference to guide real practice in Chinese family education.

7. CONCLUSION

With the adoption of the methodology of systematic literature review, this study strives to answer the research question as what pedagogies are appropriate for parents in order to cultivate Mandarin-English Bilingualism for Chinese preschool children in early childhood family education. In the literature review, this study looks into the fundamental early bilingualism theories, the linguistic differences and similarities of Mandarin and English, and current kindergarten pedagogies to examine suitable pedagogies for the cultivation of early bilingualism for young children in family education settings in the Chinese context.

Upon the exploration of the fundamental early bilingualism theories, the rationale and advantages of early bilingualism are reiterated by both the theoretical and empirical proof. Specifically, three major findings are identified. In the first place, different pedagogies may be designed for different age periods of young children. Meanwhile, the balanced frequency and quality of language input of two languages are necessary for the successful cultivation of early bilingualism. Lastly, pedagogies would be family specific due to different family patterns.

In the review of the linguistic characteristics of Mandarin and English, three helpful implications are discovered. First, there is a close correlation in phonological awareness between the two languages. Second, there are few similarities in terms of the orthography between them. Third, similarities and differences exist in these two languages from the grammatical aspect.

When reviewing the current kindergarten pedagogies, more beneficial findings are recognised to support this study. First, the One-Person-One-Language principle could be adopted upon modifications as it has been widely tested in different cultural settings. Second, it would be practical to schedule different time periods of a day to practice different languages. Third, visual assistance could be helpful for vocabulary development. Finally, collaborative

working is important for young children as it helps develop the social aspect of learning and using different languages.

By combining the findings from the literature and the Chinese context, this study suggested four practical pedagogies as possible guidance for real practice in Chinese families. The first one is the Age Stage Specific Strategy which advises the parents to give a balanced input of simple bilingual words for young babies under the age of a year and a half, to provide a larger amount of lexical sounds for young children aged from over a year and a half to three years, and to cultivate the grammatical awareness and early literacy for children aged over three years. The next one is the One Guardian One Language which suggests that Chinese parents speak English and the grandparents speak Mandarin to the young children while adjustments would be needed according to certain family situations. The third one, as the Interactive Bilingual Word Wall which is for displaying bilingual word pairs selected by the parents and the favourite words chosen by the children, aims to provide visual assistance for the bilingual lexical development of young children. Finally, the Paired Bilingual Learning in the Community enables the young children to develop bilingualism in the social context via speaking to other adults and playing with other children. Through the theoretical evaluation, evidence is found from the stages of cognitive development of children proposed by Piaget and Inhelder (1969) to support the practicability of four proposed pedagogies.

Nonetheless, there are limitations regarding the pedagogies designed in this study despite the theoretical support. The Age Stage Specific Strategy, as a general guidance, may not be accurately applicable for all children in those three age stages. As the notion of age in this study is the approximate and average one, minor modifications could be necessary according to the individual abilities and the real language progression of the children. Besides, the One Guardian One Language rule may need further adjustments for those families in which grandparents do not participate in parenting or only one single parent is available. Moreover, the Interactive Bilingual Word Wall strategy may not be practical for young babies under the age of a year and a half but would be beneficial for those over three years old. Lastly, when applying the Paired

Bilingual Learning in the Community strategy, the quality of language use of the paired partners may be monitored to avoid negative impacts for the children.

In consideration of these limitations, while this study examines the practicability of these pedagogies from the theoretical perspective, further empirical research may be necessary to support these pedagogies. To be specific, further observations or experiments might be effective methods to collect empirical evidence to optimise these pedagogies. Hopefully, these pedagogies could serve as the basic guidance to assist the Chinese parents with the Mandarin-English bilingual cultivation of their children.

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