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Interest, home environment, and young Chinese children's development of English as a second/foreign language

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Abstract

The current study examined the relationship between interest, the home environment, and young Chinese children's development of English as a second/foreign language in Hong Kong. Two hundred and seventy-four Hong Kong kindergartners were assessed on their interest in learning English and their English language skills (i.e., expressive and receptive vocabulary). Their parents completed questionnaires eliciting family socio-economic status, parental beliefs, and home learning environment. The results indicated that (1) interest was related to children's English language abilities after controlling for children's gender, non-verbal intelligence, and kindergarten type; (2) parents' beliefs about their child's English ability and self-efficacy were related to children's interest in learning English; and (3) interest uniquely contributed to children's English language ability in the home environment. The present findings provide evidence of the active role that children play in their second/foreign language development and highlight the significant influence of parental beliefs on children's interest in learning English.

摘要

本研究以香港為背景，探討興趣、家庭環境與幼兒英語作為第二語或外語發展之間的關繫。研究測量了274名香港幼稚園學童對學習英語的興趣及其英語語言能力（即表達性及接收性詞匯）。幼兒的家長填寫了有關家庭社經地位、家長信念和家庭學習環境的問卷。研究結果顯示：(1) 在控制了幼兒的性別、非語言智力和幼稚園類型等條件後，學習興趣與幼兒的英語語言能力相關；(2) 家長對其孩子英語能力的信念和自我效能感與幼兒學習英語的興趣相關；(3) 學習興趣在家庭環境中對幼兒的英語語言能力有獨特的貢獻。本研究的結果表明幼兒的學習興趣在其第二語或外語發展中發揮著積極作用，並強調家長信念對幼兒的英語學習興趣有著關鍵的影響。

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Keywords: Interest; home environment; parental beliefs; family SES; English as a second/foreign language development

Early language development lays the foundation for later language and literacy achievement (Scarborough et al., 2009; Whitehurst & Lonigan, 1998). The development of language proficiency from as early as 2–4 years old acts as a precursor for the acquisition of preliteracy skills and linguistic comprehension, which forms a crucial basis for later literacy development (Bialystok, 2002; Dixon, Chuang et al., 2012; Oakhill & Cain, 2012; Scarborough, 1990; Scarborough & Dobrich, 1994; Storch & Whitehurst, 2002). According to the lexical restructuring hypothesis (Walley et al., 2003), vocabulary – a critical language skill – is a prerequisite skill for the development of phonological awareness. It has been found that environmental influences can impact the development of phonological awareness only when young children’s vocabulary reached a certain threshold (Dixon, Chuang et al., 2012). Therefore, it is necessary to understand the potential factors that may influence language acquisition in the early years (Goodrich et al., 2021).

Language development occurs within social contexts (Clark, 2017). Before formal schooling, the home environment is one of the most critical language-learning contexts for young children (Frijters et al., 2000; Sénéchal & LeFevre, 2014; Tse et al., 2017). However, children are not passively shaped by their environment, and children’s characteristics can interact with their surrounding environment to influence developmental outcomes (Bronfenbrenner & Morris, 2006). Interest, for example, has long been identified as a strong predictor of children’s learning and development (Hidi, 1990; Schiefele, 1991). More specifically, there is evidence showing that interest is linked to young children’s language acquisition and further, functions as an underlying mechanism in the relationship between the home environment and children’s language development (Farver et al., 2006; Malin et al., 2014).

However, previous research on interest and early language development has mostly been concerned with first language (e.g., Lukie et al., 2014; Malin et al., 2014). There is a paucity of studies investigating the extent to which interest contributes to young children’s second/foreign language (S/FL) development, especially in Asian contexts (Zhang et al., 2021). Considering the prevalence of English as a second/foreign language (ESL/EFL) learning in the pre-school period in Asia and the importance of English language proficiency in academic achievement and career opportunities (Butler, 2015; Choi et al., 2019; Kirkpatrick & Liddicoat, 2020), this is an important research gap, which needs to be addressed. Further, even less is known about the influence of interest in S/FL learning in the home environment on early S/FL development. As children’s characteristics can interact with home environmental factors in shaping their own development (Bronfenbrenner & Morris, 2006), interest needs to be examined within the home environment when investigating its influence on a child’s development. Therefore, the present study aims to examine (1) the extent to which interest contributes to young Chinese children’s language development in ESL/EFL; (2) how the home environment relates to young Chinese children’s interest in ESL/EFL learning; and (3) the potential effect of the interaction between the home environment and interest on young Chinese children’s language development in ESL/EFL.

Interest

Interest is generally defined as a personal preference for particular objects or activities (Renninger, 2000; Schiefele, 1991). Researchers have differentiated two types of interest: situational interest and individual interest (Hidi, 1990; Schiefele, 1991). Situational

interest refers to a positive response triggered by certain environmental stimuli, which is often transient and thus cannot promote substantial learning or development (Johnson et al., 2004). In contrast, individual interest is an ongoing and stable personal predilection for a specific subject, which is characterised by positive attitudes, full engagement, predictable task orientation, and an increasingly enriched knowledge base (Renninger, 2000). Individual interest has been found to account for significant variances in children's achievement (e.g., Hidi & Renninger, 2006).

Schiefele (1991) identified two components of interest: a feeling-based component and a value-based component. The feeling-based component is mainly concerned with positive feelings or affect, which reflect the extent to which a child may find joy in a certain activity or event. The value-based component refers to the perceived importance attached to particular objects. Given that individual interest has more significant and long-term effects on children's development than situational interest (Hidi & Renninger, 2006; Renninger, 2000), and that our participants – three- to four-year-old children – may not be able to build the relevant knowledge and recognise the personal significance of the target object that forms the basis of value-based interest (Schiefele, 1991), the operational definition of interest employed in the current study mainly focuses on individual interest and the feeling-based component.

Children can exhibit interest in particular domains as early as within the first year of life (DeLoache et al., 2007), and such early interest is a significant mental resource for children's learning and development (Hidi, 1990; Schiefele, 1991). Interest can motivate children to engage in learning activities, enhance and maintain children's attention, improve children's memory, and influence various aspects of information processing (Renninger, 2000). Existing studies have established the association between young children's interest and early literacy development (Baroody & Diamond, 2012; Carroll et al., 2019; Scarborough & Dobrich, 1994). The evidence specifically related to language development tends to be less, though there are preliminary findings showing that young children's interest in reading as early as 27 months could predict their later expressive language development (Deckner et al., 2006).

Interest, as a product of the interaction between the child self and the environment, can be stimulated and sustained through both internal and external factors (DeLoache et al., 2007; Hidi & Renninger, 2006; Johnson et al., 2004). According to the four-phase model of interest development (Hidi & Renninger, 2006), the development of interest is a cumulative process originating in transitory situational interests and, if maintained, develops into a stable and enduring predisposition. During the process, the home environment, as the most immediate learning context for young children, can be particularly important in terms of its role in cultivating and deepening the development of children's interest (Hume et al., 2015; Johnson et al., 2004). Various factors within the home environment are found to influence children's learning interest. For instance, research indicates that children from an enriched home learning environment (HLE), with various home literacy activities and developmentally appropriate learning materials, tend to show higher levels of literacy interest (Baker & Scher, 2002; Hume et al., 2015; Lonigan, 1994). In addition, children whose parents value the importance of home learning opportunities and hold positive beliefs about literacy activities and their children's abilities are more likely to have a strong interest in language and literacy learning (DeBaryshe, 1995; Weigel et al., 2006).

Although existing studies primarily investigated the influences of the home environment on young children's literacy interest or children's interest in their first language learning in Western contexts (e.g., DeBaryshe, 1995; Frijters et al., 2000; Hume et al., 2015; Weigel et al., 2006), Choi and her colleagues conducted a series of studies on young Korean children's interests in EFL learning which indicated that parental beliefs and motivation, as well as home English learning experiences such as parent-child English

interaction and provision of home learning activities and materials were related to young children's interest in English learning (Choi et al., 2019; Choi et al., 2020; Choi et al., 2022). However, these findings should be considered as preliminary in Asian contexts given that the studies were all conducted in Korea and focused only on specific aspects of parental beliefs (i.e., maternal motivation for providing English education) and HLE (i.e., home English interactions). As interest is a content-specific concept (Hidi & Renninger, 2006), the evidence built on young children's literacy interest or interest in first language learning cannot be directly generalised to young children's interest in S/FL. The relationship between the home environment and interest in learning ESL/EFL, especially in Asian contexts, needs to be further explored.

Home environment and young children's language development

Various aspects of the home environment have been found to exert significant and long-term influences on young children's language development (Attig & Weinert, 2020; Lopez, 2021; Peterson et al., 2019; San San Kyaw et al., 2019). According to bioecological theory (Bronfenbrenner & Morris, 2006), the home environment functions as a complex system within which both proximal and distal processes exist to influence children's development. Proximal processes, referring to the interactions between the developing child and the people, objects, or symbols in the child's immediate environment, are regarded as the primary mechanisms underlying children's development. The HLE is examined most in the understanding of the relationship between proximal processes and children's development (e.g., Rodriguez & Tamis-LeMonda, 2011; Son & Morrison, 2010). The HLE is a multifaceted concept with various components (Yeung & King, 2016). For example, home learning activities, especially language-related activities (e.g., singing songs, watching educational TV programs, and playing language games) and informal literacy activities (i.e., meaning-oriented literacy experiences), have been widely found to be associated with young children's language development, both in the first language (e.g., Dickinson et al., 2012; San San Kyaw et al., 2019; Sénéchal & LeFevre, 2002, 2014), and in S/FLs (e.g., Chow et al., 2010; Dixon, Wu et al., 2012; Yeung & King, 2016).

Home learning resources – the availability of reading materials at home is another unique factor in the HLE to facilitate young children's language development (Georgiou et al., 2021; Goodrich et al., 2021; Johnson et al., 2008; Liu et al., 2018; Yeung & King, 2016). Compared to parent-led learning activities, home literacy materials may provide children with opportunities to actively engage in language learning experiences (Georgiou et al., 2021). Home language use is also important for children's language learning (Dixon et al., 2012). However, mixed results have emerged in investigations into home language use and S/FL development. While studies in Asian contexts have found positive effects of home English use on young children's language development in ESL/EFL (Dixon, Wu et al., 2012; Dulay et al., 2017), such relationships have not been identified among ESL learners in English-dominant contexts (Cha & Goldenberg, 2015; Place & Hoff, 2011). The inconsistent findings may be due to the distinctions between English-dominant contexts and ESL/EFL language contexts in terms of English language input in the social environments (Dulay et al., 2017; Håkansson & Håkansson & Norrby, 2010; Oller & Eilers, 2002). It is noted that although HLE is assumed to influence children's development directly, there is preliminary evidence showing that children's learning interest can mediate the association between HLE and early language development (Farver et al., 2006). In other words, a rich HLE may stimulate children's learning interest, and children with higher interest may have better achievements in language acquisition.

Distal processes, on the other hand, refer to factors that tend to affect children's development indirectly, such as family demographics and parents' characteristics (Bronfenbrenner & Morris, 2006). In this study, we focused on two distal factors in the home environment – family SES (i.e., Socioeconomic Status) and parental beliefs – which are empirically and theoretically believed to influence children's language acquisition through their effects on the HLE: families with higher SES backgrounds can provide their children with greater language exposure and more language learning opportunities and resources at home than their lower SES counterparts, and parents who hold positive beliefs about supporting young children's language development tend to enable a rich HLE, which in turn influences children's language developmental outcomes (e.g., Hoff, 2013; Hoff & Tian, 2005; Huttenlocher et al., 2010; Hwang et al., 2020; Jiang et al., 2023; Pace et al., 2017; Ronderos et al., 2021). However, there seems to be additional factors that link family SES or parental beliefs to young children's language development. The review conducted by Pace et al. (2017) indicated that children's characteristics can be a significant source underlying the influences of family SES on young children's language development. Considering the positive associations between family SES/parental beliefs and children's learning interest (Baker & Scher, 2002; Cheung et al., 2018; Choi et al., 2019) and further, between interest and children's developmental outcomes (Baroody & Diamond, 2012; Bracken & Fischel, 2008; Deckner et al., 2006), it is possible that children's interest in S/FL learning may be a potential mechanism underlying the relation between distal processes (e.g., family SES and parental beliefs) and language developmental outcomes.

In summary, both proximal and distal factors in the home environment are found to influence young children's language development. Consistent with the bioecological model (Bronfenbrenner & Morris, 2006), previous findings provide support on the direct correlations between multiple components of the HLE (i.e., proximal factors in the home environment) and early language acquisition, as well as the indirect association between family SES and parental beliefs (i.e., distal factors in the home environment) and young children's language growth through the HLE. However, it is noted that parents' learning-support practices and beliefs, as well as their connections with children's language development, can be shaped by sociocultural contexts (Cha & Goldenberg, 2015; Davis-Kean & Sexton, 2009; Dulay et al., 2017; Oller & Eilers, 2002; Riches & Curdt-Christiansen, 2010). Furthermore, there is evidence showing that the function of proximal factors (i.e., HLE) on early language development may be further mediated by children's learning interest, which can also act as a source of the underlying mechanism of distal factors (i.e., parental beliefs and family SES) on language developmental outcomes.

The current study

Research indicates that interest can contribute to young children's learning and development (Carroll et al., 2019; Deckner et al., 2006; Renninger, 2000). Additionally, it may play a role in the influences of the home environment – one of the most critical early learning contexts – on young children's language developmental outcomes (Farver et al., 2006; Malin et al., 2014). However, the existing evidence has been mostly built on emergent literacy (e.g., Baroody & Diamond, 2012; Carroll et al., 2019; Scarborough & Dobrich, 1994), first language development (e.g., Farver et al., 2006), and Western contexts (e.g., Malin et al., 2014). Despite the significance of early language acquisition and the prevalence of ESL/EFL education in Asian contexts, there is a lack of studies investigating the role of interest in young Asian children's language development in

ESL/EFL, especially within the home environment. Considering that the impacts of interest on developmental outcomes can be domain-specific (Deckner et al., 2006; Lukie et al., 2014) and that sociocultural contexts may influence the associations between home factors and children's development (Davis-Kean & Sexton, 2009; Riches & Curdt-Christiansen, 2010), this research gap is important and necessary to address. Therefore, this study aims to address the following research questions:

- (1) To what extent does young Chinese children's interest in learning English contribute to their English language development after controlling for children's gender, non-verbal intelligence, and the type of kindergarten that they attend?
- (2) What home environmental factors contribute to young Chinese children's interest in learning English?
- (3) Does young Chinese children's interest in learning English uniquely contribute to their language development in ESL/EFL after taking into account the home environment? Furthermore, does interest mediate the associations between home environmental factors and young Chinese children's English language development?

Based on existing literature, we predicted that (1) interest would make a significant contribution to young Chinese children's language development in ESL/EFL; (2) both proximal processes (i.e., the HLE) and distal processes (i.e., family SES and parental beliefs) would influence children's interest in learning English; and (3) interest and the home environment would uniquely and jointly influence young children's English language development. More specifically, both HLE and interest would mediate the relationship between distal processes in the home environment (including parental beliefs and family SES) and children's English language development, and interest would further mediate the relationship between HLE and young children's English language development.

The current study was conducted in Hong Kong. Hong Kong is considered to be in both an ESL and EFL context (Li, 2017). English is one of the official languages in Hong Kong and is used in various social contexts, including education, government, the mass media, and law (Kirkpatrick & Liddicoat, 2020). However, Chinese is predominantly used in society, and English to some extent, functions as a foreign language as well (Li, 2017). Similar to many other Asian countries and societies, English is highly valued in Hong Kong and is introduced in schools from as early as the pre-school years (i.e., 3- to 6-year-old) (Lau & Richards, 2021). Some Hong Kong parents also attach great importance to their children's English language development and tend to provide their children with various types of English language support, such as private English language tutoring, English-speaking domestic helpers, and home English language resources and activities (Li, 2017).

We sampled 3- to 4-year-old Chinese children from K1 kindergarten classrooms (i.e., the first year of kindergarten). Language acquisition begins early in life, and the significance of language development on later achievement can be identified between 2 and 4 years old (Scarborough, 1990; Storch & Whitehurst, 2002). Moreover, an age-related decrease in the ability of acquiring a S/FL has been reported from 4 to 6 years old (Berk, 2013; Newport et al., 2001) and thus, investigating the environmental influences on S/FL development in early stages (e.g., 3-4 years old) can be important and necessary. Furthermore, it is common for Hong Kong children to receive a certain degree of English exposure both at home and in kindergarten from as early as 3-4 years

old (i.e., K1 level) (Forey et al., 2016; Li, 2017). Considering that the current study focuses on the home environment and young Chinese children's English development, K1 level can be an appropriate period to investigate home influences and minimise the potential confounding effects of school experiences compared to higher kindergarten levels. For English language abilities, we assessed children's expressive and receptive vocabulary, which are most commonly used as an index of language developmental outcomes among studies investigating ESL/EFL development in Asian contexts (see a review Zhang et al., 2021).

Method

Participants

Two hundred and seventy-four Hong Kong kindergarten children (126 girls, $Mean_{age} = 3;11.11, SD = 3.65$) and their parents participated in the study. The participating children were recruited from 28 kindergartens located in three districts of Hong Kong (i.e., 9 in Hong Kong Island, 9 in Kowloon, and 10 in the New Territories). Kindergartens in Hong Kong provide services for 3- to 6-year-old children and can be categorised as being either non-profit-making or private independent depending on the nature of the sponsoring organisations (i.e., non-profit agencies or private enterprises). Kindergartens can also be classified as local or international. Local kindergartens follow the local curriculum and English is taught as a subject, while Chinese is the main language of instruction. International kindergartens generally offer bilingual/trilingual (i.e., Cantonese, Putonghua, and English) programs. Most of the participating kindergartens ($N = 24; 86\%$) were local non-profit making kindergartens, while four were private independent and international kindergartens.

The participating children were ethnic Chinese and were in their first year of kindergarten (i.e., K1 class for 3-to 4-year-olds). Most of the children's parents (71%) had completed secondary school education or held a higher diploma, 28% had completed undergraduate education or above, and less than 1% of the parents had only completed primary school. The family monthly income ranged from less than HK\$10,000 per month (4%) to more than HK\$100,000 per month (8%). More than one-third of the families earned either HK\$10,000–29,999 per month (36%) or HK\$30,000–59,999 per month (36%). 11% of the families earned HK\$60,000–79,999 per month, and 5% earned HK\$80,000–99,999 per month.

Procedure

The data used in the current study were from a larger, longitudinal project on the role of the home and school in Hong Kong children's English development. Ethical approval was obtained from the Human Research Ethics Committee of the authors' university before data collection. Consent forms were signed by the participating kindergarten principals, teachers, and parents, and oral assent was obtained from the participating children. Parents completed questionnaires that collected information on family demographics, parents' beliefs about supporting their young children's English development, and HLE. The questionnaires were distributed and collected through the kindergarten teachers in sealed envelopes.

Children were assessed on their English language abilities (i.e., English expressive and receptive vocabulary), non-verbal intelligence, and interest in learning English. The

assessments were conducted in a quiet place in the kindergartens by trained assessors who had experience in early childhood education. The duration of the assessment for each child was about 20–30 min.

Measures

Family SES background

Family SES background was assessed using two indicators: parents' educational attainment and household monthly income. Both mother's and father's highest educational attainment was measured on a 7-point Likert scale (1 = primary school, 2 = junior high school, 3 = senior high school, 4 = higher certificate, 5 = bachelor's degree, 6 = master's degree, and 7 = doctoral degree). Household monthly income was measured on a 10-point Likert scale ranging from 1 = less than HK\$4,000 to 10 = more than HK\$100,000, with increments of HK\$9,999 (except 1 = less than HK\$4,000, and 2 = HK\$4,000-9,999). An average score was calculated for maternal and paternal educational attainment. Standardised z-scores were computed for parents' average educational attainment and household monthly income. A composite score of the z-scores was calculated and used as the index of family SES.

Parents' beliefs about supporting young children's English development

The Parent English Language Belief and Attitude Questionnaire (PELBA-Q; Zhang & Lau, 2022) was employed to assess parents' beliefs about supporting their young child's English development. The PELBA-Q was developed based on the Theory of Planned Behaviour (Ajzen, 2012) and aimed at assessing parental beliefs about, and attitudes towards, supporting young children's ESL/EFL development. The questionnaire consists of four factors: (1) Perceived importance of the home environment (e.g., "I think the home environment is important for my child's English learning"); (2) Perceived child's English ability and self-efficacy (e.g., "In general, I think my child is good at English"; "I am very confident that I can support my child in learning English very well"); (3) Normative beliefs (e.g., "When it comes to supporting my child's English learning, some people's/books'/organizations' opinions and suggestions are important to me [e.g., other parents, friends, colleagues, teachers, experts, educational books, school, or government guidelines]"); and (4) Control beliefs (e.g., "I think pre-schoolers are too young to learn English. I would like my child to learn English after he/she enters primary school").

According to the Theory of Planned Behaviour (Ajzen, 2012), the first two factors (i.e., perceived importance of the home environment and perceived child's English ability and self-efficacy) constitute behavioural beliefs, which refer to an individual's perceptions of the consequences of the target behaviour and their overall feelings towards the perceived consequences. Behavioural beliefs are assumed to exert the most significant influence on the prediction of the target behaviour (Ajzen, 2012). Normative beliefs refer to the perceived expectations or behaviours of important others, such as the practices of other parents; the suggestions from teachers or schools; and the recommendations from curriculum guidelines, relevant experts or reference books; as well as the willingness to comply with such expectations or practices. Control beliefs refer to the beliefs that may hinder people from engaging in the target behaviour and thus exert a negative effect on the prediction of the behaviours. For the current study, we included three of the factors – perceived importance of the home environment, perceived child's English ability and self-

efficacy, and control beliefs. We did not include the factor of normative beliefs because more than 90% of the participants tend to agree with the items under this factor and the lack of variability can constrain its ability to produce meaningful information for further data analysis. It makes sense given that Hong Kong parents tend to value the importance of young children's English language acquisition, and kindergartens, education books, or government policies and documents in Hong Kong (potential important referents) generally encourage early ES/FL acquisition (Leung et al., 2013). The items of the questionnaire are rated on a 7-point Likert scale (i.e., from 1=strongly disagree to 7=strongly agree). The Cronbach's alpha reliability for the three factors ranged from .75 to .89.

HLE. Several aspects of HLE were assessed by the questionnaire developed by Lau and Richards (2021) in Hong Kong: (1) the frequency of home English learning activities (e.g., reading English language books, English storytelling, playing English games, and singing English songs); (2) the number of English books at home; and (3) home language use. The frequency of engagement in each of the home English learning activities was rated on a 7-point Likert scale ranging from 0 (Never) to 6 (Daily). The number of English books available in the home was coded on a 7-point Likert scale (0 = none, 1 = 1–20, 2 = 21–40, 3 = 41–60, 4 = 61–80, 5 = 81–100, 6 = more than 100). Home language use was coded as either (1) Chinese only or (2) English is (at least) one of the main home languages. The Cronbach's alpha reliability was 0.70 for the current sample.

Child assessment

Interest. To assess children's interest in learning English, an interview was conducted with each child following the procedure suggested by Marsh et al. (1998). During the interview, each child was asked about their feelings towards five common English learning activities (i.e., reading English books, watching English TV programs, listening to English stories or songs, speaking English with other people, and learning English). Children were first asked a binary question (e.g., "Do you like reading English books or not?") and were expected to give a "yes" or "no" response. Based on the response to the first question, the assessor further asked the child the extent to which he/she liked or disliked the activity. "Dislike it a lot" was coded as 1, "Dislike it a little" as 2, "Like it a little" as 3, and "Like it a lot" as 4. The maximum score was 20. If the child did not respond (i.e., either to the first or the second question), the assessor explained the question further and asked once more. If the child was still unable to respond, the non-response was treated as missing data. The assessment shows acceptable reliability in our sample (Cronbach's $\alpha = 0.74$).

English Language. Receptive vocabulary. Two subsets of the Peabody Picture Vocabulary Test-IV (PPVT-4, Dunn & Dunn, 2007) were employed to assess receptive vocabulary. The assessors presented four pictures to the child each time and pronounced a word. The child was asked to select one of the four pictures that corresponded to the word presented. There were 2 training items and 24 test items. Each correct answer was awarded one point, and the maximum score was 24. The Cronbach's alpha reliability in our sample was 0.86.

Expressive vocabulary. For the assessment of English expressive vocabulary, the Expressive Vocabulary Test-II edition (EVT-2; Williams, 2007) was employed. The assessor presented one picture to the child each time and asked a stimulus question (e.g., what do you see?). The child was expected to answer the question using a word

corresponding to the picture presented. There were 20 items in total. Each correct response was given one point, and the maximum score was 20. The Cronbach's alpha reliability was 0.94 in this sample.

Non-verbal Intelligence. The Raven's Coloured Progressive Matrices (Sets A and B; Raven et al., 1995) were used to assess non-verbal intelligence. The child was presented with a matrix-like pattern, which included one missing part and was asked to choose one piece out of six options to complete the pattern. There were 24 items, and each correct answer was given one point. The maximum score was 24. The Cronbach's alpha reliability in our sample was 0.63.

Statistical analysis

For data screening, we first deleted cases with more than 35% missing values ($N = 4$). Then, we examined the pattern and distribution of the missing data. Five variables had missing data, and a total of 0.5% of the values were missing. No systematic missing pattern was identified. Based on the results of Little's MCAR test, the data were missing completely at random (MCAR) ($p > .05$). In the following statistical analyses, we employed full information maximum likelihood (FIML; Arbuckle, 1996) to deal with missing data. Afterwards, as latent variables were involved, we conducted descriptive analysis and examined the correlational relationships between the variables in Mplus 8.3 (Muthén & Muthén, 2017). In addition, we conducted confirmatory factor analysis (CFA) for the latent variables (i.e., English language outcomes and parental belief factors).

To examine the hypothesised model of interest, the home environment, and young children's ESL/EFL development (see Figure 1), we conducted structural equation modelling in Mplus 8.3 with Maximum Likelihood (ML) estimation procedure. In the model, children's gender, nonverbal intelligence, and kindergarten type were treated as control variables, which are beyond the scope of the current study but can potentially influence children's English language development, especially in the Hong Kong context (e.g., Eriksson et al., 2012; Lai-Reeve et al., 2018; van der Schuit et al., 2011). The model was specified such that parental beliefs (i.e., perceived importance of the home environment, perceived child English ability and self-efficacy, and control beliefs) and family SES served as both direct and indirect predictors of young Chinese children's interest in learning English and their English language developmental outcomes through HLE (i.e., home English learning activities, home language use, and home English book resources). Further, children's interest in learning English was treated as a predictor of English language outcomes, as well as a mediator in the relationship between home environmental factors (i.e., HLE, parental beliefs, and family SES) and English language development. We used the standard suggested by Hu and Bentler (1999) to evaluate the model fit: comparative fit index (CFI) ≥ 0.90 ; root Tucker-Lewis Index (TLI) ≥ 0.90 ; mean square error of approximation (RMSEA) ≤ 0.08 ; and standardised root mean square residual (SRMR) ≤ 0.10 . Further, we examined the mediation effects of interest or home variables using the bootstrapping technique with 5000 resamples (Preacher & Hayes, 2008).

Results

Correlation and regression analysis

The results of the correlational analysis (Table 2) showed that interest was positively related to English language development ($r = .25, p < .01$). Four factors in the home environment were related to children's interest in learning English. Specifically, parents'

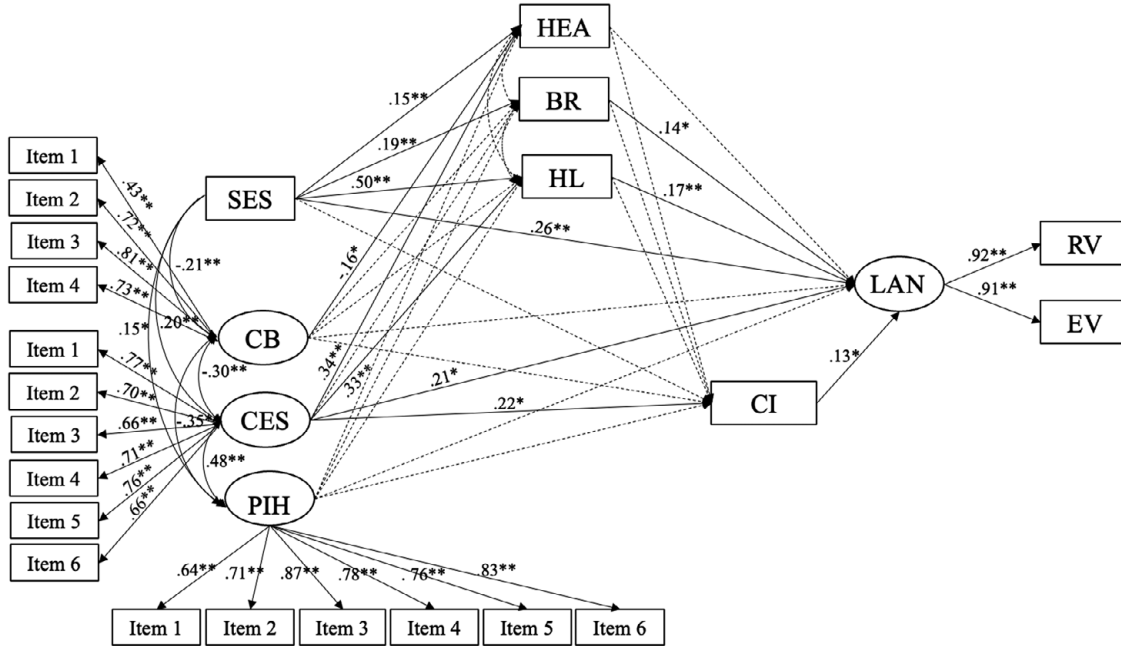


Figure 1. The Model Depicting Relations Between Home Environment, Interest, and Young Chinese Children's English Language Development.

Notes. * $p < .05$; ** $p < .01$; Lan = English language outcomes; RV = receptive vocabulary; EV = expressive vocabulary; PIH = Parents' perceived importance of the home environment; CES = Parents' perceived child's English ability and self-efficacy; CB = control beliefs; HEA = Home English activities; HL = home language use; BR = English book resources; SES = family SES; CI = children's interest in learning English; Children's gender, non-verbal intelligence, and the type of kindergartens were controlled in the model.

perception of their child's English ability and self-efficacy displayed the strongest correlation with interest ($r = .23, p < .01$), followed by home English learning activities ($r = .18, p < .01$). Parental beliefs about the importance of the home environment and home language use were also related to children's interest in learning English, but the correlational coefficients were relatively small ($r = .15, p < .05$; $r = .12, p < .05$). English language outcomes were correlated with all the HLE factors (i.e., home English learning activities, home English book resources, and home language use) ($r_s = .37 - .40; p_s < .01$) and family SES ($r = .50; p < .01$). Regarding parental beliefs, English language was positively related to parents' perception of their child's English ability and self-efficacy ($r = .43; p < .01$) and parents' beliefs about the importance of the home environment ($r = .19; p < .01$) but negatively associated with parents' control beliefs ($r = -.29; p < .01$).

Structural equation modelling analysis

To investigate the relationship between interest, the home environment, and young Chinese children's English language development, we examined the SEM (i.e., Structural Equation Modeling) model outlined above (see Figure 1). The model fit indices

Table 1. Descriptive statistics

	Mean	SD	Min	Max	Skewness	Kurtosis
Child interest	3.36	.41	1	4	-1.36	1.75
Receptive vocabulary	17.08	4.96	5	24	-.39	-.98
Expressive vocabulary	11.92	6.31	0	20	-.26	-1.21
Home English activities	52.17	38.81	0	190	.93	.44
Home language use	.19	.40	0	1	1.54	.37
Family SES	.01	.81	-1.65	2.23	.48	-.64

Table 2. Correlations for the home environment, interest, and English language development

	1	2	3	4	5	6	7	8
1. Interest								
2. English language	.25**							
3. HEA	.18**	.37**						
4. HL	.12*	.40**	.27**					
5. BR	.05	.40**	.28**	.22**				
6. PIH	.15*	.19**	.29**	.20**	.24**			
7. CES	.23**	.43**	.42**	.37**	.20**	.45**		
8. CB	-.06	-.29**	-.33**	-.18**	-.20**	-.36**	-.29**	
9. Family SES	.08	.50**	.26**	.26**	.52**	.14*	.18**	-.22**

Notes. * $p < .05$; ** $p < .01$; HL=Home language use; HEA=home English activities; BR=Number of English book resources; PIH=Parents' perceived importance of the home environment; CES=Parents' perceived child's English ability and self-efficacy; CB=Control beliefs

Table 3. Total, direct, and indirect effects of parental beliefs and family SES on English language development

Effects	Estimate	SE	95%CI	
CES				
Total effects of CES on Lan	.33**	.08	[.20	.46]
Direct effects of CES on Lan	.21*	.08	[.07	.34]
CES→HL→Lan	.06**	.02	[.03	.10]
Family SES (SES)				
Total effects of SES on Lan	.46**	.06	[.36	.55]
Direct effects of SES on Lan	.26**	.07	[.15	.36]
SES→HL→Lan	.03*	.01	[.01	.06]
SES→BR→Lan	.07*	.03	[.02	.13]

Note.: HEA = Home English activities; HL = Home language; BR = Home English book resources; Lan = English language outcomes; * $p < .05$; ** $p < .01$

were acceptable ($\chi^2 = 454.4$, $df = 258$, $p < .01$; $RMSEA = .05$, $90\%CI = [.05, .06]$; $CFI = .93$; $TLI = .91$; $SRMR = .06$). The values for the endogenous variables were 7% for children's interest in learning English, 45% for English language outcomes, 18% for home language use, 30% for home English book resources, and 26% for home English learning activities. The results showed that, after controlling for children's gender and non-verbal intelligence, as well as the type of kindergarten, children's interest in learning English was significantly related to English language outcomes ($\beta = .13$, $p < .05$). Among all the home environmental factors, only parents' perceptions of their child's English ability and self-efficacy were associated with children's interest in learning English ($\beta = .22$, $p < .05$). The expected indirect paths from parents' beliefs or family SES to interest through HLE were not significant.

For the relationship between the home environment and English language outcomes, two distal factors (i.e., parents' perceptions of their child's English ability and self-efficacy, and family SES) ($\beta_s = .21 - .26$, $p < .01$ or $p < .05$) and two HLE factors (i.e., home language use and English book resources) ($\beta_s = .14 - .17$, $p < .01$ or $p < .05$) were correlated with English language developmental outcomes. Further, family SES is indirectly related to English language outcomes through its effects on home language use ($\beta_{ind} = .03$, $S.E. = .01$, $p < .05$; $95\%CI = [.01, .06]$; 7% of the total effects) and English book resources ($\beta_{ind} = .07$, $S.E. = .03$, $p < .05$; $95\%CI = [.02, .13]$; 15% of the total effects). Similarly, parents' perception of their child's English ability and self-efficacy was indirectly associated with English language outcomes through home language use ($\beta_{ind} = .06$, $S.E. = .02$, $p < .01$; $95\%CI = [.03, .10]$; 17% of the total effects). However, the direct effects of family SES and parental beliefs on English language outcomes accounted for the majority of the total effects (i.e., 69% and 62%, respectively). The indirect effects of home variables on English language development through children's interest in learning English were not identified.

Discussion

The present study investigated the relationship between interest, the home environment, and young Chinese children's language development in ESL/EFL. The results indicated

that (1) interest contributed to the young Chinese children's English language development after controlling for children's gender, non-verbal intelligence, and the type of kindergarten; (2) among the various home factors, only parents' perceptions of their children's English ability and self-efficacy were related to children's interest in learning English; and (3) in the home environment, interest uniquely contributed to English language outcomes. The findings are broadly aligned with previous research and theoretical assumptions, which highlight children's active role in their development (e.g., Bronfenbrenner & Morris, 2006; Scarborough & Dobrich, 1994; Whitehurst & Lonigan, 1998). However, some of our findings are inconsistent with the existing literature, especially concerning the interaction between the home environment and interest. This study may shed light on the complexity of the home environment in terms of its contribution to S/FL development.

Interest and language development in ESL/EFL

The present study indicated that, after controlling for children's gender, non-verbal intelligence, and kindergarten type, interest was significantly related to young Chinese children's English language outcomes. This finding seems to be contrary to many of the previous studies which show that interest was mostly associated with young children's literacy outcomes but was not or only modestly related to language development (e.g., Baroody & Diamond, 2012; Carroll et al., 2019; Deckner et al., 2006; Frijters et al., 2000). The mixed results may stem from the different measurements of interest. Previous research tended to focus exclusively on literacy interest and assessed young children's interest by asking them about their feelings or rating their affective responses towards literacy/print-focused activities (e.g., reading books, visiting the library, learning about the names of letters) (e.g., Baroody & Diamond, 2012; Carroll et al., 2019; Deckner et al., 2006; Frijters et al., 2000). In contrast, the current study was based on the most common English learning activities for 3–4-year-old Chinese children in Hong Kong, which includes both literacy/print-focused activities (e.g., reading English books and learning English words/letters) and activities aimed at facilitating oral language development (e.g., speaking English with others; listening to English songs; and watching English TV programs).

This seems to imply that interest, as a content-specific concept, can contribute to specific domains of children's language and literacy development (Deckner et al., 2006; Lukie et al., 2014). In addition to the relationship between interest and literacy development in early childhood, the present study provides support to the contribution of interest on young children's language development. Further, the differing findings between previous studies and the current study may suggest that future research should adopt more fine-grained measurements of interest to investigate the role of interest in distinct areas of early language and literacy development.

Furthermore, as the present study focused on feeling-based interest, which reflects the level of children's enjoyment in English learning activities, the current findings highlight the importance of positive feelings in the process of learning English for early ESL/EFL acquisition. In other words, young children who enjoy and feel happy during English learning activities tend to have better language development outcomes in ESL/EFL. It has long been established that repeated practice and use of English facilitates oral language development (Cazden, 1972; Snyder-McLean & McLean, 1978), this finding may come from the fact that young children with higher interest in learning English would be more willing to use English, practice English, and be engaged in English learning activities. This

study also provides support to educational beliefs or tenets about young children learning through play – emphasising the significance of affective experiences in learning activities (Choi et al., 2019; Putman & Walker, 2010). Considering studies suggesting Asian children's gradual decrease in motivation and increased dissatisfaction in learning ESL/EFL (Butler, 2015), the current results may shed light on the importance of stimulating children's interest in the S/FL learning process. However, future research is necessary to further confirm the underlying mechanism of interest in young children's ESL/EFL development.

Home environment and interest

Among the various factors in the home environment, parents' perceptions of their child's English ability and self-efficacy were the only factors that significantly contributed to children's interest in learning English. This suggests that young children whose parents hold positive beliefs about their child's English ability and feel confident in supporting their child's English development have more interest in learning English. The importance of parental beliefs in promoting children's intrinsic learning interest in early childhood period seems to exceed that of providing material resources and learning opportunities at home. Our findings align with previous research demonstrating that parents' positive beliefs make unique contributions to children's interest and achievement (Baker & Scher, 2002). Parents' positive beliefs about their children's ability may promote the children's self-confidence (Frome & Eccles, 1998), which forms an important basis for children's learning interest (Aunola et al., 2002). Additionally, parents' beliefs may convey directly or indirectly through certain inter-generational mechanisms to their children, which influence children's interests and feelings (Baker & Scher, 2002).

Although previous studies have found that learning activities and resources provided by parents can stimulate and maintain children's interest in specific learning domains (Hume et al., 2015; Lonigan, 1994), the findings of the present study did not identify any HLE factors related to young Chinese children's interest in learning English. One potential reason for the mixed findings may be related to how interest is measured. A number of previous studies used the frequency of engagement in learning activities as an indicator of children's interest, based on the assumption that children with higher interest would engage more frequently in related activities (e.g., Hume et al., 2015; Lukie et al., 2014). However, such measurements may share conceptual overlaps with HLE itself, which is generally measured by including the frequency of engagement in various learning activities, and thus result in high correlations between interest and the HLE. Another reason may be related to the age group of the children under study. Young children and beginning learners naturally hold more positive perspectives on language and literacy learning compared to older learners (Baker & Scher, 2002). Consistent with previous research (e.g., Baker & Scher, 2002; Baroody & Diamond, 2012; Choi et al., 2019), the present study showed that the participating children, on average, exhibit high interest in learning English (as indicated by the high mean score and low standard deviations in the measurement of interest). Thus, it is possible that children's natural characteristics during this age period, rather than the external environment, constitute a major factor in influencing children's learning interest.

Furthermore, considering that the existing evidence on the HLE and interest is mainly obtained in Western contexts (e.g., Hume et al., 2015; Lonigan, 1994; Lukie et al., 2014), it is possible that sociocultural factors also play a role in the relationship between the HLE and children's learning interest. Sociocultural contexts within which the families are

located can largely shape how parents create and organise the HLE and the approach or methods they use when conducting learning activities (Anderson et al., 2010; Hoff & Tian, 2005; Janes & Kermani, 2001), which in turn can impact the relationship between the HLE and children's developmental outcomes (Sun et al., 2018; Zhang et al., 2021). Thus, future studies may consider making cultural comparisons to confirm the role of sociocultural factors in the associations between the HLE and young children's learning interest in ESL/EFL and further investigate the underlying influencing mechanisms. Moreover, it is important for future research to look beyond the categorical and quantitative aspect of home learning experiences, which cannot reflect how exactly the learning activities are conducted and how the learning resources are arranged and may obscure cultural and social differences in terms of their influences on young children's learning interest or motivation (Baker & Scher, 2002). Indeed, Malin et al. (2014) found that it was parents' reading quality, rather than reading frequency, that predicted children's reading interest. It is reasonable to assume that the process of the activities, especially affective-related experiences, determines the extent to which children enjoy the learning activities, which in turn largely affects children's interest. The insignificant results in the current study may also have resulted from our focus solely on the quantity, and not the quality, of home English learning activities.

Although family SES background has been found to influence various domains of children's development (e.g., Liu et al., 2018; Tse et al., 2017), we found no significant relationships between family SES and young children's interest in learning English. Young children from lower SES family backgrounds did not necessarily have less interest in learning English. Considering that interest can relate to language outcomes in ESL/EFL, this finding might imply that interest can act as a buffering factor for children from low-family SES backgrounds in ESL/EFL learning. Further, this finding may inform the design of interventions that enable parents, especially those from low SES backgrounds, to provide positive affective experiences in home English learning activities and cultivate children's interest in learning English so as to promote early ESL/EFL development.

Interest, home environment, and young Chinese children's language development in ESL/EFL

Both interest and home environmental factors made significant and unique contributions to young Chinese children's English language outcomes after controlling for children's gender, non-verbal intelligence, and the type of kindergarten. Surprisingly, the distal factors in the home environment (i.e., parental beliefs and family SES), rather than the proximal factors, were found to be the strongest predictors of English language outcomes. Consistent with the theoretical assumptions of the bioecological model (Bronfenbrenner & Morris, 2006), family SES and parental beliefs, as distal factors in the home environment, exert indirect influences on children's English language developmental outcomes through the proximal factors (i.e., the HLE). Families with higher SES backgrounds and parents who are more confident about their child's English learning abilities and their own abilities to support their child's English development tend to use more English language at home and provide more English book resources, which directly benefit young children's language development in ESL/EFL. This finding echoes previous research on young children's first language development or conducted in societies where the second language is the dominant social language (DeBaryshe, 1995; Hoff, 2013; Hwang et al., 2020).

However, in addition to their indirect influences through the HLE, the direct effects of parental beliefs and family SES on English language development accounted for more

than half of the total effects. There may be other factors apart from the HLE that underlie the relationship between family SES, parental beliefs, and young children's ESL/EFL outcomes. For example, Asian parents with higher SES and who hold stronger beliefs about supporting their child's English development are more likely to set aside significant resources for English learning including private English tutoring, extracurricular classes in English, and English language programs or activities (Butler, 2015; Choi et al., 2019). It is possible that the influencing mechanism of family SES backgrounds and parental beliefs on young children's ESL/EFL development goes beyond the provision of a rich home English learning environment, especially in ESL/EFL contexts. Future research may extend the scope of the current study and further explore the influencing mechanism of distal factors in the home environment (e.g., family SES and parental beliefs), other than the HLE, on young children's language development in S/FL learning. Such potential studies could have important implications for promoting parents' positive roles in stimulating young children's English language development in ESL/EFL contexts.

For the proximal factors in the home environment, consistent with Dixon et al. (2012)'s finding in Singapore, English-language use at home turned out to be the most significant factor related to young Chinese children's English language development. This finding may provide further support for the assumption that although using English at home may not be important for ESL children living in English-speaking societies (Cha & Goldenberg, 2015; Place & Hoff, 2011), it can be beneficial to the development of English language acquisition in ESL/EFL contexts. In addition, English book resources, rather than English learning activities at home, were found to be related to young children's English language outcomes. This is consistent with the findings obtained from both monolingual children and bilingual children, which indicated that access to learning resources makes unique contributions to children's language development (Georgiou et al., 2021; Yeung & King, 2016). Considering that factors such as parents' English proficiency levels, comfort level in using English, skills and knowledge of supporting children's English learning, and availability can all influence the extent to which English learning activities are provided at home (Dixon, Wu, et al., 2012; Lau & Richards, 2021), this finding may suggest that providing children with English learning materials can be an effective way to facilitate children's ESL/EFL learning. This implication may shed light on guiding parents' practices in supporting their children's English development at home, especially for families who are not able to organise rich home English learning activities. However, this finding should be considered preliminary given that we used only the number of English books as the index of home English learning resources. Future research should confirm these results by taking into account different English learning resources (e.g., electronic resources for English learning) and investigating the underlying mechanisms of the functions of home learning materials on young children's S/FL development.

Although the contributions of interest to young Chinese children's English language development were identified in the model, the expected interaction effects between the home environment and interest were not found. Interest and the home environment seem to be independent predictors of young children's language development (Carroll et al., 2019; Frijters et al., 2000). However, the insignificant interaction effects can be related to the participants' age (three- to four-year-old children naturally hold positive views on language learning) and the fact that the present study only focused on the quantitative aspects of the HLE. Malin et al. (2014) found that children's reading interest mediated the

relationship between the quality of parent–child reading (e.g., parents’ metalingual talk), but not the quantitative aspect (i.e., frequency), and young children’s vocabulary development. Therefore, the insignificant findings do not necessarily mean that the interaction between interest and the HLE does not exist in young children’s S/FL development. Future research should consider comparing different age groups and further investigating the potential interaction between interest and other aspects of the home environment (e.g., parent–child interactions during English-learning activities) on young children’s S/FL development.

Limitations and future directions

There are several limitations of the current study. First, the present study employed a cross-sectional design rather than a longitudinal design. Therefore, the relationships between interest, home environment, and English developmental outcomes identified in our study should be considered as correlational in nature, and causal relationships cannot be assumed. The present study found that parents’ perceptions of their children’s English ability and self-efficacy predicted the young Chinese children’s interest in learning English and their English language development. However, this finding can also be explained by children’s English language performance, which can affect parents’ beliefs about their child’s English ability. It is possible that parents feel more confident about their children’s English ability if their children have higher levels of English language achievement and show more interest in learning English. Thus, future longitudinal research that examines the causal relationship between home environmental factors and interest is necessary. Second, the present study only assessed young children’s feeling-based interest, which may not reflect the multifaceted nature of the concept of interest (Schiefele, 1991). As discussed previously, interest is a content-specific concept (Schiefele, 1991), and different components of children’s interest can potentially be related to distinct domains of children’s development. Future research could employ a more comprehensive measure of interest. Further, we assessed interest exclusively by child report interview method, which can be vulnerable to social desirability (Bergen & Labonté, 2020). Future research may consider using multiple reporting sources (e.g., parents’ questionnaires and observations) to obtain more subjective assessment results on young children’s interest in learning English.

Third, the current study only considered the influence of quantitative HLE factors (i.e., frequency) on young Chinese children’s interest and ESL/EFL development. It has been found that the quantity and quality of the home learning environment exert different influences on young children’s learning interest, as well as on their language and literacy outcomes (Deckner et al., 2006; Malin et al., 2014). Therefore, it is necessary for future research to investigate the potential interaction between the qualitative aspect of the home environment and children’s interest in early S/FL acquisition. Finally, the present study only sampled first-year kindergarten children in the Hong Kong context. Given the influence of sociocultural contexts on parents’ beliefs and practices, and the distinct features of different developmental periods (Bialystok, 2002; Riches & Curdt-Christiansen, 2010), it remains unknown whether the current findings can be generalized to other sociocultural contexts in Asia, and whether the influence of the home environment on children’s interest in learning English, as well as the role of children’s interest in S/FL development, changes with age. Future cross-cultural or longitudinal studies are needed to confirm the current findings in other Asian contexts and among different age groups.

Implications

The findings of the current study suggest that children play an active role in their own S/FL development. Specifically, the study found that young Chinese children's interest in learning English was related to their English language developmental outcomes. Given the prevalence of English language education for young children in the Asian context (Butler, 2015), the current findings highlight the importance of providing children with positive affective experiences in S/FL learning activities so as to cultivate their learning interest, which may in turn benefit their ESL/EFL achievement. In addition, the study found that parents' perceptions of young Chinese children's English ability and self-efficacy uniquely contributed to the children's interest in learning English and significantly predicted the children's English language outcomes. Thus, raising parents' awareness of the importance of developing positive views of their child's abilities, as well as their own abilities to support their child's English development, may be an effective way to enable parents to stimulate their children's interest in learning English and promote the children's English learning. The findings can also inform educational programs aimed at promoting young children's S/FL development through collaboration with parents. Furthermore, the study found that family SES was not a significant predictor of interest, though it was one of the strongest predictors of young Chinese children's English language outcomes. On the one hand, it may suggest that it is important for policy makers or educators to take actions to minimise the disparities between SES groups in early S/FL acquisition. On the other hands, the current findings imply that children's interest can possibly act as a buffering factor in the S/FL development of children from low SES families, and thus, interventions aimed at supporting young children from low SES backgrounds should consider cultivating children's interest in learning English.

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