

Article

Development and Validation of a Parent Belief and Preschoolers' Attitudes Questionnaire on Supporting Chinese Preschoolers' English as a Foreign Language Learning

Qingyun Li ¹, Kimberley Kong ^{2,*} and Qian Li ³¹ College of Liberal Arts, Chongqing Normal University, Chongqing 401331, China² School of Educational Studies, Universiti Sains Malaysia, George Town 11800, Malaysia³ School of Educational Studies, Chongqing College of International Business and Economics, Chongqing 401520, China* Correspondence: kimberley.kong@usm.my**How To Cite:** Li, Q., Kong, K., & Li, Q. (2026). Development and Validation of a Parent Belief and Preschoolers' Attitudes Questionnaire on Supporting Chinese Preschoolers' English as a Foreign Language Learning. *Studies of Applied Linguistics in Asia*, 1(1), 46–64. <https://doi.org/10.53941/sala.2026.100005>

Received: 15 April 2025

Revised: 5 August 2025

Accepted: 2 December 2025

Published: 24 March 2026

Abstract: The present study aimed to develop and validate a questionnaire assessing parents' beliefs, the home literacy environment, and their support for young children's English as a second/foreign language development—the Parents' Beliefs and Preschoolers' Attitudes toward English Learning Questionnaire (PBPAEL-Q). The PBPAEL-Q was initially piloted with 160 parents of kindergarten-aged children and subsequently validated with a sample of 405 parents in mainland China. A series of exploratory factor analyses and confirmatory factor analyses were conducted to explore the factor structure and evaluate model fit, resulting in a 51-item questionnaire with three factors: (1) parents' beliefs about the importance of early childhood English learning, (2) the English home literacy environment, and (3) preschoolers' English learning attitudes. The convergent and divergent validity of the PBPAEL-Q were supported by examining its relationships with parents' home practices and family characteristics. The PBPAEL-Q exhibited acceptable model fit indices and demonstrated good reliability and validity. The findings suggest that the PBPAEL-Q is a reliable and valid tool for measuring parents' beliefs and the home literacy environment related to young children's English as a second/foreign language development. It may also contribute to a deeper understanding of how parental beliefs influence home practices and children's attitudes toward English language learning.

Keywords: parents' beliefs; home literacy environment; English as a second/foreign language development; preschoolers' learning attitudes; questionnaire; validation

1. Introduction

In recent decades, there has been a growing global trend toward the increased prominence of the English language in various entrance exams (Butler, 2014; Garcia, 2015). English, recognized as one of the most widely used international languages, has become the preferred foreign language (FL) in China. Over the past two decades, the country has actively pursued the strategic goal of promoting English instruction at the primary school level (Butler, 2015). In emerging urban centers such as Beijing, Shanghai, and Guangzhou, a rising number of residents increasingly perceive foreign language acquisition as essential

for effective participation in international exchanges (Lai et al., 2024).

Research indicates that early exposure to second language or foreign language (SL/FL) learning offers significant advantages for later cognitive development. Furthermore, it has been widely observed that the ability to acquire a new language tends to become less efficient with age, as the optimal period for language learning gradually closes (Birdsong & Paik, 2008). Consequently, early childhood is recognized as a critical window for SL/FL acquisition. This understanding has led to a growing trend among Chinese parents, who increasingly recognize the value of introducing their preschool-age children to early language learning opportunities.



During early childhood, parental involvement plays a pivotal role in fostering language and literacy development in preschoolers (Van Bergen et al., 2017; Harris, 2013). The quality of parent-child interactions and a literacy-rich home environment contribute significantly to enriching preschoolers' language and literacy experiences. These factors have been identified as powerful predictors not only for the development of the first language but also for SL/FL acquisition (Dixon & Wu, 2014; Lau and Richards, 2021; Kam Tse et al., 2017).

Therefore, to enhance the English as a second/foreign language (ESL/EFL) development of Chinese preschoolers, it is essential to comprehend the role of parents and acknowledge the substantial influence of parental factors. This knowledge is not only informative but also pivotal for parents, practitioners, educators, and policymakers striving to promote positive outcomes in preschoolers' EFL development.

Within the realm of parental influences, parental beliefs (PB) emerge as a significant factor in the development of ESL/EFL in preschoolers (DeBaryshe et al., 2000; Riches & Curdt-Christiansen, 2010; Weigel et al., 2006). Primarily, PB significantly shape parental practices, influencing the home literacy environment (HLE) and the language experiences provided to preschoolers. This, in turn, can impact preschoolers' attitudes toward language learning (Choi et al., 2020; Lai et al., 2024).

For instance, research by Riches and Curdt-Christiansen (2010) revealed that Chinese parents in Canada who valued the home environment for academic success invested more in literacy resources and organized additional home-based literacy activities. Similarly, Chen et al. (2022) observed that parents with developmentally appropriate reading beliefs engaged in more frequent reading sessions, maintained a larger book collection, initiated reading at an earlier age, and fostered higher-quality interactions during reading. Building on these findings, Lai et al. (2024) demonstrated that parental literacy beliefs were directly linked to preschoolers' language and literacy outcomes, particularly through active participation in joint reading activities at home.

In addition, parents, by virtue of their beliefs, can directly convey the values and enjoyment associated with language and literacy learning to their preschoolers. This transmission forms a crucial foundation for preschoolers' motivation and interest, factors that significantly contribute to sustained academic achievement (Baker and Scher, 2002; DeBaryshe et al., 2000). Baker and Scher (2002) found that children whose parents viewed reading as enjoyable were more likely to demonstrate positive reading motivation. Luo et al. (2021) further showed a significant correlation between parental reading beliefs and children's attitudes toward books, even after controlling for family socioeconomic status.

Moreover, PB concerning children's abilities influence children's self-perceptions of competence and the

value they assign to success (Luo et al., 2021). These beliefs can serve as predictors of academic achievement and reading performance, as shown by Aunola et al. (2002). However, existing research primarily focuses on children's general attitudes, leaving the specific impact of PB on preschoolers' language learning attitudes largely unexplored (Dixon & Wu, 2014). Furthermore, Baker (1992) posited that attitudes comprise cognitive, affective, and behavioral components, each of which can predict language-related behaviors. Specifically, cognitive components involve beliefs and perceptions, affective components relate to evaluations and emotions, and the behavioral component—often referred to as conation—represents intentional actions or tendencies to act toward the subject.

These elements exert a direct and dynamic influence on individuals' responses or behaviors based on personal experiences (Heng & Karpudewan, 2015). A major contributor to this research gap is the lack of reliable and valid tools for assessing the three dimensions of attitudes— affective, cognitive, and behavioral.

Consequently, the present study seeks to address this gap by developing and validating a questionnaire to assess the influence of PB on preschoolers' ESL/EFL attitudes: the Parental Beliefs and Preschoolers' Attitudes toward English Learning Questionnaire (PBPAEL-Q). While previous instruments have explored parental beliefs or children's language attitudes separately, few tools have been specifically designed to capture the dynamic relationship between parental beliefs and preschoolers' attitudes toward English learning in early childhood settings (Lai et al., 2024). This instrument was developed using a sample drawn from the ethnic Chinese population. In China, while Chinese remains the primary local language, English acquisition is widely regarded as essential for academic and career advancement (Butler & Le, 2018; Hu et al., 2022). Given the growing emphasis on early English education and the influential role of parents in shaping young children's language attitudes, the PBPAEL-Q provides a contextually grounded, age-appropriate tool to systematically measure this relationship. By doing so, it addresses a previously underexplored area and contributes to the development of culturally relevant assessment tools in the field of early childhood language education.

1.1. Parents' Beliefs and Their Influence on Preschoolers' ESL/EFL Language Learning Attitudes

Studies on beliefs have a substantial and well-established history, notably beginning with the work of Fishbein and Ajzen (1980). More recently, beliefs have been conceptualized as multidimensional constructs that significantly influence human behavior (Ajzen, 2005; Maier et al., 2013). Specifically, beliefs are defined as an individual's perception of information as true regarding a particular object or behavior (Koballa, 1988).

Although existing research on parents' beliefs (PB) about preschoolers' ESL/EFL development remains limited, it spans several key dimensions. DeBaryshe and Binder (1994) define PB to include general views on children's developmental and learning processes. This includes beliefs about the appropriate home literacy environment (HLE) for children of a given age, the skills they should possess before school entry, and the importance of parental involvement in education. Earlier research on children's language learning commonly addresses two aspects of PB: (a) beliefs about the value of language and literacy learning (Lai et al., 2024); (b) beliefs about the learning process, including how children acquire language, the role of parents, and perceptions of effective or detrimental practices (Choi et al., 2020; Gonzalez et al., 2019).

According to Weigel et al. (2006), PB initially influence parental actions, which in turn affect the upbringing of preschoolers and their exposure to language. These interactions ultimately shape children's language learning attitudes. For example, Chinese parents who emphasized the importance of HLE for academic success were more likely to invest in home literacy resources and organize literacy-related activities (Xia, 2023). Thus, understanding PB offers meaningful theoretical and educational insights into parental behavior. Additionally, since beliefs are subject to change—becoming stronger, weaker, or replaced (Ajzen, 2005, 2012)—they may serve as intervention points for enhancing parental practices.

Secondly, through their beliefs, parents can indirectly instill values and enjoyment associated with language learning, laying a crucial foundation for children's interest and motivation (Zhang & Lau, 2022). For example, Froiland et al. (2013) found that parents who held positive attitudes about their children's English learning were more engaged in shared book reading and provided abundant literacy resources at home. As a result, home literacy support—measured by shared reading frequency and the number of children's books—significantly predicted children's motivation and academic achievement.

According to Baker and Scher (2002), children with higher levels of learning interest and motivation are more likely to excel academically. Similarly, Gai (2019) observed that children whose parents viewed reading as enjoyable exhibited stronger reading motivation. Even after controlling for socioeconomic status, Xia (2023) found a significant relationship between parental beliefs about reading and children's attitudes toward books. Furthermore, PB regarding children's abilities in EFL learning influence children's self-perceived competence and motivation (Butler & Le, 2018).

These results are consistent with Zhang and Lau (2022), who reported a strong relationship between PB and home literacy practices. Factors such as the quantity of English books, the frequency of English activities, and the extent of English book reading by parents were all

significantly associated with PB. Their study also found that parents in Hong Kong commonly recognized their role in supporting their children's English language development, aligning with prior research highlighting the value they place on English acquisition. Many parents were willing to invest in private English tutoring, English-speaking caregivers, and English-related materials and activities (Lau & Richards, 2021).

Furthermore, Zhang and Lau (2022) found that parents generally held positive beliefs about their preschoolers' interest in learning English and felt confident in fostering this development. However, large standard deviations in the data revealed notable variability, indicating that not all parents shared these views. More research is needed to explore these patterns and identify parent groups—such as those in mainland China—who may face greater challenges in supporting early English learning (Butler, 2015).

Lan et al. (2012) also explored mothers' beliefs about early English learning among children aged 3.5 to 5.5. These mothers emphasized English as a global language, valuable for education and future careers, and supported early home-based English instruction. They believed that playful learning activities could cultivate preschoolers' interest in English.

As previously discussed, PB directly influence the selection of HLE; however, an equally important aspect is their indirect role in shaping children's English learning attitudes. This influence operates through the HLE, encompassing both formal and informal exposure and the availability of literacy resources (Lai et al., 2024; Xia, 2023). In Lai et al.'s (2024) study, parents responded to questionnaires addressing their beliefs about early English reading, family demographics, and the home literacy environment. Findings showed that PB indirectly influenced preschoolers' language attitudes through language-related activities. Similarly, Altun (2019) found that PB concerning literacy were linked to children's attitudes toward language learning via home literacy activities, such as joint reading.

However, these studies did not explore the specific dimensions of attitudes—cognitive, affective, and behavioral—that Chinese preschoolers exhibit toward different types of HLE, including formal, informal, and resource-based environments within domestic settings.

1.2. Home Literacy Environment Influence on Preschoolers' ESL/EFL Language Learning Attitude

Drawing from the Home Literacy Model proposed by Sénéchal and LeFevre (2002) and further refined by Sénéchal (2006), the home literacy environment (HLE) can be categorized into formal and informal literacy environments, alongside the availability of literacy resources. The formal literacy environment refers to activities that emphasize explicit instruction in written language, such as

adults teaching letter names, sounds, or other print-related skills. In contrast, the informal literacy environment prioritizes meaning-making in written language, often occurring during shared reading sessions in which adults guide children to focus on the content and meaning of the text. Literacy resources include physical and digital tools that support the development of reading, writing, speaking, and comprehension skills—for example, books, newspapers, educational software, and electronic devices. These materials play a pivotal role in early education by enriching children’s opportunities for language exposure and practice.

Previous research has demonstrated that parental beliefs significantly influence the types of HLE adopted at home, encompassing both literacy interactions and access to resources. Together, these elements shape children’s early English language experiences and contribute to the development of their attitudes toward learning English (Choi et al., 2020; Xia, 2023). For instance, a study by Tong et al. (2021) involving Chinese parents with limited English proficiency found that when these parents engaged in English-oriented literacy activities at home, their involvement in supporting their children’s English learning increased. As a result, their first-grade children showed greater enthusiasm for learning English (Tong et al., 2021).

The HLE has consistently emerged as a key mediator in the relationship between parental beliefs and preschoolers’ language learning attitudes. Parents who value early literacy development are more likely to cultivate enriched HLEs, which, in turn, foster positive dispositions toward shared reading and digital English content (Lai et al., 2024; Tong et al., 2021). Additionally, English literacy resources—including diverse digital tools—have been shown to positively affect preschoolers’ attitudes toward English learning (Chen et al., 2022).

The amount of time parents devote to guiding their children’s EFL learning is another critical factor influencing children’s motivation and positive attitudes (Butler, 2015; Forey et al., 2016). For example, Feng (2016) found no significant relationship between parental encouragement practices and children’s English proficiency, suggesting that aspirations alone are insufficient without active engagement in children’s educational activities. Similarly, Yeung and King (2016) reported a positive association between the time parents spent reading with their children and the children’s interest in language learning. The more exposure children had to books and other reading materials at home, the higher their motivation to engage in English learning activities.

In summary, research on preschoolers’ attitudes toward learning ESL/EFL frequently highlights two key dimensions of parental beliefs: (a) parents’ perceived benefits of early English education (e.g., Choi et al., 2020; Lai et al., 2024), and (b) parents’ perceived value of their involvement in their children’s English learning (e.g., Forey et al.,

2016). Building on this foundation, the present study examines three components of the HLE—formal literacy environment, informal literacy environment, and literacy resources—based on the framework of Sénéchal and LeFevre (2002). Additionally, this study investigates three dimensions of preschoolers’ attitudes toward home-based ESL/EFL learning—cognitive, affective, and behavioral—as conceptualized by Baker (1992) and Gardner (1985).

1.3. Measurement Issues

To effectively understand parents’ beliefs (PB) and preschoolers’ attitudes toward home-based ESL/EFL learning—both critical for supporting young children’s language development—it is essential to utilize reliable and valid measurement tools. However, existing research predominantly employs instruments that either narrowly focus on the direct influence of PB on children’s attitudes or lack the ability to explore the mediating role of the home literacy environment (HLE). Many of the available scales tend to concentrate on one construct (e.g., PB), address only limited aspects of the HLE or preschoolers’ attitudes, or lack sufficient evidence of psychometric soundness.

For instance, Lai et al. (2024) developed a questionnaire with strong internal consistency and construct validity, primarily designed to examine the relationship between PB, the HLE, and Chinese kindergarteners’ English language and literacy outcomes. Although the study found that children with prior English learning experiences exhibited more positive attitudes, the questionnaire included only one item explicitly targeting PB, and the evidence of construct validity concerning preschoolers’ attitudes was limited.

Similarly, Choi et al. (2020) created a Likert-scale instrument to assess mothers’ educational beliefs and children’s attitudes toward English learning, while examining the mediating role of home-based English experiences. Parental beliefs were measured using a 4-point Likert-type scale encompassing two dimensions: perceived benefits of early English education and views on employing diverse teaching strategies. English experiences at home were assessed through variables such as age of first English exposure, time spent on English activities, out-of-school experiences, and the frequency of these experiences—rated on a 5-point frequency scale. Children’s attitudes were measured using six items on a 4-point agreement scale. While this scale demonstrated strong reliability (Cronbach’s $\alpha > 0.800$), it was tailored to reflect the practices and experiences of Korean families, and there is no validation evidence supporting its applicability in the Chinese context.

Other tools, such as those developed by Vasilyeva et al. (2018), have been shown to be psychometrically robust for measuring PB and English learning outcomes. However, they do not include items assessing preschoolers’ attitudes toward language learning, thereby limiting

their relevance to studies seeking to understand the full dynamic between PB, HLE, and child attitudes.

Given the importance of content and contextual alignment in psychological measurement—as emphasized by Ajzen (2012)—it is crucial to develop instruments that are theoretically grounded, context-sensitive, and psychometrically valid. Such tools are essential for accurately capturing the relationship between parental beliefs, the home literacy environment, and preschoolers' attitudes toward ESL/EFL learning, ultimately informing both research and practice aimed at improving educational outcomes.

1.4. Purpose of the Study

Despite the recognized importance of evaluating parents' beliefs (PB) and practices concerning their children's English learning during early childhood, there remains a lack of systematically developed and rigorously validated instruments designed to assess how these factors influence preschoolers' learning attitudes. To address this gap, the present study aims to develop and validate a questionnaire—the Parents' Beliefs and Preschoolers' Attitudes toward English Learning Questionnaire (PBPAEL-Q)—that captures key dimensions of PB related to the home literacy environment (HLE) and children's attitudes toward English learning in the context of ESL/EFL. This instrument is intended for use by parents of young ESL/EFL learners as well as researchers investigating the interplay between the home environment and early English language acquisition.

The development of the PBPAEL-Q is grounded in the experiences of ethnic Chinese parents with children aged 3 to 6 years residing in mainland China. The questionnaire construction was guided by the Home Literacy Environment framework proposed by Sénéchal & LeFevre (2002) and Sénéchal (2006), which distinguishes between formal and informal literacy experiences, as well as access to literacy resources. Accordingly, the PBPAEL-Q includes two dimensions of parental beliefs: (1) perceived benefits of early childhood English education, and (2) perceived benefits of parental involvement in children's English learning (Lai et al., 2024; Zhang & Lau, 2022). In alignment with these belief components, the instrument also assesses preschoolers' attitudes toward English learning across three domains: cognitive, affective, and behavioral (Bratož et al., 2021; Choi et al., 2020; Gardner, 1985).

Items were generated through an extensive literature review and semi-structured interviews with parents, ensuring both theoretical relevance and contextual appropriateness. To evaluate the factor structure and psychometric properties of the PBPAEL-Q, the study employed a two-phase validation process involving exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In addition, construct validity—including both convergent and discriminant validity—was examined by

analyzing correlations between PBPAEL-Q scores, parental home literacy practices, and relevant family demographic characteristics.

2. Method

2.1. Pilot Study Sample

A total of 160 ethnic Chinese parents of preschool-aged children in mainland China were recruited through purposive sampling. The children's ages were distributed as follows: 7.5% were aged 3, 37.5% aged 4, 31.3% aged 5, and 23.8% aged 6. The gender distribution of the children was equal, with 80 girls and 80 boys.

In terms of English learning onset, the majority of children (53.8%) began learning English between the ages of 3 and before 4. 21.9% started learning English before the age of 3, while 18.1% started between the ages of 4 and before 5, and only 6.3% began learning English between 5 and 6 years old.

All participating families reported Chinese as their mother tongue. The parents' educational backgrounds ranged from primary school to doctoral-level qualifications, with the majority holding either a higher certificate or a bachelor's degree (67.5% of mothers and 63.1% of fathers). Regarding socioeconomic background, the majority of households reported an annual income within the range of ¥150,000–300,000 (39.4%), followed by ¥300,000–500,000 (26.9%), and ¥60,000–150,000 (18.8%).

2.2. Validation Sample

This study employed purposive sampling to recruit participants from 14 administrative districts in Zhengzhou, China. According to Creswell (2014), purposive sampling enables researchers to deliberately select participants who can provide meaningful and relevant data for the research. This strategy ensured the inclusion of families with preschool-aged children engaged in English learning at home, thereby enhancing the relevance and applicability of the findings to the target population.

Preschool-aged children (3–6 years) were specifically targeted because early childhood is a critical period for shaping foundational attitudes toward learning, including second or foreign language acquisition (Barac & Bialystok, 2012). During this stage, children's language attitudes are highly susceptible to the influence of parental beliefs, home language practices, and emotional climate. As primary caregivers and decision-makers in early education, parents play a pivotal role in initiating and guiding English learning experiences at home (Liu & Zhao, 2020). Therefore, investigating parents of preschoolers provides the most direct insight into how parental beliefs shape early English learning attitudes.

To be eligible for participation, respondents were required to meet two criteria: they had to be parents or guardians of at least one child aged between 3 and 6 years,

and they must have supported the child in English language learning either currently or in the past. In accordance with Hair et al. (2021), a sample size of over 385 was sought to ensure adequate statistical power and representativeness, particularly for populations exceeding 100,000. To further mitigate sampling bias commonly associated with online surveys, the researcher aimed for a higher sample size.

The online questionnaire was distributed via Wenjuanxing (<https://www.wjx.cn/>), a widely used Chinese online survey platform, and promoted through major social media channels including WeChat and Weibo. Data collection took place between January and March 2024. A total of 439 questionnaires were distributed, of which 421 were returned, resulting in a high response rate of 96%. After excluding 16 questionnaires due to incomplete responses or failure to meet eligibility requirements, a final sample of 405 valid responses was retained for analysis.

Among the respondents, mothers represented the majority (55.1%), followed by fathers (31.1%) and other guardians (13.8%), all of whom were ethnic Chinese. The average age of the preschoolers was 49.68 months ($SD = 9.24$). The onset of English learning varied: the majority of children (42.7%) began learning English between the ages of 3 and 4, 38.5% started before age 3, and a smaller proportion (18.8%) began after age 4, with only 3.9% starting at age 5, the final year of kindergarten. The primary home language was Chinese, with only 2% of families reporting bilingual use of Chinese and English.

Regarding educational background, the majority of participating caregivers held an undergraduate degree (60.5%), and the sample as a whole represented a relatively well-educated demographic. In terms of socioeconomic status, more than half of the families (56.8%) reported annual household incomes between ¥150,000 and ¥500,000. This figure notably exceeds Zhengzhou's average annual income of ¥97,244 in 2022 (Zhengzhou Statistics Bureau, 2024), suggesting that the sample largely comprised middle-class families with access to resources that may influence their children's English language learning experiences.

3. Procedures and Measures

3.1. Instrument Development and Structure

The development of the Parental Beliefs and Preschoolers' Attitudes toward English Learning Questionnaire (PBPAEL-Q) followed Osterlind's (2006) guidelines for sound instrument construction. A comprehensive literature review on parental beliefs (PB), the home literacy environment (HLE), and children's language attitudes informed the identification of three core dimensions: (1) parental beliefs about early English education, (2) the English literacy environment at home, and (3) preschoolers' attitudes toward English learning.

To ensure contextual relevance, semi-structured interviews were conducted with 12 Chinese parents of preschoolers, and their responses were content-analyzed to generate an initial pool of 56 items. These items were reviewed and refined through expert evaluation ($n = 5$) and cognitive interviews with local parents and kindergarten teachers. Based on feedback, 5 items were removed, 4 were split, and several were reworded, resulting in a 51-item preliminary instrument.

The PBPAEL-Q used 5-point Likert-type items, with higher scores indicating stronger endorsement or more frequent engagement. The parental beliefs dimension (16 items) was adapted from Chinese studies (Lai et al., 2024; Zhang & Lau, 2022) and covered beliefs about the value of early English learning and parental involvement. The home literacy environment (17 items) was based on previous frameworks (Forey et al., 2016; Lau & Richards, 2021), covering formal learning, informal exposure, and resource availability. The preschoolers' attitudes (23 items) were adapted from Bratož et al. (2021), Choi et al. (2020), and Gardner (2004), capturing affective, cognitive, and behavioral dimensions of children's engagement with English.

A demographic questionnaire was also included to gather participants' background information, such as child age and gender, parental education, English proficiency, and household income.

3.2. Pilot Testing and Validation

A pilot study was conducted with ethical approval from the authors' affiliated university. The online questionnaire, hosted on Wenjuan Xing, included informed consent, demographics, and the 51-item PBPAEL-Q. Eligible participants were parents of children aged 3–6 engaged in English learning.

Data were used to evaluate item performance and explore the factor structure via exploratory factor analysis (EFA). Items with low loadings or redundancy were revised or removed. The refined questionnaire was then validated with a larger sample using both EFA and confirmatory factor analysis (CFA), along with tests of internal consistency (Cronbach's alpha), convergent and discriminant validity, and criterion-related validity. This multi-phase validation ensured the PBPAEL-Q's robustness and contextual appropriateness for research on home-based English learning among Chinese preschoolers.

4. Results

4.1. Data Preparation and Descriptive Analysis

In preparing the data for analysis, the researcher reverse coded four negatively phrased items to ensure consistency in scoring. Specifically, scores of 1, 2, 3, 4, and 5 were recoded as 5, 4, 3, 2, and 1, respectively, to align with the positively phrased items. Following this, a descriptive analysis was conducted to examine the overall data

distribution, including calculations of the mean, standard deviation, skewness, and kurtosis for each item.

A reliability analysis was performed to assess the internal consistency of the questionnaire. The Cronbach’s alpha value exceeded 0.89, indicating strong reliability across the scale. Additionally, an item-level correlation matrix was examined to evaluate the relationships between individual items and to ensure that all items contributed meaningfully to the scale.

To test the appropriateness of the data for factor analysis, Bartlett’s Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy were applied. The result of Bartlett’s Test was significant ($p < 0.001$), and the KMO value was 0.96, suggesting that the data were suitable for factor analysis, refer Table 1. This provided a strong foundation for further testing the factor structure of the PBPAEL-Q.

Table 1. KMO and Bartlett’s test.

KMO and Bartlett’s Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.962	
Bartlett’s Test of Sphericity	Approx. Chi-Square		13,244.211
	df		1275
	Sig.		0.000

4.2. Exploratory Factor Analysis

To explore the underlying factor structure of the PBPAEL-Q, Principal Component Analysis (PCA) was conducted on the pilot study dataset. Preliminary tests were employed to assess the appropriateness of the data

for factor analysis. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.962, which, according to Field (2013), falls within the excellent range, indicating that the sample size was more than adequate for reliable factor extraction. Additionally, Bartlett’s Test of Sphericity was highly significant ($\chi^2(1275) = 13,244.211, p < 0.001$), confirming that the inter-item correlations were sufficiently strong to proceed with PCA.

Communalities, reflecting the proportion of variance in each item explained by the extracted components, ranged from 0.521 to 0.766. This indicates that a substantial portion of variance was accounted for by the model (Tabachnick & Fidell, 2019). For instance, item PBEC1 exhibited a communality of 0.730, suggesting that 73% of its variance was explained by the underlying components.

An initial examination of eigenvalues revealed that eight components had values exceeding 1.0, collectively accounting for 65.517% of the total variance. The first unrotated component explained 37.694% of the total variance, indicating a strong general factor, while subsequent components explained progressively smaller proportions. After applying varimax rotation to enhance interpretability, the variance was more evenly distributed across the eight components. According to Table 2, post-rotation, the first component accounted for 14.213% of the variance, while the eighth component contributed 3.582%, suggesting a multidimensional structure within the PBPAEL-Q that aligns with the theoretical framework underlying the scale’s development.

Table 2. Total variance explained.

Component	Initial Eigenvalues			Extraction Sums of Square Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.224	37.694	37.694	19.224	37.694	37.694	7.248	14.213	14.213
2	3.641	7.139	44.833	3.641	7.139	44.833	6.135	12.030	26.242
3	2.556	5.011	49.844	2.556	5.011	49.844	5.037	9.877	36.119
4	2.303	4.515	54.360	2.303	4.515	54.360	4.778	9.369	45.488
5	2.156	4.227	58.587	2.156	4.227	58.587	4.326	8.482	53.970
6	1.456	2.855	61.442	1.456	2.855	61.442	2.079	4.077	58.047
7	1.228	2.408	63.850	1.228	2.408	63.850	1.983	3.888	61.935
8	0.850	1.667	65.517	0.850	1.667	65.517	1.827	3.582	65.517
9	0.749	1.469	66.986						

The unrotated component matrix presented the initial factor loadings, reflecting the extent to which each item contributed to the extracted components prior to rotation. In contrast, the rotated component matrix, produced using Varimax rotation with Kaiser normalization (Kaiser, 1958), offered a more interpretable structure by redistributing the variance across components to better align with distinct constructs.

In Table 3, the rotated matrix revealed that items loaded strongly onto their respective components, with all factor loadings exceeding the commonly accepted threshold of 0.60, indicating substantial contributions.

For example, item PBEC1 demonstrated a strong loading of 0.748 on Component 3, suggesting a clear association with the factor related to beliefs about early childhood English education. Similarly, PBPI1 loaded at 0.752 on Component 6, which corresponds to parental involvement in English learning, while AA1 showed a loading of 0.720 on its respective component, reflecting attitudes in the affective domain. These robust loadings confirm that the items aligned well with the theoretical dimensions they were designed to measure, supporting the scale’s construct validity at this stage of development.

Table 3. Rotated Component Matrix ^a.

	Component							
	1	2	3	4	5	6	7	8
PBEC1			0.748					
PBEC2			0.700					
PBEC3			0.678					
PBEC4			0.673					
PBEC5			0.618					
PBEC6			0.654					
PBEC7			0.655					
PBEC8			0.677					
PBPI1						0.752		
PBPI2						0.757		
PBPI3						0.699		
FEL1			0.722					
FEL2			0.700					
FEL3			0.701					
FEL4			0.723					
FEL5			0.727					
FEL6			0.735					
FEL7			0.705					
IEL1				0.704				
IEL2				0.668				
IEL3				0.711				
IEL4				0.611				
IEL5				0.678				
IEL6				0.683				
IEL7				0.673				
ELR1							0.647	
ELR2							0.625	
ELR3							0.707	
AA1	0.720							
AA2	0.762							
AA3	0.697							
AA4	0.727							
AA5	0.684							
AA6	0.771							
AA7	0.734							
AA8	0.711							
AA9	0.726							
AC1						0.706		
AC2						0.717		
AC3						0.648		
AB1	0.741							
AB2	0.736							
AB3	0.749							
AB4	0.681							
AB5	0.724							
AB6	0.716							
AB7	0.724							
AB8	0.652							
AB9	0.673							
AB10	0.709							
AB11	0.759							

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. ^a Rotation converged in 7 iterations.

4.3. Validation

4.3.1. Data Preparation and Descriptive

Following the data collection phase, a total of 439 responses were obtained from parents and caregivers. After an initial screening, approximately 3% of responses were excluded due to ineligibility, yielding a final dataset of 405 valid cases. To ensure data integrity, four negatively phrased items (e.g., 49, 57, 58, 62) were reverse-coded, with response values of 1 through 5 re-coded to 5 through 1, respectively.

Descriptive statistical analyses were conducted to evaluate item characteristics, including means, standard deviations, and multivariate normality. Mardia's multivariate skewness coefficient indicated a deviation from normal distribution, suggesting that the data exhibited non-normal multivariate characteristics. Despite the non-normality, a reliability analysis of the revised PBPAEL-Q revealed a strong internal consistency ($r = .86$). However, skewness (200.34) and kurtosis (198 after centering) were notably high, prompting further inspection through item-level correlation analysis to assess the consistency and linearity among items.

To determine the dataset's suitability for factor analysis, both Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were employed. The KMO value was 0.96, falling within the "meritorious" range (Kaiser, 1958), while Bartlett's test reached statistical significance ($p < 0.001$), confirming that the correlation matrix was sufficiently factorable. These results supported the appropriateness of conducting confirmatory factor analysis on the revised PBPAEL-Q.

4.3.2. Exploratory Structural Equation and Confirmatory Factor Analysis

To validate the factor structure of the PBPAEL-Q, both exploratory structural equation modeling (ESEM) and confirmatory factor analysis (CFA) were conducted. All item loadings on their respective latent constructs—Parental Beliefs about early childhood English education (PB), Formal English Learning (FEL), Informal English Learning (IEL), Affective Attitude (AA), English Learning Resources (ELR), Cognitive Attitude (AC), and Behavioral Attitude (AB)—exceeded the 0.60 threshold. This suggests strong item reliability across the scale. According to Hair et al. (2019), loadings above 0.70 are considered highly satisfactory, while those above 0.60 are still acceptable for construct validity. For example, PBEC1 had a standardized loading of 0.83, indicating a strong representation of its underlying construct, refer Figure 1.

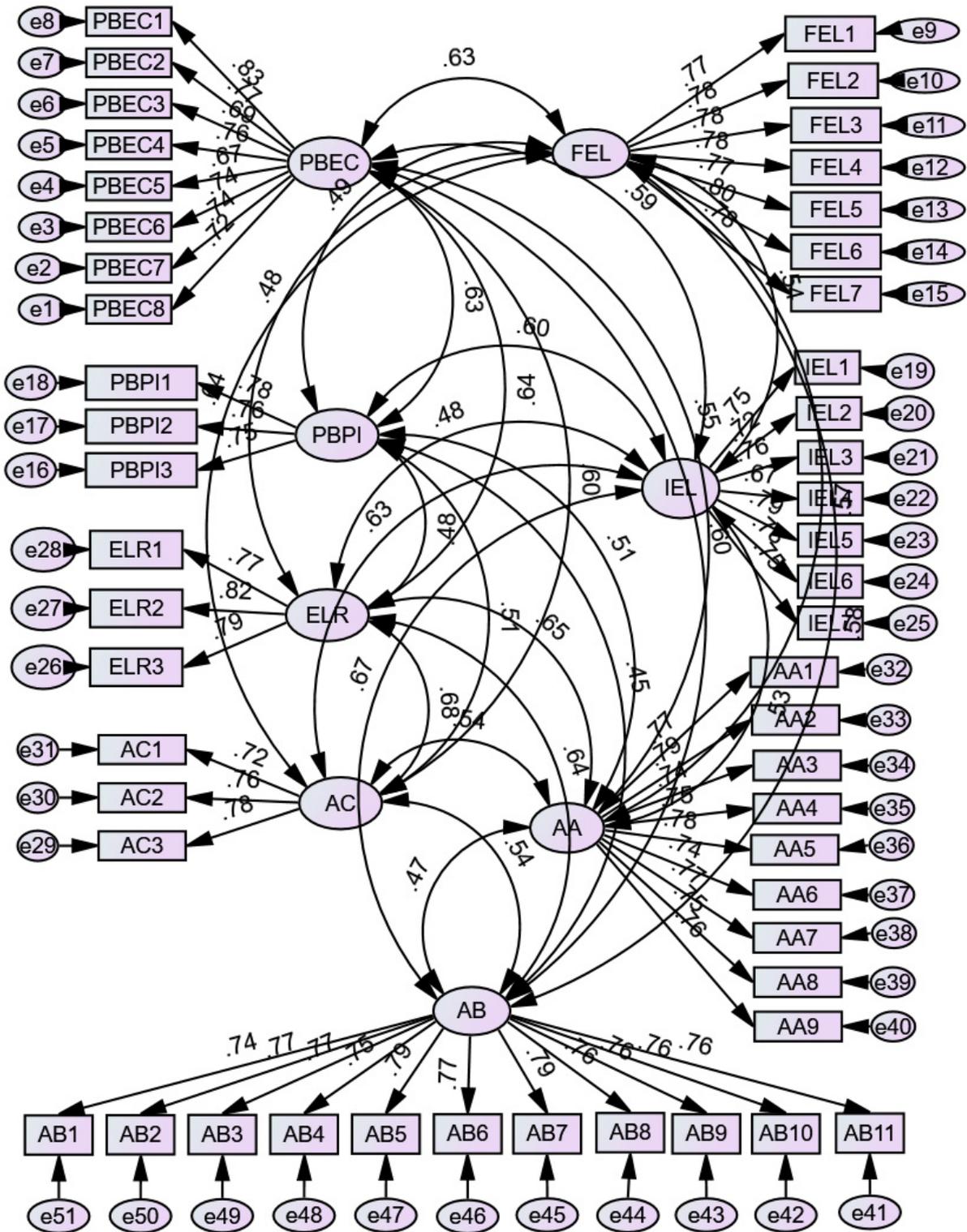


Figure 1. CFA Standardized Estimates model.

According to the Table 4, the fit of the CFA model was evaluated using multiple goodness-of-fit indices. The Root Mean Square Residual (RMR) was 0.057, well below the 0.08 cutoff, indicating minimal residual discrepancies (Hu & Bentler, 1999). Incremental fit indices, including the Incremental Fit Index (IFI = 0.974) and the Tucker-Lewis Index (TLI = 0.972), both surpassed the recommended

0.90 threshold (Bentler & Bonett, 1980; Tucker & Lewis, 1973), suggesting good model specification and parsimony. The Comparative Fit Index (CFI) also reached 0.974, exceeding the 0.95 benchmark for excellent fit (Bentler, 1990). Moreover, the Root Mean Square Error of Approximation (RMSEA) was 0.026, significantly below the commonly accepted limit of 0.06, further confirming a

close model-data fit (Hu & Bentler, 1999). Lastly, the Chi-Square to Degrees of Freedom ratio (CMIN/DF) was 1.274, falling below the threshold of 3.0 (Kline, 2015), which indicates an overall acceptable and well-fitting model.

Together, these results affirm the structural validity and reliability of the PBPAEL-Q, supporting its use in measuring parental beliefs, home literacy practices, and preschoolers' attitudes toward English learning in the Chinese context.

Table 4. CFA model fitness value.

Model	RMR	IFI	TLI	CFI	RMSEA	CMIN/DF
Default model	0.057	0.974	0.972	0.974	0.026	1.274
Saturated model	0	1		1		
Independence model	0.608	0	0	0	0.156	10.867

4.3.3. Construct Validity

To assess the construct validity of the PBPAEL-Q, both convergent and divergent validity were examined. Convergent validity was established by evaluating whether related constructs—specifically parental beliefs and the home literacy environment—were significantly correlated with one another, as theoretically expected. The analysis revealed strong, positive correlations between parental beliefs (i.e., the value placed on early childhood English education and parental involvement) and the home literacy environment, including formal and informal English learning activities and the availability of English learning resources at home. These findings support the notion that parents who hold stronger beliefs in the value of early English education are also more likely to engage in and provide enriching English learning experiences within the home environment.

Furthermore, the home literacy environment showed significant positive associations with young children's attitudes toward English learning, across the affective, cognitive, and behavioral dimensions. This pattern aligns with prior research and theoretical frameworks suggesting that supportive home environments contribute to more favorable learning attitudes among preschoolers, thereby reinforcing the PBPAEL-Q's convergent validity.

Divergent validity was evaluated by examining the relationships between the PBPAEL-Q constructs and various family demographic variables. The analysis showed that fathers' educational levels were not significantly associated with parental beliefs or children's English learning attitudes, suggesting appropriate divergence from unrelated constructs. In contrast, significant associations were found with maternal education and family income. Higher family income was positively correlated with stronger parental beliefs in the importance of the home literacy environment and perceptions of the child's English language competence and motivation. Similarly, higher maternal education levels were significantly associated with more favorable parental beliefs and greater appreciation of the home environment's role in shaping children's English language development. Notably, maternal educational background emerged as a unique predictor of how parents perceived

the importance of the home environment in shaping children's attitudes toward learning English.

Taken together, these findings provide strong evidence for the construct validity of the PBPAEL-Q, confirming that the questionnaire appropriately captures the theoretical relationships among parental beliefs, home practices, and children's English learning attitudes.

5. Discussion

This study developed and validated the Parental Beliefs and Preschoolers' Attitudes toward English Learning Questionnaire (PBPAEL-Q), a psychometric instrument designed to assess how parental beliefs (PB) and the home literacy environment (HLE) shape young children's attitudes toward learning English as a second or foreign language (ESL/EFL). Guided by Osterlind's (2006) recommendations, the instrument was grounded in a comprehensive review of relevant literature and enriched by qualitative data gathered from semi-structured interviews with parents of kindergarten-aged children. This dual approach ensured that the instrument was both theoretically informed and contextually relevant.

The initial pool of items was further refined through expert evaluation, feedback from kindergarten teachers, and cognitive interviews with local parents, enhancing the content validity and clarity of the items. Exploratory factor analysis (EFA), exploratory structural equation modeling (ESEM), and confirmatory factor analysis (CFA) were then sequentially employed to examine the instrument's structure and validate the final version. The results supported a stable and theoretically consistent factor structure comprising three overarching domains: parental beliefs, home literacy environment, and preschoolers' English learning attitudes. The final 51-item version demonstrated strong reliability and construct validity across both pilot and validation samples.

Notably, the majority of participants in this study came from urban, middle-class families, a demographic that often has greater access to educational resources, higher levels of parental education, and stronger motivation to invest in early English learning. These characteristics may influence both the beliefs and practices captured by the PBPAEL-Q. Therefore, while the

instrument demonstrates strong psychometric properties, its findings may not fully generalize to families from lower-income, rural, or linguistically diverse backgrounds. Future studies should validate the PBPAEL-Q across different socioeconomic and cultural contexts to assess its broader applicability.

In comparison to existing tools such as Bratož et al.'s (2021) LANGattMini Scale and Choi et al.'s (2020) English activity preference scale—which were developed primarily in European or East Asian educational settings—the PBPAEL-Q integrates both parental beliefs and early childhood language attitudes within a unified framework tailored to Chinese families. This comprehensive approach captures the interconnected nature of home-based English learning and offers a culturally grounded alternative for researchers and practitioners working in similar contexts.

The PBPAEL-Q is thus a robust and empirically grounded tool that offers meaningful insights into the dynamics between home environments, parental values, and children's early language attitudes. Its contribution extends beyond early childhood English education by addressing the critical role of parental agency in shaping literacy environments and child motivation at a foundational stage of development.

In sum, the PBPAEL-Q serves as a useful instrument for scholars, educators, and policymakers interested in promoting equitable and effective English learning in early childhood. Its development represents a step toward more nuanced, culturally responsive tools that reflect the diverse realities of families engaged in home-based language learning.

5.1. Factor Structure of the PBPAEL-Q

The PBPAEL-Q was designed to measure three core constructs relevant to early childhood English language learning: (a) Parents' Beliefs regarding Early Childhood English Education, (b) The Literacy Environment at Home, and (c) Young Children's Attitudes toward English Learning (see Appendix A for the complete scale). This structure reflects both theoretical foundations and empirical validation.

The first factor, *Parents' Beliefs regarding Early Childhood English Education*, comprises eleven items focused on parents' perceived value of introducing English at a young age and their involvement in the child's English learning. These beliefs reflect cognitive and motivational orientations that influence parental behavior. The findings revealed that Chinese parents generally held strong, positive beliefs about early English education, as evidenced by the high mean scores and low variability in this factor. This aligns with prior research showing that Chinese parents often place high importance on English learning for their children and actively facilitate this process at home through activities such as

shared reading, English-speaking routines, and the provision of home-based English resources (Chen et al., 2022; Forey et al., 2016; Lai et al., 2024).

The second factor, *The Home Literacy Environment*, contains seventeen items and evaluates how parents create and maintain a supportive English learning environment. This includes *formal English learning activities* (e.g., structured lessons), *informal English learning activities* (e.g., storytelling, songs, and games), and *available English learning resources* (e.g., books, digital tools). While the mean scores indicated that most parents provided a variety of English-related resources and practices, the standard deviations were relatively large. This suggests variability in the extent and type of support offered, particularly between mothers and fathers. Such variation underscores the importance of further examining gender-specific roles and patterns in parental support for early English learning.

The third factor, *Young Children's Attitudes toward English Learning*, includes twenty-three items derived from Gardner's (2004) Attitude/Motivation Test Battery (AMTB) and captures three dimensions of children's attitudes: *affective* (e.g., enjoyment, interest), *cognitive* (e.g., perceived importance, understanding), and *behavioral* (e.g., willingness to engage). The study findings confirm that a rich home literacy environment significantly influences preschoolers' attitudes toward English learning. This is consistent with previous research highlighting the important role of both formal and informal language exposure in shaping children's enthusiasm, confidence, and motivation for learning English (Choi et al., 2020; Tong et al., 2021; Xia, 2023).

Importantly, different components of the home environment were associated with distinct dimensions of learning attitudes. For instance, the availability of English resources (e.g., books, media) was more closely linked to children's *affective* and *cognitive* responses, while *informal learning activities*—often led by caregivers—had a stronger impact on their *behavioral* engagement. These results suggest that both material resources and relational interactions at home are crucial in fostering positive attitudes toward English learning during the preschool years.

5.2. Parents' Beliefs, Home Literacy Environment, and Children's English Learning Attitudes

The present study identified a strong and significant relationship between PB and their home literacy practices, reinforcing the idea that what parents believe fundamentally shapes what they do in the home learning environment. Specifically, parents who acknowledged the value of early childhood English education and endorsed active involvement in their child's English learning were more likely to invest in English language resources, provide diverse learning materials, and actively

participate in both formal and informal English learning activities with their children. These findings support the notion that positive parental beliefs translate into enriched literacy environments, which, in turn, facilitate children's language development (Vasilyeva et al., 2018).

Conversely, parents who expressed weaker beliefs regarding the importance of early English learning tended to engage less with their children in English-related activities, offered fewer learning materials, and were generally less involved in creating structured or playful English language experiences at home. These behavioral patterns are consistent with prior research indicating that parental undervaluing of English education often leads to diminished support for the child's learning, both in terms of quantity and quality (Gai, 2019).

Moreover, this study contributes to a growing body of literature that highlights the dynamic interplay among PB, the HLE, and children's attitudes toward language learning (Choi et al., 2019; Ng & Wei, 2020; Lai et al., 2024). In households where parents engaged actively in English-focused literacy activities—such as shared book reading, singing English songs, or using English educational games—children displayed heightened enthusiasm and motivation for learning English. These affective responses are essential in fostering long-term engagement and success in language learning.

Crucially, access to home literacy resources also emerged as a key mediating factor. The availability of English books, audio-visual materials, and interactive tools helped bridge parental beliefs and children's *cognitive attitudes*, such as their perceived value of English learning and their confidence in using the language. This finding underscores the importance of not only fostering positive parental beliefs but also ensuring that families have access to tangible English learning resources. Together, these insights suggest that enhancing both parents' mindsets and their material support systems could play a pivotal role in cultivating young learners' positive attitudes toward English as a foreign language.

5.3. Concerning the Relationship between Parents' Beliefs and Family Characteristics

As anticipated, the results revealed that parents' beliefs about early childhood English education were generally not influenced by child-specific factors such as gender or by structural family characteristics like marital status. This finding aligns with prior research suggesting that parental attitudes toward early education tend to be shaped more by internal value systems and broader socioeconomic influences than by demographic variables alone.

However, clear patterns emerged regarding the role of socioeconomic status and parental education. Parents with higher income levels and more advanced educational

backgrounds were found to hold more favorable beliefs about and attitudes toward supporting their children's English language learning. These parents were also more confident in their children's English abilities and reported a stronger sense of self-efficacy regarding their role in facilitating English language development. In contrast, lower-income and less-educated parents were more susceptible to control beliefs—such as perceived limitations in their capacity to support language learning—which may hinder their engagement.

These findings are consistent with a well-documented body of literature indicating that family income and parental education are significant predictors of both the cognitive and affective aspects of parental involvement (DeBaryshe & Binder, 1994; Zhang & Lau, 2022). More affluent and educated parents may have greater access to resources, stronger awareness of the value of English proficiency, and more positive experiences with language learning themselves, which collectively inform their beliefs and confidence in supporting their children.

Taken together, these results reinforce the convergent and divergent validity of the PBPAEL-Q and provide valuable insights into the contextual factors that shape parents' involvement in their children's English learning. Understanding how beliefs vary across different socioeconomic groups can inform more equitable strategies for engaging families in early language education. Programs designed to foster ESL/EFL learning in early childhood may benefit from offering differentiated support to parents based on income and education levels, aiming to boost both parental confidence and access to effective literacy practices.

6. Conclusions and Limitations

This study introduced and validated the Parental Beliefs and Preschoolers' Attitudes toward English Learning Questionnaire (PBPAEL-Q), a novel instrument designed to assess how parental beliefs (PB) and the home literacy environment (HLE) shape preschoolers' affective, cognitive, and behavioral attitudes toward English learning in ESL/EFL contexts. Grounded in relevant theoretical frameworks and informed by both qualitative and quantitative methodologies, the PBPAEL-Q demonstrated strong internal consistency, a stable factor structure, and satisfactory construct validity across two independent samples. By addressing a previously underexplored intersection of early language attitudes, home-based literacy practices, and culturally embedded parental ideologies, this study makes a timely contribution to the literature on early childhood second language acquisition.

Importantly, the PBPAEL-Q offers a psychometrically robust and contextually grounded tool for researchers, educators, and policymakers seeking to

understand and support home-based influences on young children's English learning. Its development process—combining literature review, expert evaluation, parent interviews, cognitive testing, and rigorous statistical validation—ensures both theoretical relevance and practical applicability in real-world settings.

However, several limitations must be acknowledged. First, although the sample sizes used in both pilot and validation phases met statistical thresholds for factor analysis, they were not large enough to support subgroup analyses or to detect more nuanced variations across demographic strata. Future studies should employ larger, more heterogeneous samples to enhance the generalizability and statistical power of the instrument.

Second, the current study did not examine measurement invariance across key demographic variables such as socioeconomic status, language exposure, or regional curriculum differences. Without this step, it remains uncertain whether the PBPAEL-Q captures the same underlying constructs consistently across diverse groups. Future research should investigate the scale's cross-group validity and cultural sensitivity, particularly in multilingual or multicultural contexts.

Third, all data were collected via parental self-report, including items assessing children's attitudes toward English learning. While parents can report on observable behaviors in home settings, they may have limited insight into affective or classroom-based aspects, and their responses may be influenced by personal beliefs or social desirability bias. Incorporating multi-informant designs—such as teacher evaluations or child self-reports—will improve data accuracy and reduce method bias.

Fourth, the scale was developed within a specific cultural and linguistic context: ethnic Chinese families in mainland China. While this focus enhances contextual relevance, it limits external validity. Since parental beliefs and home language practices are deeply shaped by culture, future studies should explore the PBPAEL-Q's applicability in different sociocultural environments through cross-national or cross-regional validation.

Finally, the study employed a cross-sectional design, which restricts the ability to infer causal relationships between PB, HLE, and children's learning attitudes. Longitudinal studies are needed to examine how these relationships evolve over time and to determine the long-term impact of parental beliefs and practices on children's English language development.

In conclusion, this study provides a theoretically informed, empirically validated tool to investigate how parents shape young children's English learning trajectories. The PBPAEL-Q fills a critical gap in early language education research and offers practical implications for fostering parental engagement in

EFL/ESL contexts. Continued refinement, multi-source validation, and longitudinal application will further enhance its value across educational and cultural settings.

Author Contributions

Q.L. (Qingyun Li): collecting data, analysis and interpretation of data, and first draft for the work. K.K.: revising the work critically for important intellectual content. Q.L. (Qian Li): interpretation of data, revising the work critically and format the manuscript to be published. All authors have read and agreed to the published version of the manuscript.

Funding

Funding was provided by An Investigation of the Mechanisms by Which the Family Literacy Environment in Southeast Asia Shapes Children's Attitudes Toward Learning Chinese; College of Liberal Arts, Chongqing Normal University [Grant No. 25XWB054]. Implementation Effects and Optimization of Chongqing's Childcare Service Policies within a Fertility-Friendly Framework; School of Educational Studies, Chongqing College of International Business and Economics [Grant No. KYSK2025057].

Institutional Review Board Statement

This study was conducted in accordance with the ethical guidelines of Universiti Sains Malaysia and approved by the Jawatankuasa Etika Penyelidikan Manusia (Approval Number: [USM/JEPeM/PP/23100733]). Informed consent was obtained from all participants before data collection.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study. Written informed consent has been obtained from the patients to publish this paper

Data Availability Statement

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Acknowledgements

The authors would like to thank Lance Ong for his tireless help and thoughtful comments.

Conflicts of Interest

The authors declare no conflict of interest.

Use of AI and AI-Assisted Technologies

No AI tools were utilized for this paper.

Appendix A. Parental Beliefs and Preschoolers' Attitudes toward English Learning Questionnaire

Part A: Children's English Educational Experiences and Parent's Demographic Background Information

1. Your child's gender
 Male Female
2. Your child's date of birth
 Year () Month () Day ()
3. When did your child first start learning English?
 Before three years old
 3 to before 4 years old
 4 to before 5 years old
 5 to 6 years old
4. Please state your relationship to the child
 father mother
 guardian (Please specify _____ e.g. grandmother)
5. Your highest education qualification
 Below junior middle school Senior middle school
 College Undergraduate (Bachelor's Degree)
 Postgraduate (Master) Postgraduate (Doctorate)
6. Please self-rate your English proficiency (1 = lowest, 5 = highest)
 1 2 3 4 5
7. Please list down if you have received any of the following English certificates
 CET-4 CET-6 TEM-4
 TEM-8 IELTS TOEFL
 Others, please state ()
 I did not receive any of the above certificates
8. Your spouse's highest education background
 Below junior middle school Senior middle school
 College Undergraduate (Bachelor's Degree)
 Postgraduate (Master) Postgraduate (Doctorate)
9. Please self-rate your spouse's English proficiency (1 = lowest, 5 = highest)
 1 2 3 4 5
10. Please list down if your spouse has received any of the following English certificates
 CET-4 CET-6 TEM-4
 TEM-8 IELTS TOEFL
 Others, please state ()
 I did not receive any of the above certificates
11. Your family annual household income range
 Less than ¥20,000 ¥30,000–¥60,000
 ¥ 60,000–¥150,000 ¥150,000–¥300,000
 ¥300,000–¥500,000 ¥500,000–¥1,000,000
 ¥1,000,000–¥8,000,000 ¥8,000,000–¥15,000,000
 ¥15,000,000–¥80,000,000 More than ¥80,000,000
12. What proportion of your household income do you invest in to support your child's English learning per month?
 (Note: support here refers to funds spent in exchange of goods or services for your child to learn English. These may include online/virtual classes, private tutoring, purchase of educational resources, etc)
 Less than 10% 10–19% 20–29% more than 30%
 I do not spend any money on English learning for my child
 My spending are adhoc and sporadic, with no fixed estimates per month

13. How many children’s picture books in English or bilingual do you have at home?

- None 1–10 books 11–30 books
 31–50 books More than 50 books

Part B: Parent’s Beliefs towards Child’s English Learning

Circle the number that best represents your situation (1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strong agree).

B1. Benefits of Early Childhood English Education	Strongly Disagree	Disagree	Uncertain	Agree	Strong Agree
14. I believe that English learning should start early in my child’s education	1	2	3	4	5
15. I believe that my child’s proficiency in English will give them a competitive advantage in the job market	1	2	3	4	5
16. I believe that English fluency will contribute to my child’s sense of identity and belonging in a globalized world	1	2	3	4	5
17. I believe that English learning enhances my child’s thinking and learning abilities	1	2	3	4	5
18. I believe that exposing my child to different cultures through learning English is important	1	2	3	4	5
19. I believe that knowing English helps my child communicate effectively with a diverse range of people	1	2	3	4	5
20. I believe that investing in my child’s English education is worth the financial resources required	1	2	3	4	5
21. I believe that learning English is crucial for my child’s overall growth and development	1	2	3	4	5
B2. Benefits of Parent Involvement in Child’s English Education	Strongly Disagree	Disagree	Uncertain	Agree	Strong Agree
22. I believe I play an important role in my child’s English learning	1	2	3	4	5
23. I believe my interactions with my child during the process of English learning are very important	1	2	3	4	5
24. I believe in actively supporting and encouraging my child’s English learning by providing various activities and resources	1	2	3	4	5

Part C: Home Literacy Environment

Circle the number that best represents your situation (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Very often).

C1. Formal English Learning Environment					
Types of provision	Never	Rarely	Sometimes	Often	Very often
25. Assist with English homework (online/private programs)	1	2	3	4	5
26. Carry out writing exercises with my child to help him learn alphabets and words	1	2	3	4	5
27. Use flashcards or drills to teach English words	1	2	3	4	5
28. Hire a personal English tutor	1	2	3	4	5
29. Enrol my child for English certification courses (e.g., IELTS, TOFEL, Cambridge Young Learners English (YLE) tests)	1	2	3	4	5
30. Enrol my child for English enrichment after-school programs (e.g., English playgroups, tutorial classes)	1	2	3	4	5
31. Travel with my children to take part in study tours	1	2	3	4	5
C2. Informal English Learning Environment					
Types of provision	Never	Rarely	Sometimes	Often	Very often
32. Read books or look at picture books in English with my child	1	2	3	4	5
33. Sing English songs or rhymes to or with my child, including bedtime songs	1	2	3	4	5
34. Name objects or draw things with my child using English words	1	2	3	4	5
35. Converse with my child in English	1	2	3	4	5
36. Play digital games in English content with my child	1	2	3	4	5

37. Visit bookstores or libraries with my child					
38. Develop an English study plan for the child					
C3. English Learning Resource Environment					
Types of provision	Never	Rarely	Sometimes	Often	Very often
39. Provide my child with multi-media/ digital materials (e.g., DVDs, songs, audio books)	1	2	3	4	5
40. Subscribe to English learning apps	1	2	3	4	5
41. Provide my child with English text materials (e.g., English or Chinese-English bilingual books, flashcards, workbooks)	1	2	3	4	5

Part D: Children’s Attitudes towards English Learning

Circle the number that best represents your situation (1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strong agree).

D1. Liking English Learning (Affective)	Strongly Disagree	Disagree	Uncertain	Agree	Strong Agree
42. My child enjoys learning English	1	2	3	4	5
43. My child feels confident when asked to speak in English	1	2	3	4	5
44. My child does not get anxious when he has to answer questions in English	1	2	3	4	5
45. My child likes English learning activities, he looks forward to studying more English in the future.	1	2	3	4	5
46. My child volunteers himself when asked to say something in English					
47. My child prefers learning English to Chinese	1	2	3	4	5
48. My child prefers learning English to Math	1	2	3	4	5
49. My child feels bored during his English lessons	1	2	3	4	5
50. My child feels disappointed when his English lessons/learning activities are cancelled	1	2	3	4	5
D2. Evaluative Beliefs about English Learning (Cognitive)	Strongly Disagree	Disagree	Uncertain	Agree	Strong Agree
51. My child believes English is useful for solving problems	1	2	3	4	5
52. My child believes people must understand English because it affects their lives	1	2	3	4	5
53. My child believes English is one of the most important subjects for people to study	1	2	3	4	5
D3. Behavioural Tendencies to Learn English (Behavioural)	Strongly Disagree	Disagree	Uncertain	Agree	Strong Agree
54. My child enjoys showing off to his friends or family new things he has learnt in English	1	2	3	4	5
55. My child completes his English related homework without much fuss or persuasion	1	2	3	4	5
56. My child is very attentive and focused during his English learning activities	1	2	3	4	5
57. My child gives up easily when the English learning task or homework is too difficult	1	2	3	4	5
58. My child makes excuses whenever it is time for him to attend his English lessons	1	2	3	4	5
59. If there is choice between two languages for a movie or a song, my child will choose the one with English content	1	2	3	4	5
60. My child is curious about new English words (e.g. when my child see things, he wants to know how to say it in English)	1	2	3	4	5
61. My child uses what he learned in English class voluntarily	1	2	3	4	5
62. My child refuses to participate in English learning activities	1	2	3	4	5
63. My child likes playing English materials or games at home (e.g. pictures books, toys, blocks and activity papers)	1	2	3	4	5
64. My child asks questions related to English Language (e.g. what is this in English?)	1	2	3	4	5

References

- Ajzen, I. (2005). *Attitudes, personality and behaviour*. McGraw-Hill Education.
- Ajzen, I. (2012). Martin Fishbein's legacy: The reasoned action approach. *The Annals of the American Academy of Political and Social Science*, 640(1), 11–27. <https://doi.org/10.1177/0002716211423363>.
- Altun, D. (2019). Preschoolers' emergent motivations to learn reading: A grounded theory study. *Early Childhood Education Journal*, 47(4), 427–443. <https://doi.org/10.1007/s10643-018-0916-8>.
- Aunola, K., Nurmi, J.-E., Niemi, P., Lerkkanen, M.-K., & Rasku-Puttonen, H. (2002). Developmental dynamics of achievement strategies, reading performance, and parental beliefs. *Reading Research Quarterly*, 37(3), 310–327. <https://doi.org/10.1598/RRQ.37.3.3>.
- Baker, C. (1992). *Attitudes and language*. Multilingual Matters.
- Baker, L., & Scher, D. (2002). Beginning readers' motivation for reading in relation to parental beliefs and home reading experiences. *Reading Psychology*, 23(4), 239–269. <https://doi.org/10.1080/713775283>.
- Barac, R., & Bialystok, E. (2012). Bilingual effects on cognitive and linguistic development: Role of language, cultural background, and education. *Child Development*, 83(2), 413–422. <https://doi.org/10.1111/j.1467-8624.2011.01707.x>.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88(3), 588–606. <https://doi.org/10.1037/0033-2909.88.3.588>.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238–246. <https://doi.org/10.1037/0033-2909.107.2.238>.
- Birdsong, D., & Paik, J. (2008). Second language acquisition and ultimate attainment. In B. Spolsky & F. M. Hult (Eds.), *The handbook of educational linguistics* (pp. 424–436). Blackwell. <https://doi.org/10.1002/9780470694138.ch30>.
- Bratož, S., Pirih, A., & Štemberger, T. (2021). Identifying children's attitudes towards languages: Construction and validation of the LANGattMini Scale. *Journal of Multilingual and Multicultural Development*, 42(3), 234–246. <https://doi.org/10.1080/01434632.2019.1684501>.
- Butler, Y. G. (2014). Parental factors and early English education as a foreign language: A case study in Mainland China. *Research Papers in Education*, 29(4), 410–437. <https://doi.org/10.1080/02671522.2013.776625>.
- Butler, Y. G. (2015). English language education among young learners in East Asia: A review of current research (2004–2014). *Language Teaching*, 48(3), 303–342. <https://doi.org/10.1017/S0261444815000105>.
- Butler, Y. G., & Le, V. (2018). A longitudinal investigation of parental social-economic status (SES) and young students' learning of English as a foreign language. *System*, 73, 4–15. <https://doi.org/10.1016/j.system.2017.07.005>.
- Chen, S., Zhao, J., De Ruiter, L., Zhou, J., & Huang, J. (2022). A burden or a boost: The impact of early childhood English learning experience on lower elementary English and Chinese achievement. *International Journal of Bilingual Education and Bilingualism*, 25(4), 1212–1229. <https://doi.org/10.1080/13670050.2020.1749230>.
- Choi, N., Kang, S., Cho, H. J., & Sheo, J. (2019). Promoting young children's interest in learning English in EFL context: The role of mothers. *Education Sciences*, 9(1), 46.
- Choi, N., Kang, S., & Sheo, J. (2020). Children's interest in learning English through picture books in an EFL context: The effects of parent-child interaction and digital pen use. *Education Sciences*, 10(2), 40. <https://doi.org/10.3390/educsci10020040>.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE.
- DeBaryshe, B. D., & Binder, J. C. (1994). Development of an instrument for measuring parental beliefs about reading aloud to young children. *Perceptual and Motor Skills*, 78, 1303–1311. <https://doi.org/10.2466/pms.1994.78.3c.1303>.
- DeBaryshe, B. D., Binder, J. C., & Buell, M. J. (2000). Mothers' implicit theories of early literacy instruction: Implications for children's reading and writing. *Early Child Development and Care*, 160(1), 119–131. <https://doi.org/10.1080/0030443001600111>.
- Dixon, L. Q., & Wu, S. (2014). Home language and literacy practices among immigrant second-language learners. *Language Teaching*, 47(4), 414–449. <https://doi.org/10.1017/S0261444814000160>.
- Feng, Y. (2016). The effect of four different approaches to parent-child reading on young Chinese children's reading. *International Journal of Education and Literacy Studies*, 4(3), 47–53. <https://doi.org/10.7575/aiac.ijels.v4n.3p.47>.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. SAGE.
- Fishbein, M., & Ajzen, I. (1980). *Understanding attitudes and predicting social behavior*. Prentice-Hall.
- Forey, G., Besser, S., & Sampson, N. (2016). Parental involvement in foreign language learning: The case of Hong Kong. *Journal of Early Childhood Literacy*, 16(3), 383–413. <https://doi.org/10.1177/1468798415597469>.
- Froiland, J. M., Powell, D. R., Diamond, K. E., & Son, S. H. C. (2013). Neighborhood socioeconomic well-being, home literacy, and early literacy skills of at-risk preschoolers. *Psychology in the Schools*, 50(8), 755–769. <https://doi.org/10.1002/pits.21711>.
- Gai, Z. Q. (2019). *Be the best English planner for your child*. Foreign Language Teaching and Research Press.
- Garcia, E. E. (2015). Dual language learners. In A. Farrell, S. L. Kagan, & E. K. M. Tisdall (Eds.), *The SAGE handbook of early childhood research* (pp. 363–379). SAGE.
- Gardner, R. C. (1985). *Social psychology and second language learning: The role of attitude and motivation*. Edward Arnold.
- Gardner, R. C. (2004). *Attitude/motivation test battery: International AMTB research project*. The University of Western Ontario.
- Gonzalez, J. E., Bengochea, A., Justice, L., Yeomans-Maldonado, G., & McCormick, A. (2019). Native Mexican parents' beliefs about children's literacy and language development: A mixed-methods study. *Early Education and Development*,

- 30(2), 259–279. <https://doi.org/10.1080/10409289.2018.1542889>.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-80519-7>.
- Harris, M. (2013). *Language experience and early language development: From input to uptake*. Psychology Press.
- Heng, C. K., & Karpudewan, M. (2015). The interaction effects of gender and grade level on secondary school students' attitude towards learning chemistry. *EURASIA Journal of Mathematics, Science and Technology Education*, 11(4), 889–898. <https://doi.org/10.12973/eurasia.2015.1447a>.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>.
- Hu, X. Y., Zhou, J., Jin, L. X., Liu, H. P., & Zhang, L. (2022). Metaphor analysis: A comparative study of Chinese pre-school children's attitude towards English learning in Shanghai and Mudanjiang. *Cogent Education*, 9(1), 2120692. <https://doi.org/10.1080/2331186X.2022.2120692>.
- Kaiser, H. F. (1958). The varimax criterion for analytic rotation in factor analysis. *Psychometrika*, 23(3), 187–200. <https://doi.org/10.1007/BF02289233>.
- Kam Tse, S., Zhu, Y., Yan Hui, S., & Ng, H. W. (2017). The effects of home reading activities during preschool and Grade 4 on children's reading performance in Chinese and English in Hong Kong. *Australian Journal of Education*, 61(1), 5–23. <https://doi.org/10.1177/0004944116689099>.
- Kline, R. B. (2015). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.
- Koballa, T. R., Jr. (1988). Attitude and related concepts in science education. *Science Education*, 72(2), 115–126. <https://doi.org/10.1002/sci.3730720203>.
- Lai, J., Ji, X. R., Joshi, R. M., & Zhao, J. (2024). Investigating parental beliefs and home literacy environment on Chinese kindergarteners' English literacy and language skills. *Early Childhood Education Journal*, 52(1), 113–126.
- Lan, Y.-C., Torr, J., & Degotardi, S. (2012). Taiwanese Mothers' Motivations for Teaching English to Their Young Children at Home. *Child Studies in Diverse Contexts*, 2(2), 133–144. <https://doi.org/10.5723/csdc.2012.2.2.133>.
- Lau, C., & Richards, B. (2021). Home literacy environment and children's English language and literacy skills in Hong Kong. *Frontiers in Psychology*, 11, 569581. <https://doi.org/10.3389/fpsyg.2020.569581>.
- Liu, Y., & Zhao, H. (2020). Parental involvement and early English learning in Chinese families: A home literacy perspective. *Early Childhood Education Journal*, 48(5), 589–602.
- Luo, R., Song, L., Villacis, C., & Santiago-Bonilla, G. (2021). Parental beliefs and knowledge, children's home language experiences, and school readiness: The dual language perspective. *Frontiers in Psychology*, 12, 661208. <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.661208/full>.
- Maier, M. F., Greenfield, D. B., & Bulotsky-Shearer, R. J. (2013). Development and validation of a preschool teachers' attitudes and beliefs toward science teaching questionnaire. *Early Childhood Research Quarterly*, 28(2), 366–378. <https://doi.org/10.1016/j.ecresq.2012.09.003>.
- Ng, F. F. Y., & Wei, J. (2020). Delving into the minds of Chinese parents: What beliefs motivate their learning-related practices? *Child Development Perspectives*, 14(1), 61–67. <https://doi.org/10.1111/cdep.12358>.
- Osterlind, S. J. (2006). *Modern measurement: Theory, principles, and applications of mental appraisal*. Pearson/Merrill Prentice Hall.
- Riches, C., & Curdt-Christiansen, X. L. (2010). A tale of two Montréal communities: Parents' perspectives on their children's language and literacy development in a multilingual context. *Canadian Modern Language Review*, 66(4), 525–555. <https://doi.org/10.3138/cmlr.66.4.525>.
- Sénéchal, M. (2006). Testing the home literacy model: Parent involvement in kindergarten is differentially related to grade 4 reading comprehension, fluency, spelling, and reading for pleasure. *Scientific Studies of Reading*, 10(1), 59–87. https://doi.org/10.1207/s1532799xssr1001_4.
- Sénéchal, M., & LeFevre, J. A. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development*, 73(2), 445–460. <https://doi.org/10.1111/1467-8624.00417>.
- Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson.
- Tong, F., Zhang, H., Zhen, F., Irby, B. J., & Lara-Alecio, R. (2021). Supporting home literacy practices in promoting Chinese parents' engagement in their children's English education in low-SES families: An experimental study. *International Journal of Educational Research*, 109, 101816. <https://doi.org/10.1016/j.ijer.2021.101816>.
- Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38(1), 1–10. <https://doi.org/10.1007/BF02291170>.
- Van Bergen, E., van Zuijen, T., Bishop, D., & de Jong, P. F. (2017). Why are home literacy environment and children's reading skills associated? What parental skills reveal. *Reading Research Quarterly*, 52(2), 147–160. <https://doi.org/10.1002/rrq.160>.
- Vasilyeva, M., Dearing, E., Ivanova, A., Shen, C., & Kardanov, E. (2018). Testing the family investment model in Russia: Estimating indirect effects of SES and parental beliefs on the literacy skills of first-graders. *Early Childhood Research Quarterly*, 42, 11–20. <https://doi.org/10.1016/j.ecresq.2017.08.003>.
- Weigel, D. J., Martin, S. S., & Bennett, K. K. (2006). Mothers' literacy beliefs: Connections with the home literacy environment and pre-school children's literacy development. *Journal of Early Childhood Literacy*, 6(2), 191–211. <https://doi.org/10.1177/1468798406066444>.

- Xia, X. (2023). Parenting style and Chinese preschool children's pre-academic skills: A moderated mediation model of approaches to learning and family socioeconomic status. *Frontiers in Psychology, 14*, 1089386. <https://doi.org/10.3389/fpsyg.2023.1089386>.
- Yeung, S. S., & King, R. B. (2016). Home literacy environment and English language and literacy skills among Chinese young children who learn English as a second language. *Reading Psychology, 37*(1), 92–120. <https://doi.org/10.1080/02702711.2015.1009591>.
- Zhang, X., & Lau, C. (2022). Development and validation of a parent belief and attitude questionnaire on supporting young children's English as a second/foreign language development. *Journal of Multilingual and Multicultural Development, 1–19*. <https://doi.org/10.1080/01434632.2022.2105854>.
- Zhengzhou Statistics Bureau. (2023). *Annual wages of Zhengzhou urban and rural employees in private and non-private sector in 2022* [Internet]. Retrieved November 19, 2024, from https://tj.zhengzhou.gov.cn/u/cms/tj/statistical_2023/index.htm.