Linking Parental Beliefs and Preschoolers' English Learning Attitudes: Mediation Effects of the Home Literacy Environment

Qingyun Li [1,3], Kimberley Kong [1], Wen Li [1], Yichen Shang [2]

[1] *Universiti Sains Malaysia, USM 11800, Penang, Malaysia*
[2] *College of Education, University of Massachusetts Amherst, 813 N Pleasant St, Amherst, MA 01003, United State*
[3] *College of Liberal Arts, Chongqing Normal University, China*

***Abstract* – A growing body of literature highlights the critical influence of children's and adolescents' motivational orientations on their educational outcomes. For preschoolers learning English as a Foreign Language (EFL), successful acquisition hinges not only on external support—such as parental beliefs and the quality of the home literacy environment (HLE) - but also on their affective engagement with the learning process. This study explores the interrelationships among parental beliefs (PB), the HLE, and young children's affective attitudes (AA) toward EFL learning. A total of 405 primary caregivers participated in an online questionnaire, and the data were analyzed using partial least squares structural equation modeling (PLS-SEM). The results reveal that PB significantly shape the HLE, which subsequently exerts an indirect effect on children's AA through pathways including structured and unstructured English learning activities, as well as access to English-language resources at home. Importantly, the presence of English print materials was found to mediate the relationship between PB and preschoolers' affective attitudes. These findings underscore the importance of cultivating a rich literacy environment at home and suggest that enhancing parental beliefs may serve as an effective strategy for fostering more favorable emotional responses to EFL among young learners.**

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Corresponding author: Kimberley Kong,
Universiti Sains Malaysia, USM 11800, Penang, Malaysia
Email: kimberley.kong@usm.my

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1. Introduction

English is increasingly being incorporated into early formal education curricula in countries where it has traditionally been taught as a foreign language, reflecting its growing recognition as the global lingua franca [1]. Many East Asian nations place a strong priority on early English instruction [2]. In Korea, some children as young as one year old had already started participating in English education programs, according to a panel survey conducted between 2008 and 2013 [3]. According to the survey, workbooks are being used more frequently at home, while after-school English-speaking activities in childcare facilities and specialized language programs are becoming more and more popular. Even though FL education (Foreign language) for young learners is becoming more and more common, a substantial gap still exists in the understanding of how young children acquire and develop foreign language skills [4].

It is increasingly inaccurate to view English learning as confined solely to formal classroom environments [5]. Foreign language (FL) research has largely concentrated on instructional practices within school settings, based on the assumption that learners have minimal contact with the target language outside of school [6]. However, this view is being steadily contested in the context of English, which now serves as a dominant global lingua franca. To fully grasp how young learners acquire English, it is necessary to examine influences beyond school boundaries, particularly parental beliefs (PB). Evidence from prior research indicates that parents' perceptions of English education significantly shape the home literacy environment (HLE) being cultivated for their children [5], [7], [8]. The home environment serves as the foundational context for early childhood development and plays a pivotal role in nurturing both language and literacy acquisition.

Within this setting, the HLE is particularly significant, as it provides exposure to diverse reading materials and facilitates meaningful literacy interactions with caregivers [9]. The HLE has been widely recognized as vital for the emergence of literacy and language abilities not only among monolingual children (e.g., [9], [10]) but also among bilingual learners (e.g., [11], [12], [13]), reinforcing its relevance across linguistic populations. While the influence of home-based foreign language exposure and family literacy support is acknowledged as a potentially powerful factor in shaping children's attitudes toward English learning in environments where exposure is limited, this domain has received limited scholarly attention and remains under-investigated.

Attitudes play a crucial role in preschoolers' acquisition of EFL **English as a Foreign Language**. Children's affective experiences—including preferences, intentions, and interests—have a significant impact on their psychological preparedness and tendency for language acquisition. These experiences are reflected in their active involvement and behavioral tendencies toward learning [14]. Recent studies suggest that imposing English learning on young children may lead to a decline in their interest or motivation. Children who did not find learning tasks enjoyable tended to struggle with maintaining focus and interest, and perceived learning as difficult [15]. This suggests that a sincere desire and enjoyment of the learning activities are necessary for sustainable language learning. A range of factors influence children's acquisition of the English language, with the most important predictor of learning outcomes being attitudes toward English education [16]. These factors include exposure to the language, general language competency, personality traits, and attitudes toward English education. Preschoolers usually learn their second language subconsciously rather than explicitly, in contrast to adults [17]. The inherent incentive to socialize with peers in English is frequently lacking in EFL situations like China, where children acquire the language as a second language [5]. As a result, other tactics are required to increase engagement.

Scholars have posited that learners' attitudes significantly influence their success in language acquisition [18]. However, research examining young children's attitudes toward English learning, as well as their participation and engagement in related conversations is notably scarce, highlighting a critical gap in current studies. For example, some scholars discovered that Korean preschool-aged children hold positive attitudes toward learning English, but their study failed to explain how the home learning process influences these young learners' interests [7].

Additionally, when the researchers conducted literature review, it was difficult to collect adequate research papers. The researchers used the keywords "early child English learning," "English learning attitude," and "home English learning," when searching and set the time period as 2010-2024. However, only 36 research papers were found. Given the significance of early childhood English education, the volume of research on this topic remains insufficient, indicating a huge gap in this area. This issue is further intensified by the risk that introducing foreign language instruction in environments lacking adequate home literacy support may negatively impact children's attitudes and motivation toward language learning, potentially increasing their language anxiety [16].

This study draws on data collected in Henan Province, China, which is reported to have the largest population of EFL learners nationwide [19], [20]. China, along with several other Asian countries, began introducing early English instruction in the early 2000s, a trend referred to as the "third wave" of early English language learning [21]. Marked regional disparities in access to English education [22], combined with the influential role of parents in supporting children's English learning [6], [23], [24], make China a particularly relevant context for investigation. By examining how the HLE affects preschoolers' attitudes toward English learning, this study aims to shed light on the mechanisms of early EFL development within Chinese families. Additionally, it seeks to situate these findings within China's broader educational and sociocultural landscape, as well as in other similar international contexts. The following sections provide a review of prior research concerning preschoolers' HLE and their affective responses to EFL learning.

1.1. Parental Beliefs towards Preschoolers' English Learning

Parents' convictions about the value of an English education can be observed in their desire for English-language schools. Parental beliefs (PB) play a pivotal role in determining the age at which English instruction begins, as well as the teaching approaches and program choices implemented in early childhood concerning EFL education **English as a Foreign Language** [7]. The majority of parents also think that teaching English to young children is far more beneficial [5], [16]. Given that parents are the driving force behind the early English education craze, the authors can conclude that PB (parental beliefs) exert a substantial influence on the English education of preschoolers. As [5] characterized PB as general perceptions regarding child development and learning.

These beliefs encompass views regarding the appropriate form of home literacy support for children at different developmental stages, the key skills children are expected to acquire before formal schooling begins, and the importance of active parental involvement throughout their learning process. According to [25], it is noted that PB directly influence parental behaviors, the upbringing of preschool children, and their experiences with language, which, in turn, affects children's attitudes towards language learning. Empirical research from diverse contexts supports these theoretical claims. In China, parental beliefs regarding early literacy play a crucial role in determining the extent of literacy activities conducted within the home environment [5]. In Korea, parental beliefs influence decisions about the appropriate starting age, teaching methods, and educational programs in early childhood English learning [26]. In China, parents who recognize the importance of the Home Literacy Environment (HLE) for their children's academic achievement are more likely to invest in literacy materials and participate actively in home-based literacy practices [27]. In Hong Kong, stronger beliefs in the benefits of reading to preschoolers are associated with greater engagement in reading activities, larger book collections, earlier initiation of reading practices, and more interactive reading experiences [28]. These observations align with the findings of [29], which indicate a significant correlation between PB and home literacy practices. This includes elements such as having English books available at home, how often English-related activities occur, and the regularity with which parents engage in reading English books with their children.

Studies emphasize that PB play a crucial role not only in forming the HLE but also in shaping children's attitudes toward language acquisition. Through HLE, parents indirectly instill the value and enjoyment of language learning in their preschool children, thereby laying a crucial foundation for fostering children's interest in learning [29]. For example, [7] reported that parents who strongly believed in their children's capacity to learn English in kindergarten were more inclined to engage in shared book reading and provide abundant literacy materials, including English books at home. This form of home literacy support—characterized by frequent shared book reading and access to children's books—shows a strong correlation with children's learning motivation and academic performance. However, there exists a notable research gap in these studies, as the perspectives of Chinese preschoolers on their learning experiences across the different dimensions of English home learning environments have not been effectively captured. This includes formal English learning, informal English learning, and the availability of English learning resources. Based on this, the following hypotheses are proposed.

Hypothesis 1 (H1): *Parental beliefs positively influence formal English learning.*

Hypothesis 2 (H2)*: Parental beliefs positively influence informal English learning.*

Hypothesis 3 (H3)*: Parental beliefs positively influence access to English learning resources.*

1.2. Home Literacy Environment towards Preschoolers' English Learning

The Home Literacy Environment (HLE) is a complex, multifaceted concept that covers diverse literacy-related interactions, resources, and family attitudes. It involves shared activities like joint reading, parental teaching of print skills, singing, storytelling, and watching educational TV shows. Additionally, it includes the availability of learning materials such as books at home, along with parental beliefs (PB) and attitudes toward literacy [25].

Based on the Home Literacy Model introduced by [30], the HLE is categorized into formal and informal literacy contexts, alongside the accessibility of literacy resources. The formal literacy environment involves activities focused on written language, where adults explicitly instruct print-related skills such as letter identification and phonics. Conversely, the informal literacy environment centers on building comprehension and meaning from written text, typically occurring during shared reading, where adults highlight the meaning of the material. Literacy resources consist of materials that aid literacy growth, including books, newspapers, educational software, and digital devices. These resources play a vital role in supporting learning by offering materials that improve reading, writing, speaking, and understanding abilities.

Previous studies suggest that parents' diverse beliefs lead to the adoption of varied HLEs, including interactions and literacy resources, all of which influence preschoolers' English education. These distinct interactions and resources, in turn, shape preschoolers' affective attitudes towards learning English [26], [27]. For instance, [31] recently investigated Chinese parents with limited English skills and discovered that their involvement in English-centered literacy activities at home led to increased engagement in their children's English learning. Consequently, their children in first grade showed heightened enthusiasm for learning English.

As [32] presented results supporting this perspective, highlighting a positive relationship between children's enjoyment of learning English and factors like the accessibility of learning materials, the richness of the home English learning environment, and the variety of literacy and language activities conducted with parents.

However, [32]'s study did not delineate specific types of literacy environments that could foster positive English learning attitudes among preschoolers at home. The HLE clearly holds a significant influence on preschoolers' attitudes toward learning by combining formal activities like structured reading and skill instruction, informal experiences such as storytelling and play, along with diverse literacy materials. Each element contributes differently whereby formal activities foster discipline and curiosity, informal learning enhances enjoyment and natural interest in learning, and diverse resources cater to individual interests and encourage a positive attitude towards education. Collectively, these aspects of HLE create a dynamic and supportive learning atmosphere for preschoolers, highlighting the need to understand their distinct impacts on learning attitudes.

Given the insights from [32], which underscore the significant correlation between the HLE and preschoolers' enjoyment of English learning, there is a clear necessity to further elucidate the specific impact of each HLE component on preschoolers' affective learning attitudes. While [32] highlight the overarching influence of resources, the quality of learning environments, and the diversity of literacy and language activities, their study stops short of identifying which particular aspects of HLE most effectively promote positive attitudes towards English learning among preschoolers. This discrepancy highlights the need for a nuanced exploration of how formal learning activities, informal learning experiences, and the provision of varied literacy resources each uniquely contribute to fostering a love for learning English. By analyzing the distinct functions of each HLE element, the authors aim to offer tailored recommendations for parents and educators to create nurturing and engaging environments that cater to the diverse needs and preferences of young children, thereby enhancing their learning achievements and attitudes toward acquiring English. Accordingly, the following hypotheses are put forward:

Hypothesis 4 (H4)*: Formal English learning activities have a positive impact on preschoolers' emotional attitudes toward learning English.*

Hypothesis 5 (H5)*: Informal English learning experiences contribute positively to preschoolers' affective attitudes toward English acquisition.*

Hypothesis 6 (H6)*: Availability of English learning materials positively affects preschoolers' attitudes toward English learning.*

1.3. Preschoolers' Affective Attitudes towards English Learning

Attitude is a well-established concept utilized in analysis to understand the intricacies of one's interests, thoughts, emotions, and actions. It is characterized as a marker for an individual to express their feelings of like or dislike towards an object, person, or event [18]. According to the theory of Utilitarian Function proposed by [33], children are motivated by self-interest, and attitudes can serve those interests by being instrumental in achieving the desired outcomes. These attitudes, influenced by interest, beliefs, and motivation, reflect children's tendencies, expectations, and demands for learning a foreign language.

The process of learning signifies a positive transformation across an individual's affective, cognitive, and behavioral domains, reshaping beliefs, thoughts, and actions [33]. As [33] conceptualized attitude development having three dimensions namely:

(a) An affective or emotional component, reflecting an individual's feelings and sentiments toward the object;
(b) The cognitive component, involving one's thoughts and beliefs regarding the attitude object;
(c) The behavioral component, representing a person's inclination to respond or behave in a particular manner toward that object.

However, some critics posit that affective attitude is the primary facet of learning attitudes, arguing that affect and emotions can precede or result from cognitive and behavioral attitudes [31]. Young children, with their relatively limited cognitive abilities to accurately assess their skills, tend to perceive their positive and negative affects more readily and accurately. Interest and anxiety, which are related to learning EFL, are shown to significantly correlate with achievement in English [16]. Furthermore, defining attitude in terms of affect is consistent with the attitude construct used by caregivers and educators, simplifying the differentiation between positive and negative attitudes [34].

Sustaining a positive emotional attitude toward language learning not only encourages ongoing participation but also significantly contributes to successful language acquisition outcomes [16]. As [15] highlighted that the inner emotions of foreign language learners profoundly affect their perceptions and attitudes towards the language being learned.

Echoing this, [2] emphasizes the importance of nurturing a positive affective attitude, particularly during the preschool years, as this period signals the start of language acquisition and sets the stage for future learning. Correspondingly, [21] point out that as preschoolers embark on their English learning journey, their prior exposure to foreign languages and their affective attitude towards learning them can significantly influence their subsequent language acquisition. Nonetheless, it is essential to acknowledge that PB about EFL play a crucial role in shaping preschoolers' affective learning attitudes.

Given that PB significantly shape both the HLE [5] and indirectly impact preschoolers' affective attitudes towards learning [7], [35], [36], the use of mediation analysis becomes essential in research. This method is crucial for clarifying the complex interplay among these elements. It facilitates a thorough investigation into the ways PB directly influence HLE and its indirect impact on preschoolers' affective attitudes, while also examining how HLE acts as a mediator in this process. Undertaking such research would offer critical insights into the intricate processes by which PB are converted into preschoolers' learning attitudes, highlighting the complexity of early learning environments. Hence, the following hypotheses are formulated:

Hypothesis 7 (H7)*: Formal English learning serves as a mediator in the link between parental beliefs and preschoolers' emotional attitudes toward learning English.*

Hypothesis 8 (H8)*: Informal English learning functions as an intermediary between parental beliefs and preschoolers' affective attitudes toward English acquisition.*

Hypothesis 9 (H9)*: Access to English learning resources mediates the association between parental beliefs and preschoolers' attitudes toward learning English.*

1.4. The Present Study

In light of the scarce research exploring the Home Literacy Environment (HLE) in English as a Foreign Language (EFL) settings and its effect on preschoolers' affective attitudes (AA) toward English learning, this study aims to investigate how parental beliefs (PB) influence the formation of an English-oriented HLE and, in turn, how this environment impacts the AA of Chinese preschoolers toward learning English (refer to Figure 1 for the conceptual framework). The research questions are outlined as follows:

(1) How significantly do parental beliefs about English learning impact the home literacy environment?
(2) To what degree does the home literacy environment affect the affective attitudes of preschoolers towards English learning?
(3) To what degree does the home literacy environment function as a mediator between parental beliefs regarding English learning and preschoolers' emotional attitudes toward acquiring the English language?

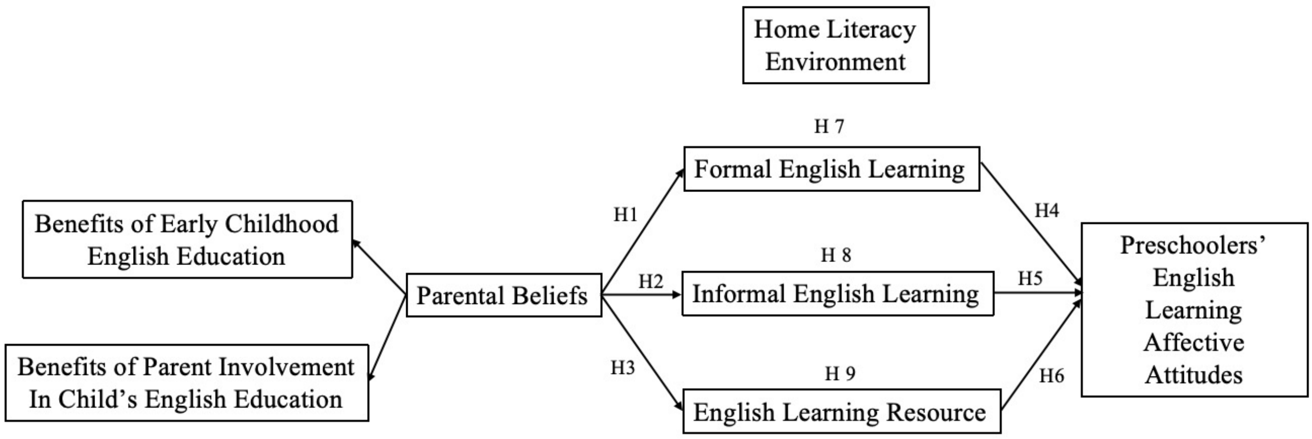

Figure 1. Conceptual model

2. Methodology

This section describes the research methodology, ensuring transparency and reproducibility. The selected methods were designed to engage respondents effectively, validate key measurements, and systematically document all research procedures.

2.1. Respondents

In the study, purposive sampling aimed at identifying potential participants across 14 administrative districts in Zhengzhou, China, was employed. According to [37], purposive sampling ensures the selection of participants who can provide valuable contributions to the research. By using purposive sampling, the researcher was able to ensure that the sample accurately represented preschool-aged children engaged in home-based English learning in Zhengzhou, China. Eligibility for participation in this study was determined based on two criteria:

(a) The participant was required to have at least one child between the ages of 3 and 6;
(b) The participants must have supported their child/children in learning English, either at home or elsewhere, whether in the past or present.

As [38] suggest, recruiting more than 385 participants is advisable when the overall population exceeds 100,000 to account for population heterogeneity. Additionally, recent research has recommended increasing the sample size to minimize bias commonly associated with online surveys. Consequently, the researcher collected more than 400 respondents. Wenjuanxing [39], a Chinese online platform providing paid research services, was used to distribute the study invitations. The call for the study was published in major Chinese social media platforms, such as WeChat and Weibo, between January and March 2024. In total, 439 questionnaires were administered to participants who met the eligibility criteria; 421 of them were returned to the researcher, yielding a 96% response rate. Of the returned questionnaires, 16 responses were excluded from data analysis due to the facts that they did not have a kid or incomplete responses. Ultimately, 405 valid questionnaires remained for analysis.

2.2. Measurements

Family Socioeconomic Status (SES): SES was assessed using a questionnaire that gathered information on parents' highest educational attainment and the household's yearly income. Education levels were reported on a six-point scale, ranging from 1 = below junior middle school to 6 = postgraduate (doctoral level). Household income was recorded on a ten-point scale, with 1 indicating less than 20,000 yuan and 10 representing over 80,000,000 yuan.

In this study, SES was operationalized as a composite index derived from the standardized scores of parental education and annual income [5], [40].

Parental Beliefs (PB) regarding Preschoolers' English Education: The PB scale was adapted from earlier Chinese research conducted by [5] and [29], as their instruments closely aligned with the objectives of this study. This 11-item scale assessing PB consists of two subscales: one addressing the perceived value of early English education and the other focusing on parental involvement in their child's English learning. The first subscale (8 items) explores parents' perceived importance of English education, reasons for investing in it, its global significance, and the potential competitive advantages it may offer in the future.

The second subscale, 3 items, assesses parent involvement in the child's English education that includes engagement, provision of learning resources and various home EFL activities. Two experts in early childhood education and EFL validated the content of all 11 items on the scale. Following data collection during the pilot study, both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were carried out, using a factor loading threshold of 0.6 or above for item retention [38]. Participants responded to the 11 items using a five-point Likert scale (e.g., 1 = Strongly disagree, 5 = Strongly agree). Higher scores reflect strong parental beliefs about the significance of early English language learning and the essential role of active parental involvement. The internal consistency of both subscales exceeded the acceptable threshold of 0.70 (see Table 1).

Home literacy environment: Parents reported on the home English language learning environment, including the frequency of their child's English learning experience at home. The 17-item scale was adapted from previous research [5], [32], [36]. The scale is divided into three subcomponents: formal English learning (7 items), informal English learning (7 items), and English learning resources (3 items). Participants rated the frequency of each activity on a five-point Likert scale (e.g., 1 = Never, 5 = Very often). High scores signify a greater provision of learning environments by parents. Table 1 provides Cronbach's α and item-scale construct descriptions.

Preschoolers' affective attitudes toward English learning: The scale of measuring preschoolers' 9-item affective attitudes towards English learning was adapted from Attitude/Motivation Test Battery by [14]. Each item was rated on a five-point Likert scale ranging from 'Strongly disagree' to 'Strongly agree.' Higher scores indicate more favorable attitudes toward English learning among preschoolers.

Cronbach's α coefficients and comprehensive descriptions of the scale constructsare provided in Table 1.

Table 1. Parental questionnaire scale

Scale	Subfactor	No. of items	Example of Item	Cronbach's α
Parental Beliefs About Preschoolers English Education	Beliefs of early childhood EFL learning	8	"I believe that learning English is crucial for my child's overall growth and development"	0.81
	Beliefs of parental involvement	3	"I believe my interactions with my child during the process of English learning are very important"	
Home Literacy Environment	Formal English learning	7	"Carry out writing exercises with my child to help him learn alphabets and words"	0.82
	Informal English learning	7	"Sing English songs or rhymes to or with my child, including bedtime songs"	0.86
	English learning resource	3	"Provide my child with multi-media/ digital materials (e.g., DVDs, songs, audio books)"	0.81
Preschoolers' Affective Attitudes Toward English Learning	Affective attitudes	9	"My child likes English learning activities; he looks forward to studying more English in the future"	0.83

2.3. Procedure

As the final sample of this study comprises non-English speakers (e.g., Chinese caregivers), translation and back-translation of the instruments are undertaken. According to [37], it was mentioned that this procedure was significant because cultural differences could lead to non-equivalence that may confound the results. To verify the accuracy of the translation, a back-translation method was employed with two bilingual Chinese-English translators, as recommended by [38]. The draft was evaluated by three experts: one specializing in early childhood education, another affiliated with an English language school, and a third expert with methodological expertise.

Based on expert feedback, slight modifications were applied to the questionnaire.

Subsequently, five Chinese parents of preschoolers learning English provided input regarding the questionnaire's format, wording, and design. The updated questionnaire was pilot tested with 60 participants and showed an acceptable minimum internal consistency of 0.70. Prior to distribution, ethical approval was secured from the university. Among the respondents—86% of whom were parents—the average completion time ranged from 10 to 15 minutes.

3. Data Analysis and Results

The initial descriptive statistical analysis was performed using IBM SPSS 26.0, with family demographic characteristics summarized in Table 2. Subsequently, the research model was tested via structural equation modeling employing the partial least squares (SEM-PLS) technique in SmartPLS version 3.

SEM-PLS is widely acknowledged as a key statistical method in multiple disciplines, including educational research [41]. It was selected due to its effectiveness in identifying causal relationships and estimating models with higher-order constructs [38], [42], [43]. Following [38] guidance, the analysis was conducted in two phases: first, assessing the measurement model, and then evaluating the structural model.

Table 2. Family demographic information

Demographic Factors	Frequency
Child Gender	
Male	224 (55.3%)
Female	181 (44.7%)
Child Age	
3 years	92 (22.7%)
4 years	204 (50.4%)
5 years	70 (17.2%)
6 years	39 (9.7%)
Respondents	
Mothers	223 (55.1%)
Fathers	126 (31.1%)
Caregivers	56 (13.8%)
Parental Highest Education Qualification	
High school and below	43 (10.6%)
Vocational diploma	77 (19%)
Undergraduate Degree	245 (60.5%)
Postgraduates	40 (9.9%)
Family Annual Household Income Range	
Less than ￥ 60, 000	2 (0.50%)
￥ 60,000 - ￥ 150,000	158 (39.01%)
￥ 150,000 - ￥ 300,000	141 (34.81%)
￥ 300,000 - ￥ 500,000	89 (21.98%)
More than ￥ - 500,000	15 (3.7%)

3.1. Common Method Bias Considerations

Before performing the PLS analysis, several steps were taken to minimize common method variance. Initially, the full collinearity approach proposed by [43] was applied, confirming the absence of problematic multicollinearity. Variance Inflation Factor (VIF) values ranged between 1.02 and 1.44, which is well below the accepted cutoff of 3.3 [38]. Additionally, Harman's single-factor test was conducted to assess common method bias, revealing no significant issues since the first unrotated factor accounted for only 27% of the variance, below the acceptable 40% threshold [43]. These findings indicate that common method variance (CMV) is unlikely to have a major impact on the results of this study.

3.2. Assessment of the Measurement Model

During the evaluation of the measurement model, construct reliability was examined using composite reliability (CR) and convergent validity. According to [38], CR values should be greater than 0.70. As presented in Table 3, all constructs met this requirement. Convergent validity was confirmed by item loadings exceeding 0.70 and an average variance extracted (AVE) of at least 0.50, aligning with established standards [43]. The constructs also showed strong internal consistency, with Cronbach's alpha values above 0.80, satisfying the accepted criteria.

In the concluding phase of the measurement model assessment, discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT) criterion suggested by [40]. All HTMT values fell below the 0.85 cutoff, indicating satisfactory discriminant validity among the constructs measured.

Table 3. Measurement model

First-order constructs	Second-order construct	Items	Indicator Reliability	Internal Consistency Reliability		Convergent Validity
			Outer Loadings	CA	CR	AVE
			>0.60	>0.7	>0.7	>0.5
Parent Belief about Early Childhood English Education (PBEC)		PBEC1	0.85	0.91	0.92	0.60
		PBEC2	0.80			
		PBEC3	0.74			
		PBEC4	0.79			
		PBEC5	0.72			
		PBEC6	0.78			
		PBEC7	0.77			
		PBEC8	0.76			
Parent Belief about their Involvement in Child's English Education (PBPI)		PBPI1	0.86	0.81	0.89	0.72
		PBPI2	0.85			
		PBPI3	0.83			
	Parent Belief (PB)	PBEC	0.97	0.91	0.92	0.52
		PBPI	0.74			
Formal English Learning (FEL)		FEL1	0.81	0.92	0.93	0.67
		FEL2	0.81			
		FEL3	0.82			
		FEL4	0.82			
		FEL5	0.81			
		FEL6	0.83			
		FEL7	0.81			
Informal English Learning (IEL)		IEL1	0.80	0.90	0.92	0.62
		IEL2	0.77			
		IEL3	0.80			
		IEL4	0.73			
		IEL5	0.82			
		IEL6	0.81			
		IEL7	0.79			
English Learning Resource (ELR)		ELR1	0.86	0.83	0.93	0.75
		ELR2	0.88			
		ELR3	0.86			
Affective Attitude (AA)		AA1	0.80	0.93	0.94	0.63
		AA2	0.82			
		AA3	0.78			
		AA4	0.78			
		AA5	0.81			
		AA6	0.78			
		AA7	0.79			
		AA8	0.79			
		AA9	0.79			

3.3. Structural Model Assessment

Once the data suitability was confirmed, the structural model was assessed. Multicollinearity was minimal, with VIF values ranging from 1.02 to 1.42 as shown in Table 4, all well under the commonly accepted limit of 3.3 [38].

Using non-parametric methods, hypotheses were tested via bootstrapping with 10,000 resamples.

The findings demonstrated significant positive impacts of parental beliefs (PB) on formal English learning (FEL) ($\beta = 0.57$, $t = 16.98$, $p < .001$), informal English learning (IEL) ($\beta = 0.56$, $t = 18.20$, $p < .001$), and English learning resources (ELR) ($\beta = 0.55$, $t = 18.03$, $p < .001$), thereby confirming hypotheses H1, H2, and H3.

These results indicate that parental beliefs substantially influence the English home literacy environment for preschoolers.

Moreover, the results supported H4, showing that FEL positively influences preschoolers' academic attitudes toward English learning ($\beta = 0.27$, $t = 5.94$, $p < .001$), indicating that greater involvement in family literacy activities enhances children's attitudes toward learning English. A significant positive relationship was also identified between informal English learning (IEL) and affective attitudes (AA) ($\beta = 0.20$, $t = 3.88$, $p < .001$), thereby supporting H5 and highlighting the beneficial role of informal learning in promoting favorable attitudes.

Similarly, ELR was found to positively impact AA ($\beta = 0.38$, $t = 7.97$, $p < .001$), validating H6 and emphasizing the importance of available learning resources.

Additional analysis following the mediation framework proposed by [42] identified significant indirect effects. FEL mediated the connection between PB and AA ($\beta = 0.15$, $t = 5.00$, $p < .001$); informal English learning (IEL) served as a mediator between PB and AA ($\beta = 0.11$, $t = 3.70$, $p < .001$); and ELR mediated the impact of PB on AA ($\beta = 0.21$, $t = 7.51$, $p < .001$). These outcomes provide empirical support for hypotheses H7, H8, and H9, demonstrating the mediating functions of FEL, IEL, and ELR in the relationship between parental beliefs and preschoolers' attitudes toward learning English as a foreign language.

To evaluate the robustness of the structural model, key indicators including R^2 (coefficient of determination), f^2 (effect size), and Q^2 (predictive relevance) were analyzed.

The model explained 43.9% of the variance in FEL, 50.9% in IEL, 36.7% in ELR, and 45.5% in AA, reflecting strong explanatory capability (refer to Table 4).

According to [43], an f^2 value of 0.02 indicates a small effect, 0.15 reflects a moderate effect, and 0.35 or higher signifies a large effect. In the current study, parental beliefs (PB) exhibited large effect sizes on formal English learning (FEL) ($f^2 = 0.56$), informal English learning (IEL) ($f^2 = 0.63$), and English learning resources (ELR) ($f^2 = 0.46$), emphasizing the strong impact of PB on shaping both structured and unstructured English learning experiences, as well as the provision of learning materials.

On the other hand, the effect of FEL on AA was relatively small ($f^2 = 0.09$), while IEL's impact on AA was minimal ($f^2 = 0.01$), suggesting only a slight influence. Conversely, English learning resources (ELR) showed a moderate effect on preschoolers' affective attitudes ($f^2 = 0.20$), suggesting that both the accessibility and quality of these resources significantly contribute to shaping children's perspectives on learning English as a foreign language.

Finally, the Q^2 values were examined to assess the predictive relevance of the endogenous variables. All endogenous constructs yielded Q^2 values above zero, indicating that the model possesses satisfactory predictive capability for its latent variables. Additional details are presented in Table 4.

Table 4. Assessment of structural model with bootstrapping procedure

Path Hypothesis					**Bootstrapped CI**	**BC**			
Variable Relationship	*Path Coefficient Beta (β)*	*Standard Deviation (STDEV)*	*TStatistics (|O/STDEV|)*	*PValues*	*5% LL*	*95% UL*	*VIF*	*f^2*	*Decision*
H1 PB -> FEL	0.57	0.03	16.98	p < .001	0.50	0.61	1.02	0.56	Supported
H2 PB -> IEL	0.56	0.03	18.20	p < .001	0.51	0.61	1.02	0.63	Supported
H3 PB -> ELR	0.55	0.03	18.03	p < .001	0.49	0.59	1.02	0.46	Supported
H4 FEL -> AA	0.27	0.05	5.94	p < .001	0.20	0.35	1.44	0.09	Supported
H5 IEL -> AA	0.20	0.05	3.88	p < .001	0.11	0.28	1.44	0.01	Supported
H6 ELR -> AA	0.38	0.05	7.97	p < .001	0.29	0.45	1.44	0.20	Supported
H 7 PB->FEL->AA	0.15	0.03	5.00	p < .001	0.11	0.20			Supported
H 8 PB->IEL->AA	0.11	0.03	3.70	p < .001	0.06	0.17			Supported
H 9 PB->ELR->AA	0.21	0.03	6.79	p < .001	0.15	0.25			Supported
			R^2			**Q2_predict**			
Formal English Learning			0.44			0.29			
Informal English Learning			0.51			0.31			
English Learning Resource			0.77			0.27			
Affective Attitudes			0.46			0.28			

Notes: PBEC (Benefit of Early Childhood English Education); PBPI (Benefit of Parent Involvement in Child's English Education); FEL (Formal English Learning); IEL (Informal English Learning); ELR (English Learning Resource); AA (Affective Attitude); VIF (Variance Inflation Factor), Effect size (f^2), Coefficient of Determination (R^2), Predictive Relevance (Q^2)

4. Discussion

This study explores the intricate relationships among Parental Beliefs (PB), the home literacy environment (HLE), and preschoolers' affective attitude (AA) to learning English as a foreign language (EFL), emphasizing the unique mediating functions of different HLE components. The findings demonstrate that PB significantly shape various elements of the HLE—including formal English learning (FEL), informal English learning (IEL), and English learning resources (ELR)—which, in turn, influence young children's affective engagement with EFL learning.

The analysis indicates that PB significantly shape the HLE, leading to positive influences on preschoolers' engagement and motivation towards EFL. However, the indirect effects of HLE components on affective attitudes vary [16], [45]. Specifically, the ELR demonstrates a more pronounced impact on fostering positive affective attitudes towards EFL learning. This suggests that access to a variety of English learning materials is essential for encouraging preschoolers' enthusiasm and willingness to learn [35]. Meanwhile, the effects of FEL and IEL on preschoolers' learning attitudes show marginal difference, challenging previous assumptions (e.g. [36]) about the suitability of FEL, characterized by its traditional reliance on textbooks and teacher-centered methods, for preschoolers who thrive on implicit learning methods. Instead, the findings indicate that both FEL and IEL significantly contribute to developing preschoolers' positive affective attitudes in EFL, possibly due to the evolving nature of FEL methodologies that incorporate more interactive and engaging elements similar to those used in IEL.

Overall, the results of this study align with the findings of [7] and [44], emphasizing the important roles that both structured and unstructured literacy activities play in supporting the learning progress of young EFL learners.

The mediation analysis reveals that while all indirect effects of different HLE components on affective attitudes were significant, their impacts varied [38]. The role of ELR was particularly noteworthy, suggesting that resources may exert a more substantial impact on shaping positive attitudes towards English learning than formal or informal learning activities alone [32]. This can be attributed to the direct, engaging, and diverse exposure these resources provide to the language. ELR, such as books, games, and multimedia, offer immersive and varied linguistic experiences that are both engaging and enjoyable, fostering a deeper emotional connection to learning. This contrasts with the often-structured nature of formal learning and the less varied exposure of informal activities, making ELR more effective in cultivating a positive attitude towards English learning.

5. Conclusion

This study concludes by emphasizing the pivotal influence of the HLE and PB on preschoolers' motivation and active participation in learning EFL. In fostering positive emotional attitudes toward EFL learning, the findings reveal the intricate mediating roles of FEL, IEL, and—most notably—ELR. By integrating both structured instruction and flexible, resource-enriched learning experiences, the study advocates for a comprehensive and holistic approach to early EFL education. The results call on parents, educators, and policymakers to collaborate in building environments that nurture favorable attitudes and sustained interest in EFL learning. By deepening insights into early language acquisition, these findings offer meaningful guidance for shaping educational policies that accommodate the diverse needs and learning styles of young children.

In a setting where formal EFL instruction in preschools and language schools has historically been restricted by government rules, this study offers a thorough analysis of home-based EFL learning that is heavily influenced by family ideas. Chinese parents who were interested in helping their kids develop their EFL skills used to favor language schools [21], [27]. Nonetheless, this study highlights the critical role of parental beliefs in influencing early EFL learning experiences and points to the increasing emphasis on home-based learning as a key educational approach. These results highlight the ways in which limitations in educational policies have reinterpreted home-based methods and family participation in early language acquisition.

The results indicate that educational policies should be revised to better facilitate home-based learning by providing parents with suitable resources and explicit guidance to strengthen EFL instruction. Such policies could include making a wide array of English learning resources more accessible to families, ensuring that quality materials are not a privilege but a norm accessible to all. The implications extend to educators and language institutions, who are encouraged to engage with parents beyond traditional settings. Offering online workshops, digital educational content, and access to parent support communities can equip parents with the necessary skills and resources to actively support their children's language learning process. This collaborative effort aims to create a seamless educational experience that bridges home and formal settings, reinforcing language skills consistently. EFL learning environments are significantly shaped by parental beliefs. As such, it is crucial to have educated conversations with parents regarding successful EFL learning techniques and to match educational methods with their expectations.

These collaborative initiatives improve the overall quality of education and guarantee that home-based language teaching is directed by a mutual understanding of its goals and methods.

This study, conducted within a specific cultural context and relying on self-reported data, may be limited in terms of the generalizability of its findings and the accuracy of participants' responses. Moreover, the cross-sectional design restricts the ability to establish causal relationships between PB, the HLE, and preschoolers' affective attitudes. Future studies should consider longitudinal designs to track changes in engagement and motivation in EFL learning over time across different cultural settings. Additionally, exploring the distinct effects of various types of English learning resources on children's engagement and motivation could provide more actionable insights. Furthermore, in-depth qualitative studies could uncover richer insights into how parents and children experience and manage the EFL learning journey at home.

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