Parent–child reading in English as a second language: Effects on language and literacy development of Chinese kindergarteners

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This study investigated the effects of dialogic parent–child reading in English on 51 Hong Kong kindergarteners learning English as a second language. Children were pre-tested on nonverbal IQ, reading interest and receptive vocabulary, word reading and phonological awareness in both Chinese and English. They were then assigned randomly to one of three conditions involving different levels of parent–child interactions: dialogic reading (DR), typical reading (TR) or control. Though inter-group comparisons showed nonsignificant interaction effects across time among the three groups, intra-group gains across the 12-week intervention suggested that parent–child reading could enhance English word reading skills, while dialogic reading could promote phonological awareness in both Chinese and English. These results highlight the potential benefits of English parent–child reading and dialogic reading on children learning English as a second language, and the possibility of linguistic transfer from parent–child reading in English as a second language to Chinese as a first language.

Language and literacy acquisition are both key milestones in child development that can lead to expertise in other spheres of life (Snow, Burns & Griffin, 1998). Given the importance of language and literacy skills, exploring methods for facilitating language and literacy development has drawn the attention of researchers and educators (Whitehurst & Lonigan, 1998). Parent–child reading is a key home literacy activity that plays an important role in children’s first-language development (Scarborough & Dobrich, 1994). However, little is known about the impact of parent–child reading at home on second-language acquisition of young children, especially among those whose first language is linguistically very different from their second language.

In the present study, we investigated the effects of parent–child reading using English as a foreign-language context in relation to language and literacy skills of Chinese kindergarteners. This study extended past research in three ways. First, it was among the...
first to test the effects of dialogic reading on learning a second language. Second, it examined the causal links of parent–child reading at home and second-language learning of young children with an intervention design. Third, it investigated linguistic transfer from parent–child reading in English as a second language to Chinese as a first language. Findings of this study might enhance our understanding of the course of second-language development and potential home literacy activities for second-language instruction on young children, especially in a foreign-language context.

**Parent–child reading**

Parent–child reading is an ideal home literacy activity as it provides a natural context for parents to assist their children in forming concepts about books, print and reading (Clay, 1979). Parent–child reading exposes children to vocabulary that they have not encountered in daily life, and provides a context for parents’ labelling of pictures and use of more sophisticated language, and hence it is especially effective in helping children to learn novel vocabulary words and more complex language structure (DeTemple & Snow, 2003; Wasik & Bond, 2001). Numerous studies have documented the fact that parent–child reading experiences enhance children’s language and literacy abilities in their first language, including vocabulary (e.g. Hood, Conlon & Andrews, 2008), oral language complexity (e.g. Crain-Thoreson & Dale, 1999), narrative skills (e.g. Harkins, Koch & Michel, 1994), phonological awareness (e.g. Burgess, 1997), print awareness (e.g. Justice & Ezell, 2000), letter awareness (e.g. Mason, Kerr, Sinha & McCormick, 1990) and reading skills (e.g. Wood, 2002). Despite well-established evidence on the effects of parent–child reading on first-language development, however, few studies have examined how parent–child reading influences second-language acquisition. Because the impacts of parent–child reading on monolinguals and bilinguals could differ, and storybook reading in a first language and a second language could serve different functions, findings on first-language development should not be generalised to second-language development without empirical evidence (Barrera & Bauer, 2003; Vedder, Kook & Muysken, 1996).

A few studies have examined the links between home literacy environment, including children’s exposure to books at home, and children’s second-language abilities, with mixed results (e.g. Hammer, Miccio & Wagstaff, 2003; Uchikoshi, 2006). Some studies have focused on the impact of second-language parent–child reading, and they have relied on parental reports of home literacy practices (e.g. Kalia, 2007; Patterson, 2002). Parental reports of English storybook knowledge were associated with children’s English concepts of print, syntactic and narrative skills and phonological awareness, in Indian preschoolers (Kalia, 2007). Also, there were language-specific links between parental reports of the frequency of parent–child reading and Spanish toddlers’ expressive vocabulary size in both English and Spanish, after toddlers’ age and overall exposure to each language were statistically controlled (Patterson, 2002). However, these studies were correlational, and thus causality could not be established. Collins (2005) conducted an experiment on second-language parent–child reading, and found that explanations of new vocabulary words during English storybook reading could enhance English vocabulary skills among Portuguese preschoolers. Nevertheless, Collins’ (2005) study compared English parent–child reading with and without explanations for new vocabulary words, and hence the overall effects of English parent–child reading itself could not be demonstrated.
Even less is known about the impact of parent–child reading on learning English in a foreign-language context. A foreign-language context is conceptualised as a specific kind of second-language context in which a second language is rarely used as a means of communication in daily life and is learned mainly through formal instruction in classroom settings only (e.g. Chinese children learning English in China). Owing to a lack of an English sociocultural environment, children might encounter particularly great challenges in learning English in a foreign-language context, and thus English home literacy activities may be particularly important for them. However, there is a relative lack of research investigating the effect of parent–child reading on learning English as a foreign language. A few studies have examined the role of interactive book reading employed outside school on learning English as a foreign language, but these have featured reading by teachers or specially trained researchers, rather than by parents. For instance, Kim and Hall (2002) demonstrated that a 4-month interactive book-reading programme enhanced English skills in Korean children learning English in a foreign-language context. The present study extends these lines of research by employing an intervention design with parent–child reading and control conditions to examine the influence of English parent–children reading on young Chinese children learning English in a foreign-language context.

Dialogic reading

Although parents’ straight reading of a story can enhance children’s learning by itself, it is even more stimulating if children are scaffolded to use words actively and engage in interactive conversations with their parents in this context (Nagy & Scott, 2000; Sénéchal, Thomas & Monker, 1995). These verbal and affective interactions during parent–child reading can enhance children’s language and literacy skills directly by encouraging children’s use of language, and indirectly through promoting their positive views about and interest in reading (Baker, Mackler, Sonnenschein & Serpell, 2001; Ortiz, Stowe & Arnold, 2001). Dialogic reading as developed by Whitehurst and colleagues is one of the most effective methods in fostering these parent–child interactions during shared reading (Whitehurst et al., 1988).

Dialogic reading is a specific parent–child reading technique that emphasises scaffolded parent–child interactions (Whitehurst et al., 1988). The dialogic reading technique guides parents to take the role of active listeners, and to support their children to be storytellers by using prompt questions, expanding the children’s verbalisations, linking the text to daily life experience and giving praise (Valdez-Menchaca & Whitehurst, 1992). With this technique, children are scaffolded to speak more and use more sophisticated language than they normally do, and this contributes to more rapid growth of language skills, according to the principle of proximal development (Vygotsky, 1978).

Dialogic reading has positive impacts on children’s language skills, especially vocabulary, in English (e.g. Hargrave & Sénéchal, 2000; Huebner, 2000; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1988), Chinese (Chow, McBride-Chang, Cheung & Chow, 2008; Fung, Chow & McBride-Chang, 2005) and Korean (Lim, 1999). Some studies have also demonstrated that dialogic reading can promote literacy skills in English (e.g. Whitehurst et al., 1994, 1999) and Chinese (e.g. Chow & McBride-Chang, 2003). In addition, dialogic reading was successfully used among Turkish
families in a recent study (Kotaman, 2007). The positive effects of dialogic reading on children’s first-language development are well supported.

However, there have been few or no previous studies specifically investigating its effects on children learning a second language. As dialogic reading could provide an ideal context for parent–child interactions at home, and parents’ specific behaviours during second-language storybook reading influence children’s language skills (e.g. Collins, 2005), we expected that dialogic reading could enhance second-language learning in similar ways to those demonstrated for first-language acquisition. In this study, we examined the influences of dialogic reading in English on Chinese children’s language and literacy skills.

In the context of second-language learning, dialogic reading promotes children’s exposure to and use of English, which can directly expand their vocabulary and knowledge of more complex language structures, and also help to fine-tune their phonological representations. When children’s experience with English increases and their vocabulary grows, they encounter more words of increasing similarity in phonological structure. These words may, for example, differ from one another by only a single phoneme, and thus finer levels of phonological representation are needed to discriminate them (e.g. wrath, path, bath). In other words, with an expanding vocabulary, children’s phonological representations are fine-tuned to discriminate words similar in phonological structure, as proposed by the lexical restructuring model (Metsala & Walley, 1998). Therefore, in the present study, we tested the hypothesis that, given the important role of spoken language experience, dialogic reading might enhance children’s sensitivity to English phonological representations.

Hong Kong Chinese children learning English as a foreign language

The present study investigated the impact of English parent–child reading on Hong Kong Chinese children. Hong Kong was a colony of the United Kingdom until 1997. Owing to the former governance by the United Kingdom, the use of English has been emphasised in school. Most Hong Kong children start their formal schooling at the age of 3 (Opper, 1996). In Kindergarten, children begin to learn English letters and words, although some of them have started learning them at home before they enter school. Throughout the 3-year Kindergarten programme, children are taught to develop skills in listening to and reading English stories, understanding simple daily life English conversation and recognising and writing some basic English words (Education and Manpower Bureau HKSAR, 2006). More structured English lessons are given in primary school, where 17–21% of lesson time is allocated to English learning (Education and Manpower Bureau HKSAR, 2004). In addition, the majority of Hong Kong kindergartens tend to place relatively great emphasis on English learning through reading and writing. Indeed, there is a relatively strong focus on word recognition and dictation exercises from age 4 for English learning (McBride-Chang & Treiman, 2003). This focus on English learning in print may not facilitate children’s actual oral learning, however. Furthermore, although English learning is emphasised in school, there is little support for children to use English, especially spoken English, in daily communication (Cheung & Ng, 2003). Thus, programmes that provide guidance for parents to encourage English use at home are needed.

Previous work suggests that first-language and second-language learning may overlap or reinforce one another in some aspects. For example, studies of Chinese children
learning English as a second language have indicated cross-linguistic transfer from Chinese to English, including skills in Chinese phonological awareness in relation to English vocabulary and word reading in foreign-language learning (e.g. Chow, McBride-Chang & Burgess, 2005; McBride-Chang, Cheung, Chow, Chow & Choi, 2006) and other second-language learning contexts (e.g. Gottardo, Yan, Siegel & Wade-Woolley, 2001). In these studies, ‘transfer’ essentially referred to the unique correlation between first- and second-language skill. Nevertheless, owing to the correlational nature of these studies, causal relations of these skills remain unclear. Thus, the present study examined the influence of English parent–child reading on Chinese language and literacy skills, to shed light on the relations across first- and second-language development in young children.

The present study

The present study examined the effects of parent–child reading used in the context of English as a foreign language on Chinese kindergarteners’ language and literacy skills. Three participant groups were included: dialogic reading (DR), typical reading (TR) and control, and there were two main hypotheses. First, because past studies had found that parent–child reading of different types tends to facilitate both vocabulary knowledge and word recognition, it was expected that both the TR and DR conditions would demonstrate larger gains in vocabulary and word reading than would the control condition. Second, given both the lexical restructuring hypothesis emphasising the strong link between vocabulary knowledge and phonological awareness (Metsala & Walley, 1998) and the importance of parent–child interactions as shown in previous dialogic reading research, the DR condition was expected to yield greater improvements in phonological awareness, as compared with both the TR and the control conditions.

Method

Participants

Fifty-one Hong Kong 3rd-year kindergarteners of normal intelligence from three local kindergartens were included. Children ranged in age from 57 to 71 months with a mean age of 62.7 months. There were 22 males and 29 females. Parents of these children were Cantonese speaking, and their education attainment was college level on average. Parents who rated themselves and their children as capable of using English to communicate were included in this study, while other parents and their children participated in another study on dialogic reading and morphology training in Chinese (Chow et al., 2008). The median of monthly family income range was 5.5 in our scale, which was between HK$40,000–59,999 (US$51,128–US$7,692) and ≥ HK$60,000 (US$7,692) (the median monthly family income in Hong Kong is HK$17,250 [US$2,212], according to the Census and Statistics Department HKSAR, 2007). Thus, these participating families were relatively wealthy. Regarding the English learning environment at home, parents reported that on average the children owned between 30 and 49 English storybooks, and they read English storybooks together at least once a week. Parents’ own reading time in English and the time engaged in English conversations with their child averaged around 1–14 minutes per day for each activity. Regarding the Chinese learning environment at home, parents reported that on average the children owned between 30 and 49 Chinese storybooks, and
they read Chinese storybooks together at least once a week. Parents’ own reading time in Chinese and the time engaged in Chinese conversations with their child averaged around 30–59 minutes per day for each activity. The descriptive statistics on children’s sex, family demographics and home literacy resources and practices are presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1. Descriptive statistics on the demographic measures.</th>
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</thead>
<tbody>
<tr>
<td><strong>Frequency/Median</strong></td>
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<tr>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
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<tr>
<td><strong>Median (range in parentheses)</strong></td>
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<tr>
<td>Maternal education</td>
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<tr>
<td>Paternal education</td>
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<tr>
<td>Family income</td>
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<tr>
<td><strong>English</strong></td>
</tr>
<tr>
<td>No. of storybooks</td>
</tr>
<tr>
<td>Frequency of parent–child reading</td>
</tr>
<tr>
<td>Parents’ own daily reading habits</td>
</tr>
<tr>
<td>Parent–child daily conversation time</td>
</tr>
<tr>
<td><strong>Chinese</strong></td>
</tr>
<tr>
<td>No. of storybooks</td>
</tr>
<tr>
<td>Frequency of parent–child reading</td>
</tr>
<tr>
<td>Parents’ own daily reading habits</td>
</tr>
</tbody>
</table>

**Notes:** *N* = 51 (17 for DR; 17 for TR; 17 for control).
The maternal and paternal educational levels were entered as follows: 1 = primary, 2 = secondary, 3 = preparatory, 4 = college, 5 = postgraduate.
The family income per month was entered as follows: 1 = <HK$5,000 (US$641), 2 = HK$5,000–9,999 (US$641–US$1,282), 3 = HK$10,000–19,999 (US$1,282–US$2,564), 4 = HK$20,000–39,999 (US$2,564–US$5,128), 5 = HK$40,000–59,999 (US$5,128–US$7,692), 6 = ≥ HK$60,000 (US$7,692).
The number of storybooks was entered as follows: 1 = none, 2 = <10, 3 = 10–29, 4 = 30–49, 5 = ≥50.
The frequency of parent–child reading was entered as follows: 1 = none, 2 = <10 times in a year, 3 = once a month, 4 = once a week, 5 = > once in a week.
Parents’ own daily reading habits were entered as follows: 1 = none, 2 = 1–14 minutes, 3 = 15–29 minutes, 4 = 30–59 minutes, 5 = 1–2 hours, 6 = >2 hours.
Parent–child daily conversation time was entered as follows: 1 = none, 2 = <30 minutes, 3 = 30–59 minutes, 4 = 1–2 hours, 5 = >3 hours. This item asked the parent to rate the conversation time with the child by himself/herself as well as his/her spouse.

Measures

**English word reading.** The English word reading test, administered at both pre- and post-test, consisted of a list of 30 English words derived from Hong Kong Kindergarten textbooks and used in previous studies (McBride-Chang & Kail, 2002; McBride-Chang & Treiman, 2003). Children were required to read each word aloud and testing stopped when they failed to read 15 consecutive items. The maximum score of this task was 30 and the Cronbach’s α was .97.

**English receptive vocabulary.** The Peabody Picture Vocabulary Test – Third Edition (PPVT-III; Dunn & Dunn, 1997) was used to measure children’s English receptive vocabulary at both pre- and post-test. The PPVT-III consists of four illustrations for each
of the 204 words. The words were orally presented by the experimenter and the children were required to select the corresponding illustrations. Children were tested according to standard directions of basal and ceiling rules for native English speakers. The maximum score of this task was 204, and its Cronbach’s $\alpha$ was .95.

**English phonological awareness.** The English phonological awareness test consisted of English syllable deletion and phoneme onset deletion tasks, and was administered at both pre- and post-test.

The syllable deletion task consisted of 16 three-syllable phrases, half of which were real word phrases and half of which were nonword phrases. There were five trial items. The items were orally presented by the experimenter and the children were required to take away one syllable from the three-syllable phrases. Four items required deletion of the first syllable, four items required deletion of the last syllable and eight items required deletion of the middle syllable. For example, ‘birthday cake’ without ‘cake’ is ‘birthday’. Testing stopped when the child failed to answer five consecutive items. The maximum score of this task was 16, and its Cronbach’s $\alpha$ was .90.

The phoneme onset deletion task consisted of 8 real words and 8 nonwords. There were five trial items. The items were orally presented by the experimenter and the children were required to take away the initial sound from the words or nonwords. For example, ‘cup’ without the onset /k/ is ‘up’. Testing ended when the child failed to answer five consecutive items. The maximum score of this task was 16, and its Cronbach’s $\alpha$ was .95.

**Chinese character recognition.** A 61-item character recognition list and 150 items adapted from the Hong Kong Test of Specific Learning Difficulties in Reading and Writing (HKT-SpLD) (Ho, Chan, Tsang & Lee, 2000) were combined and administered at both pre- and post-test. Children were required to read each word aloud. The items were arranged in increasing difficulty, and children were given the items adapted from the HKT-SpLD if they progressed beyond the 61-item character recognition list. Testing stopped when the child failed to read 15 consecutive items. The maximum score of the combined task was 211; Cronbach’s $\alpha$ was .98.

**Chinese receptive vocabulary.** The Chinese receptive vocabulary test, administered at both pre- and post-test, consisted of 30 items from the Hong Kong Cantonese Receptive Vocabulary Test (Cheung, Lee & Lee, 1997), and 30 additional items translated and adapted from the Peabody Picture Vocabulary Test – Third Edition (PPVT-III; Dunn & Dunn, 1997). The original Hong Kong Cantonese Receptive Vocabulary Test, consisting of 3 training and 65 test items, is modelled on the PPVT and developed for Cantonese-speaking children aged 2–6 years. There are four pictures in each item which illustrate the target, a phonological distracter, a semantic distracter and an unrelated item. This test and the Chinese translation of PPVT-III have been successfully used among Hong Kong children in some previous studies (e.g. Chow & McBride-Chang, 2003; McBride-Chang et al., 2006). The presently used 60 vocabulary items were selected through a pilot test from 95 initial items drawn from the two respective tests. From this initial pool, 35 items, which yielded over 95% of correct responses, were discarded. The experimenter read aloud each item and the child was asked to select a picture from four options to match it. The maximum score of the vocabulary test was 60; Cronbach’s $\alpha$ was .65.
Chinese phonological awareness. The Chinese phonological awareness test consisted of Chinese syllable deletion and phoneme onset deletion tasks, and was administered at both pre- and post-test.

The Chinese syllable deletion task consisted of 16 three-syllable phrases, half of which were real word phrases and half of which were nonword phrases (i.e. phrases with nonsense syllables that conformed to the phonological constraints of Cantonese). There were five trial items. The items were orally presented by the experimenter and the children were required to take away one syllable from the three-syllable phrases. Four items required deletion of the first syllable, four items required deletion of the last syllable, and eight items required deletion of the middle syllable. For example, the real word phrase ‘交通灯’ /hung4 luk6 dang1/ (traffic light) without ‘绿’ /luk6/ (green) is ‘红灯’ /hung4 dang1/ (red light). Testing stopped when the child failed to answer five consecutive items. The maximum score of this task was 16, and its Cronbach’s $\alpha$ was .88.

The phoneme onset deletion task consisted of eight real words and eight nonwords (i.e. nonsense syllables that conformed to the phonological constraints of Cantonese). There were five trial items. The items were orally presented by the experimenter and the children were required to take away the initial sound from the words or nonwords. For example, ‘偷’ /tual1/ (to steal) without ‘t’ is ‘欧’ /ual1/ (Europe). Testing stopped when the child failed to answer five consecutive items. The maximum score of this task was 16, and its Cronbach’s $\alpha$ was .98.

Nonverbal IQ. The Raven’s Colored Progressive Matrices (RCPM; Raven, Court & Raven, 1995) was used to measure children’s nonverbal IQ at pre-test only. In this study, only sets A and B with 24 items in total were used. The maximum score of this task was 24, and its Cronbach’s $\alpha$ was .63.

Reading interest. A six-item questionnaire was administered to assess children’s interest in reading at pre-test only. The items of this questionnaire were adapted from a questionnaire measuring children’s interest in literacy-related episodes which have been successfully administered to Hong Kong kindergarteners (Lau & McBride-Chang, 2005). Each of the six items represented a reading-related episode. Items included whether the child enjoyed reading storybooks with his or her (a) mother, (b) teachers and (c) elder siblings; enjoyed reading books on his or her own; enjoyed going to the library; and felt that he or she was competent in reading books. Children were shown a picture with four different faces being very unhappy, unhappy, happy and very happy, respectively, and then asked to differentiate those faces. For each item, the experimenter read out the item and the child had to select the face most appropriately describing his or her own degree of happiness in that particular reading-related episode. If the question was not applicable to the child, a choice of ‘n/a’ was provided. Total score was divided by the number of questions applicable to the child and this score was used for analysis. The maximum score of this task was 4; Cronbach’s $\alpha$ was .74.\footnote{United Kingdom Literacy Association 2009}

Storybook identification. This task was administered at post-test only and served as a measure of the number of storybooks read during the 12-week programme. It consisted of 24 pictures of storybook cover pages, half of which were storybooks used in this study (targets) and half of which were not (distractors). Distractors were selected from the storybooks in the same series as the targets, and they were all developed and published in Mainland China only. Thus, these distracters looked similar to the targets but they had not
been read by the participating children. Children were asked to select from the 24 pictures those they had read before. Scores were calculated by subtracting the number of distracters chosen from the number of targets chosen. Higher scores reflected the fact that more storybooks used in this study were read, and the maximum score of this task was 12.

**Demographic questionnaire.** A demographic information questionnaire was distributed to the parents of participating children before the 12-week programme. It was printed in Chinese and consisted of questions about participating children’s school, class, sex, date of birth, maternal education level, paternal education level, family income and language and reading resources and practices at home.

**Follow-up questionnaire.** A follow-up questionnaire to collect feedback on the dialogic reading method was distributed to the parents in the DR condition after the 12-week programme. It was printed in Chinese and included questions about whether they liked the dialogic reading method and whether they employed the dialogic reading technique when they read other books with their children.

**Experimental conditions**

**Dialogic reading.** Each participant was provided with a set of 12 English storybooks with hints for prompt questions added in each book. These storybooks had a lot of pictures and did not rely heavily on the written text. Parents were also given guidelines on how to use the dialogic reading technique. The fundamental technique in dialogic reading is the PEER sequence in parent–child reading. The parent *prompts* the child to say something about the storybook, *evaluates* the child’s response, *expands* the child’s responses by rephrasing and adding information and *repeats* the prompt to ensure the child has learned from the expansion. There are five types of prompt question, including completion, recall, open-ended, wh- and distancing. The purposes and ways to make use of these concepts in dialogic reading were explained and demonstrated in a 1-hour training session for all participating parents by the first author as outlined below.

**Typical reading.** Participants were provided with 12 English storybooks that were the same as those used in the DR condition before the programme. However, no hints were included in the books. Parents were requested to read to their children as they normally would.

**Control.** No books were initially provided, and parents were expected to rely on their regular literacy habits with their children during the 12-week programme. After the post-test, participants were given a set of 12 English storybooks and the dialogic reading training materials.

**Procedure**

After informed consent had been obtained from parents, the parents were given a demographic information questionnaire. The children were pre-tested in two 30-minute sessions in their school by trained psychology major undergraduates and postgraduates who were blind to the group placements. The children were administered the RCPM, the children’s questionnaire on reading interest, the English word reading, the English PPVT-III, the English phonological awareness task, the Chinese character recognition task, the Chinese receptive vocabulary test and the Chinese phonological awareness task. Children were assigned randomly to one of the three conditions: the DR, the TR and the control.
Before the reading intervention started, materials were distributed to the parents of the DR and TR groups, and a 1-hour training session was held for the parents of the DR group in the schools. In the training session, parents were trained to employ dialogic reading through live instruction and demonstration conducted by the first author. The dialogic reading guideline contained major points about the techniques and examples illustrating the utilisation of the techniques to which parents in the DR condition could refer during the programme.

The parent–child reading programme was conducted across 12 weeks. Parents in the DR and the TR conditions were required to read in English with their child, and to encourage their child to speak in English during storybook reading. A storybook was selected for each of the 12 weeks, and parents were asked to read the storybook with their children twice in a week for 20 minutes each time. During the 12-week intervention, parents of the DR and the TR groups were contacted over the phone on a fortnightly basis to find out if they encountered any problems.

Children were then immediately post-tested using the same tasks as those used in the pre-test, except for the RCPM and the children’s questionnaire on reading interest. The storybook identification task was administered at post-testing only. A follow-up questionnaire was distributed to the parents of the DR condition, and the storybooks were given to the control group, after the post-testing of their children. Following completion of this study, training sessions were held for all participating parents on the dialogic reading techniques.

Results

Pre-test measures

To ensure the sampling was unbiased, separate non-parametric Kruskal–Wallis Tests were conducted to compare the demographic information and home literacy resources and practices among the three conditions. Forty-three demographic questionnaires were collected from participating parents successfully (14 for DR; 16 for TR; 13 for control). The three conditions did not differ significantly on any of these demographic and home literacy measures, including sex, maternal educational level, paternal educational level, family income and number of books owned by children, frequency of parent–child reading, parents’ own daily reading habits and parent–child daily conversation time in both English and Chinese (all \( p > .05 \)).

Separate ANOVAs were also used to compare children’s chronological age, scores on the RCPM and the children’s questionnaire on reading interest among the groups to test for factors that might affect children’s language and literacy abilities as well as their capacity for improvement. No significant differences were found (all \( p > .05 \)). The descriptive statistics for chronological age, and scores on the RCPM and the children’s questionnaire on reading interest are presented in Table 2. Accordingly, these pre-test measures were not included in further analyses.

Six separate ANOVAs were conducted to compare pre-test scores among the three groups on the tasks of English word reading, English PPVT-III, English phonological awareness, Chinese character recognition, Chinese receptive vocabulary and Chinese phonological awareness, to ensure that any group differences were not due to biased sampling. The descriptive statistics for each task are presented in Table 3. No significant differences were found on the pre-test scores of these tasks among the three groups (all \( p > .05 \)).
The descriptive statistics for the storybook identification scores are presented in Table 3. Children in the control group, who had not read any of the books included in this task, scored near zero on average, while children in the DR and TR conditions scored around 9.5 on average. Results indicated that this task distinguished children who had and had not read the storybooks, and children in the two reading conditions had read most of the books during the 12-week reading programme.

Table 2. Descriptive statistics on children’s age, IQ and reading interest at pre-test.

<table>
<thead>
<tr>
<th>Mean</th>
<th>DR</th>
<th>TR</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>M</td>
<td>63.00</td>
<td>61.59</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>2.65</td>
<td>3.48</td>
</tr>
<tr>
<td>IQ (RCPM raw scores)</td>
<td>M</td>
<td>12.94</td>
<td>13.24</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>2.86</td>
<td>3.44</td>
</tr>
<tr>
<td>Reading interest</td>
<td>M</td>
<td>3.18</td>
<td>3.53</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.43</td>
<td>0.38</td>
</tr>
</tbody>
</table>

Note: N = 51 (17 for DR; 17 for TR; 17 for control).

Table 3. Descriptive statistics on the tasks administered at pre-testing and post-testing.

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>DR</td>
<td>TR</td>
</tr>
<tr>
<td>English word reading</td>
<td>M</td>
<td>9.18</td>
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<tr>
<td></td>
<td>SD</td>
<td>10.8</td>
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<tr>
<td>PPVT</td>
<td>M</td>
<td>41.24</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>18.58</td>
</tr>
<tr>
<td>English phonological awareness</td>
<td>M</td>
<td>13.18</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>7.72</td>
</tr>
<tr>
<td>Chinese character reading</td>
<td>M</td>
<td>49.65</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>25.87</td>
</tr>
<tr>
<td>Chinese receptive vocabulary</td>
<td>M</td>
<td>35.88</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>6.77</td>
</tr>
<tr>
<td>Chinese phonological awareness</td>
<td>M</td>
<td>13.35</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>9.69</td>
</tr>
<tr>
<td>Storybook identification</td>
<td>M</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>–</td>
</tr>
</tbody>
</table>

Notes: Dashes indicate that data were not applicable for the Storybook identification task at pre-test. N = 51 (17 for DR; 17 for TR; 17 for control).

Storybook identification

The descriptive statistics for the storybook identification scores are presented in Table 3. Children in the control group, who had not read any of the books included in this task, scored near zero on average, while children in the DR and TR conditions scored around 9.5 on average. Results indicated that this task distinguished children who had and had not read the storybooks, and children in the two reading conditions had read most of the books during the 12-week reading programme.
Group improvement

We examined group improvement in two ways. First, inter-group differences were compared by examining interaction effects with repeated measures analyses, to indicate whether these groups significantly differed from one another across time. Second, intra-group gains were tested with paired-samples t-tests on the pre-test and the post-test scores, to investigate the extent to which each group demonstrated significant improvements across time, and whether these gains were due to the mere passage of time (control) or intervention (DR and TR). These analyses shed light on the group differences and the improvements of each group across time, both of which provide important information on the effects of the intervention. The descriptive statistics for the pre-test and post-test scores on each task are presented in Table 3.

Six separate 3 (Group) × 2 (Time) repeated measures analyses were performed on the tasks of English word reading, English PPVT-III, English phonological awareness, Chinese character recognition, Chinese receptive vocabulary and Chinese phonological awareness, to compare group differences in the 12-week programme. No significant interaction effects were found (all ps > .05).

We conducted separate paired-samples t-tests comparing the pre-test and the post-test scores for each of the three groups for these six measures. The paired-samples t-tests for the control group showed significant gains on Chinese character recognition, t(16) = 4.64, p < .05, and Chinese receptive vocabulary, t(16) = 3.02, p < .05, suggesting the improvement in these skills could be due to the mere passage of time and general learning experience across the 12 weeks.

The paired-samples t-tests for the TR group showed significant gains on English word reading, t(16) = 3.80, p < .05, and Chinese character recognition, t(16) = 7.32, p < .05. These results suggest parent–child reading in English might more specifically enhance English word reading ability, though improvement in Chinese character reading might be due to general learning experience and the passage of time.

The paired-samples t-tests for the DR group showed significant gains on English word reading, t(16) = 2.76, p < .05, English phonological awareness, t(16) = 3.63, p < .05, Chinese character recognition, t(16) = 4.20, p < .05, Chinese receptive vocabulary, t(16) = 2.26, p < .05 and Chinese phonological awareness, t(16) = 2.60, p < .05. Compared with the findings on the TR and the control conditions, these results suggest that English DR might be particularly useful in promoting phonological awareness both in English and Chinese.

Overall, differential trends of intra-group improvements were revealed in English word reading, and English and Chinese phonological awareness. To understand these trends better, Cohen’s d was calculated on pre-test–post-test difference scores for the intervention groups against the control group. Effect sizes of English word reading and English and Chinese phonological awareness of DR were found to be .29, .36 and .28, respectively, indicating small effect size, and those of TR were found to be .71, -.04, and .06, respectively, indicating a large effect on English word reading and no effect on the phonological awareness skills.

Follow-up questionnaire

Seventy percent (15/17) of the parents of the DR group returned the follow-up questionnaire. Ninety-three percent (14 out of 15) of the parents reported that they liked dialogic reading while no parents disliked it. All of them used the dialogic reading techniques when they read storybooks other than those used in the present study with their children.
Discussion

The present study investigated the effects of parent–child reading used in the context of English as a foreign language on language and literacy skills of Chinese kindergarteners. We extended past research by examining the impacts of second-language parent–child reading on both first- and second-language development with an intervention design. Though inter-group comparisons did not show significant interactions, intra-group gains indicated both typical reading and dialogic conditions had a significant improvement in English word reading, and the dialogic reading condition also showed significant gains in English and Chinese phonological awareness, across the 12-week intervention. These results suggest the potential of parent–child reading in enhancing English word reading, and parent–child interactions in fostering phonological awareness among Chinese kindergarteners. However, because these positive results were indicated by intra-group gains only, findings of our study need to be interpreted cautiously, and further research is needed to confirm their effects on children’s language and literacy development.

Findings of the present study indicated that the typical reading condition yielded significant gains in English word reading and Chinese character recognition across time. Because improvement in Chinese character recognition also occurred in the control group, and thus this gain might be due to general learning experience and the mere passage of time, these results suggest that parent–child reading in English might particularly enhance English reading acquisition in Chinese children. These findings are consistent with research evidence on the positive impact of parent–child reading in enhancing reading skills in the first language (e.g. Mason et al., 1990; Wood, 2002).

However, the typical reading condition did not yield a significant improvement in receptive vocabulary, in contrast with the strong research evidence on the effects of parent–child reading in facilitating children’s first-language vocabulary learning (e.g. Hood et al., 2008), and the positive links between parental reports on parent–child reading practices and children’s language abilities in a second language (e.g. Kalia, 2007; Patterson, 2002). This inconsistent finding could be attributable to the different behaviours and parental expectations in first- and second-language parent–child reading. First, verbal interactions between parents and their child might be less frequent and less sophisticated in second-language contexts, especially a foreign-language context, than in a first-language one, owing to the parents’ and their child’s lower proficiency in a second language. Second, parents might tend to focus more on identifying English words in print than in natural oral communication in English during second-language parent–child reading, possibly because of greater reliance on written as compared with oral language in English instruction (Cheung & Ng, 2003). Indeed, a focus on reading and writing in English instruction at school tends to be particularly emphasised in Hong Kong schools, and parents may emulate such practices at home when using this second language. Overall, given that more verbal interactions during parent–child reading contribute to greater growth in children’s language abilities (Whitehurst et al., 1994), the lower verbal exchange in parent–child dyads in second-language contexts either because of discomfort in using English, a special emphasis on learning through print, or both may have minimised the effects of parent–child reading on these children’s language skills.

In addition, we tapped children’s vocabulary knowledge generally with PPVT-III, rather than words in the stimulus storybooks. This more general measure might contribute to the weaker effects of the intervention on vocabulary knowledge found in this study. Also, the PPVT-III, which was originally developed for native English speakers, might
not be suitable for Chinese children learning English as a second language. Unfortunately, given that there are no locally normed English vocabulary tests for Chinese children, the PPVT-III is among the best tests available for assessing Chinese children’s English receptive vocabulary skill. However, future research is needed to develop an English vocabulary task specifically normed for Chinese children, and to examine the effects of English parent–child reading with this task.

The dialogic reading condition showed significant gains on all tasks, except English receptive vocabulary, across the 12-week intervention. Results imply that dialogic reading has potential in facilitating English reading skills in Chinese children. This is in line with the positive impacts of dialogic reading on English literacy skills of English-speaking children (e.g. Whitehurst et al., 1994, 1999), and Chinese literacy skills in Chinese children (Chow & McBride-Chang, 2003), all of which suggest that dialogic reading facilitates children’s literacy development. However, given that the gain in English word reading was also found in the typical reading group, the effects of the enhanced parent–child interactions that are integral to the dialogic reading technique over typical parent–child reading remain unclear.

Parallel to the results for the typical reading condition, children from the dialogic reading condition did not attain significantly better performance on English receptive vocabulary in the intervention, which is inconsistent with past dialogic reading findings on native English-speaking children (e.g. Hargrave & Sénéchal, 2000; Huebner, 2000; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1988). This could be attributed to the lower verbal interactions in second-language storybook reading as explained before. It should be noted that the principle focus of dialogic reading is on facilitating children’s oral language skills through parent–child interactions (Whitehurst et al., 1988), and the dialogic reading technique does not emphasise teaching or discussion about print. Despite this emphasis, our findings suggest that second-language dialogic reading tends to be less useful in enhancing oral vocabulary skills, particularly in a foreign-language context. Thus, these results suggest some possible differences in the nature and function of dialogic reading in the acquisition of the first language and that of the second language. Studies are needed to pursue the different impacts of first- and foreign-language dialogic reading and their mechanisms. It is noteworthy that both typical reading and dialogic reading conditions showed improvement on English word reading but not English receptive vocabulary in the present study. This finding may underscore the fact that Hong Kong Chinese children get much of their training in English by learning to read it, and thus focus more on word reading than on oral language skills, which is very different from the ways in which English native speakers learn English.

In addition, dialogic reading yielded significant gains in phonological awareness in both English and Chinese across time, and these gains were not found in the other two groups. These findings reflect the potential importance of parent–child interactions in English in promoting English phonological awareness, and suggest the possibility of cross-linguistic transfer, in Chinese children learning English in a foreign-language context. These results are consistent with research showing that the practice and use of language in storybook reading can enhance first-language phonological development (e.g. Hoffman, 1997). Experience with language and reading can sensitise children’s awareness of phonological units (Wagner, Torgesen & Rashotte, 1994). However, a previous dialogic reading study found that the intervention, which was a combination of a dialogic reading and a classroom-based sound and letter awareness programme, did not enhance phonological skills (Whitehurst et al., 1994). Despite this previous research, we
had hypothesised initially that phonological awareness would be enhanced through
dialogic reading because of the lexical restructuring hypothesis, which suggests that
enhanced exposure to a language promotes the need for greater phonological sensitivity
to it. Given these mixed findings, further studies are needed to confirm the impacts of
dialogic reading on phonological development. Our results are in line with past findings
of the links between Chinese phonological skills and English reading abilities among
Chinese children (e.g. Chow et al., 2005; Gottardo et al., 2001), and further extend these
studies by demonstrating causality with an intervention design.

The present study has both theoretical and practical implications. Theoretically, the
present study demonstrates the causal links of second-language parent–child reading at
home and language and literacy learning of young children with an intervention design.
Also, it provides new empirical evidence on the potential impact of dialogic reading on
children’s second-language acquisition. Third, it suggests some potential differences in
the nature and impacts of first- and second-language parent–child reading. Lastly, the
findings support the possibility of linguistic transfer from English as a second language to
Chinese as a first language.

In terms of practical significance, this study informs parents and educators on methods
in helping young children to learn English as a second language, especially in a foreign-
language context. This is particularly important because parental involvement plays an
essential role in fostering children’s knowledge and skill acquisition. Parents with no
background in psychology or linguistics could master the dialogic reading technique and
successfully employ it in second-language storybook reading. It is also cost- and time-
efficient to train parents. A 1-hour training session and copies of the guidelines were
effective for training parents to employ those techniques at home.

There were some limitations of this study. Though intra-group improvement results
suggest the potential effects of intervention, direct inter-group comparisons did not show
significant interaction effects. The nonsignificant interaction effects may be owing to the
small sample size and the relatively short period of intervention of this study, making the
effects difficult to detect in direct inter-group comparisons. Also, variances in children’s
language and literacy skills tend to have been greater in their second language than in
their first language, likely because of the higher variations of learning environments
available and parents’ varying language skills in the second language. This possible
greater variance in second-language skills may also have contributed to the nonsignificant
interaction effects obtained.

Also, we tapped vocabulary and word recognition generally, rather than words that
were specific to the storybooks participants had read, and this might have contributed to
the weaker effects of the intervention found in this study. In future work, an exploration
of growth in both general vocabulary skills and those specific to the training intervention
would be helpful in sorting out vocabulary effects. Therefore, readers should be cautious
when interpreting the results. An overarching goal of our future work is to replicate the
study with a larger sample, longer intervention period and the use of different methods
for tapping vocabulary and word recognition skills.

Also, children’s storybook identification was employed as an indicator of participants’
compliance with the programme. This is a cost- and time-efficient method, but a more
direct measure of parents’ compliance with the programme, such as audiotaping or
videotaping of the reading session, is recommended in future studies.

Finally, results suggest that the nature and effects of parent–child reading might differ
in the first language and the second language. However, this could only be confirmed
when parent–child reading of both languages is compared in a single study. Investigation of parents’ behaviour and children’s responses during first- and second-language parent–child reading is a promising topic for future research.

To summarise, this study was among the first to explore the effects of second-language parent–child reading on both first- and second-language development with an intervention design. Results showed the potential effects of English parent–child reading in facilitating English reading skills, and that of English dialogic reading in promoting phonological awareness in both Chinese and English, among Chinese kindergarteners learning English as a second language. This study contributes to the growing literature on the development of home literacy activities in promoting children’s second-language literacy and language skills, and supports the possibility of linguistic transfer from parent–child reading in English as a second language to Chinese as a first language.

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Notes

1. Cantonese is transcribed in the Romanisation symbols standardised by the Linguistic Society of Hong Kong (1993). Numbers indicate lexical tones.
2. Cronbach’s $\alpha$ was calculated based on five items, of which each was applicable to over 85% of the participating children.

References


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