

Home Literacy Environment of Chinese Pre-Schoolers: The Effect of Family Income on Bilingual Reading Resources and Parental Reading Habits

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Abstract—The home literacy environment plays a crucial role in shaping young children's literacy development, particularly in bilingual contexts. Parental involvement and access to resources are key factors in fostering bilingual literacy, but disparities may exist across socioeconomic backgrounds. This study examined the types of bilingual reading resources available in the homes of Chinese pre-schoolers, the reading habits of their parents in both Chinese and English, and how these resources and habits differ across family income levels. It also explored the frequency and nature of shared reading activities and the strategies parents use to support reading development, with a focus on income-related disparities in bilingual literacy practices and resources. This study employed a quantitative research design in which a structured survey was adapted to assess key aspects of the home literacy environment, including the availability of Chinese parents' bilingual reading materials and reading habits in both Chinese and English languages. The sample of the study consisted of 975 parents. Data were analysed using descriptive statistics and Welch's ANOVA to examine variations across monthly income groups. The study found that families are committed to supporting bilingual literacy by providing diverse Chinese and English reading materials. However, low-income families face significant challenges in accessing resources and maintaining consistent reading practices compared to higher-income families. The findings highlight the need for targeted interventions to reduce disparities in bilingual resource availability and encourage equitable literacy opportunities for all children, particularly those from lower-income households.

Index Terms—home literacy environment, Chinese pre-schoolers, literacy development, monthly income

I. INTRODUCTION

Children's language skills play a crucial role in their academic success, influencing their ability to comprehend lessons, engage in classroom discussions, and develop literacy skills (Lenhart & Lingel, 2023). Strong language abilities in early childhood contribute to better academic performance in both primary and secondary education. The home literacy environment (HLE) plays a critical role in shaping children's literacy development by providing access to reading materials, opportunities for adult-child reading interactions, and parental involvement in literacy-related activities. Research consistently highlights its significant influence on literacy outcomes (Marjanovič Umek et al., 2005; Martini & Sénéchal, 2012; Torppa et al., 2022; Zhang et al., 2024a), as children exposed to varying levels of literacy resources and experiences demonstrate differences in preparedness for formal education. These early disparities often translate into variations in reading skills and academic achievement upon entering school (Burgess, 2002; Ricciardi et al., 2021). Moreover, the quality of the HLE has long-term consequences for academic success, particularly during the foundational years when language and literacy development is most critical. Parental involvement in reading activities nurtures early literacy and language skills, forming the basis for future academic achievement and explaining differences in school readiness and early literacy skills (Burgess, 2002, 2005). Consequently, the availability of literacy resources and the frequency of literacy-related activities are recognized as key determinants of long-term literacy outcomes (Sénéchal & Lefevre, 2014).

In China, the importance of the HLE has gained increasing recognition in educational research. Studies indicate that families providing a rich literacy environment—marked by access to diverse reading materials and consistent reading routines—have a positive effect on children's literacy skills (Huo & Zhang, 2024; Yuan et al., 2024; Zhang et al., 2024). However, the influence of socioeconomic factors and regional cultural practices on the HLE is still underexplored, especially in smaller urban areas like Lanzhou City. With rapid urbanization and evolving family dynamics, it is important to understand how these changes affect parental involvement in early literacy practices, as this is essential for promoting

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school readiness in young children.

While much of the existing research on home literacy factors has focused on Western contexts and alphabetic languages, its relevance to Mandarin-learning pre-schoolers in China remains underexplored, particularly in regions like Lanzhou. Most studies emphasize HLE components in large metropolitan areas, often overlooking the distinct cultural and socioeconomic factors that influence literacy practices in smaller urban settings. These variations are vital for understanding regional disparities in literacy development and tailoring interventions to address specific local needs. The bilingual context in regions like Lanzhou—where Mandarin, local dialects, and English intersect—further complicates literacy support at home. Research suggests that factors such as resource availability, parental language practices, and socioeconomic conditions significantly shape children’s bilingual literacy development (Lewis et al., 2016; Luo et al., 2021). By examining these dynamics, this study aims to address gaps in the literature and provide insights for developing contextually relevant strategies to support families in fostering early literacy.

II. LITERATURE REVIEW

A wealth of research has highlighted the pivotal role that home literacy environments (HLEs) play in children's language and literacy development (Liu et al., 2018). Scholars argue that HLEs are shaped by culture-specific elements, such as language systems and parenting beliefs (Liu et al., 2018). Chinese HLE is characterized by a unique language system comprising a vast array of ideogram-based characters. By the end of the first grade, Chinese children are expected to recognize approximately 460 characters (Wang & Geva, 2003). The complexity of the Chinese language, combined with the high literacy demands in formal education, often drives parents to engage their children in early literacy activities to ensure they “do not fall behind at the starting line” (Ren & Edwards, 2017, p. 1053).

In the Chinese context, Confucian values place strong emphasis on the importance of early education for academic success in Chinese culture (Li et al., 2023; Rao et al., 2014). Studies show that Chinese parents generally have high expectations for their children’s literacy development and prioritize it greatly (Cheung et al., 2021). Compared to Western parents, they tend to devote more time and resources to teaching literacy skills to their preschool-aged children in preparation for the rigorous demands of formal schooling (Zhang et al., 2020). For instance, Ren and Edwards (2017) found that Chinese parents not only expect preschools to introduce pre-academic skills but also actively participate in their children's literacy development through activities such as shared reading. These cultural factors strongly influence the HLEs provided by Chinese parents, contributing significantly to the language and literacy skills of pre-schoolers.

Research on HLE in the Chinese context highlights several dimensions of influence on early language and literacy development, including the availability of bilingual resources, parental reading habits, child-parent interaction, and literacy teaching strategies. These factors are essential for understanding how different components of the HLE shape literacy outcomes in Chinese children. The accessibility of bilingual reading materials is a central factor in shaping literacy skills. Li and Li (2022) reported that Chinese children’s word reading abilities were significantly influenced by the availability of print resources in the home, particularly in homes with bilingual texts, which fosters both vocabulary and print awareness. Likewise, Xiang (2024) focused on Xinjiang households, noting that bilingual resources, when present, facilitate dual-language exposure, which is especially critical in linguistically diverse regions.

The influence of parents’ own literacy practices and reading habits has been widely examined. Zhang et al. (2024b) explored the impact of mothers' reading skills and home literacy interactions, observing that the mother’s literacy level directly influenced children’s engagement in reading activities. A similar study by Wang and Liu (2021) emphasized that parents with more consistent literacy habits provided richer literacy experiences, although literacy difficulties among parents often limited the range and frequency of activities. Li et al. (2024) further observed that parents who viewed literacy as essential for success were more likely to engage in reading with their children, promoting positive attitudes toward language learning, particularly for English as a Foreign Language (EFL). Further, interactive reading between parents and children has been found to contribute significantly to literacy outcomes. Lai et al. (2024) examined how parental attitudes and HLE influence young children’s English literacy and language development in China. The study, involving kindergarteners and their parents, finds that parental beliefs valuing English literacy and active engagement in literacy activities (e.g., shared reading) significantly enhance children's language skills. The quality and availability of English resources at home strongly correlate with improved outcomes, highlighting the importance of a supportive HLE. The study also emphasizes cultural considerations, noting the unique challenges of English acquisition in non-English-speaking contexts, and calls for increasing parental awareness to boost engagement in literacy practices. The strategies used by parents to teach language and literacy vary widely, influencing children’s literacy trajectories. Zhang et al. (2024) found that structured bilingual activities, such as phonetic games or vocabulary exercises, were linked to enhanced early reading skills in Cantonese-English bilinguals, suggesting that explicit teaching methods support dual-language learning. Kim et al. (2022) confirmed that structured parental engagement led to stronger expressive vocabulary skills, underscoring the importance of intentional literacy practices.

Some studies have focused on the factors shaping HLE, with socioeconomic status standing out as a key influence. Liu and Chung (2024) highlighted how limited resources in lower-income families can restrict children’s access to diverse literacy materials, a challenge also observed by other Chinese researchers. Similarly, Zhang et al. (2024a) found that families with higher socioeconomic status tend to create richer literacy environments, offering their children greater opportunities for language development. These studies show that while parental efforts are vital, they may not fully bridge

the gap in literacy outcomes caused by economic disparities. By focusing on bilingual reading resources, parental reading habits, and how these vary across income levels, this study takes a closer look at the role of socioeconomic factors. Through careful analysis, it aims to shed light on patterns and relationships that can inform better strategies to support early literacy development in Chinese families. Taking the gaps in previous studies into account, the current study addressed the following four research questions:

1. What types of bilingual reading resources are commonly available in the homes of Chinese pre-schoolers?
2. What specific reading habits do Chinese pre-schoolers' parents exhibit in both Chinese and English?
3. How do bilingual reading resources differ across the monthly income of a Chinese family?
4. How do specific reading habits of Chinese pre-schoolers' parents differ across their monthly income?

This study sheds light on the HLE of Chinese pre-schoolers in Lanzhou City from the availability of bilingual reading materials and parental reading of Chinese and English. The study brings a unique regional dimension to bilingual literacy study in China as it looks at a region that has not been the focus of many studies. The results of this study could inform educators and interventions on ways to support parents in developing early literacy skills in bilingual homes.

III. METHODOLOGY

A. Research Design

The study reported in this paper employed a quantitative design to examine HLE of Chinese pre-schoolers, with a focus on bilingual reading resources and parental reading habits. This approach enabled the systematic collection and analysis of numerical data to identify patterns and relationships, particularly variations across household income levels. Quantitative research involves the systematic investigation of phenomena through numerical data collection and mathematically based analysis, such as statistical methods (Aliaga & Gunderson, 2002; Muijs, 2010). Historically rooted in a realist or positivist worldview, quantitative research assumes an external reality that can be measured and analysed independently of the researcher's influence.

B. Population and Sample

The target population for the study comprised 1,000 parents of Chinese pre-schoolers in Lanzhou City, China. Of these 1000 parents, 975 parents completed the quantitative survey, representing a high response rate and ensuring broad coverage of diverse socioeconomic backgrounds. To determine the appropriate sample size for the questionnaire, a margin of error of 5% was selected. This choice balances the need for accuracy with practical considerations, ensuring that the findings will be both reliable and feasible to obtain. Using Slovin's formula for sample size calculation, given by:

$$n = \frac{N}{1 + N \cdot e^2}$$

where N represents the population size and e is the margin of error expressed as a decimal, the required sample size can be determined. In this case, N=1,000 and e=0.05. Substituting these values into the formula yields:

$$n = \frac{1000}{1 + 1000 \cdot (0.05)^2}$$

Calculating $(0.05)^2$ gives 0.00250, and multiplying 1000 by 0.0025 results in 2.5. Thus, the equation simplifies to:

$$n = \frac{1000}{1 + 2.5} = \frac{1000}{3.5} \approx 285.71$$

Rounding up, the required sample size was approximately 286 parents, which was deemed sufficient to capture a wide range of experiences and insights relevant to preschool education within this specific community. However, we sent the survey to 1,000 parents to ensure an adequate dataset and to account for potential non-responses. Slovin's formula is a useful tool for calculating the size or number of samples (Tejada & Punzalan, 2012). Given the unique socio-cultural context of Lanzhou, which may influence parental attitudes towards preschool education, it is essential to gather diverse perspectives from various demographic backgrounds. The selection of parents for this study aims to encompass different socio-economic statuses, educational backgrounds, and cultural perspectives, thereby providing a comprehensive understanding of parental involvement in preschool education. This approach is particularly important in the context of Lanzhou, where regional educational policies and cultural norms may shape parents' expectations and engagement in their children's early learning experiences. Hence, the findings of this study contribute to the development of effective educational practices that are sensitive to the needs and preferences of local families, ultimately fostering a supportive environment for children's early development.

This study adhered to ethical research guidelines to ensure the protection and confidentiality of all participants. Before participation, individuals were provided with detailed information about the study's objectives, procedures, and potential implications. All participants voluntarily signed informed consent forms, confirming their understanding and agreement to participate. They were assured that their responses would remain confidential, and all collected data were anonymized, securely stored, and used solely for research purposes. Additionally, participants were informed of their right to withdraw from the study at any time without providing a reason or facing any consequences.

C. Data Collection

A structured survey was developed based on Burgess (2005) and Burgess (2011) to collect quantitative data from the 975 parents. The survey was designed to assess two key domains related to home literacy: reading resources and parental reading habits. The survey consisted of 17 items, distributed across three sections: demographic profile (4 items), home bilingual reading resources (7 items), and parental bilingual reading habits (6 items). The demographic profile included items on the child's age and gender, the school type (public, private, and international kindergarten), and monthly income (low, average, and high). The internal consistency of the scale was assessed using Cronbach's Alpha. The results indicated a good level of reliability, with a Cronbach's Alpha value of 0.767 for the 13 items, suggesting that the scale items consistently measure the underlying construct and are suitable for further statistical analysis. The items for the scale were developed based on a comprehensive review of relevant literature and were reviewed by two experts in the field to ensure their relevance and clarity. This process ensured that the items in the questionnaire adequately represented the constructs of home bilingual reading resources and parental bilingual reading habits.

The survey was distributed through Wenjuanxing, a popular Chinese social media platform known for its high response rates, lower sample homogeneity, and ability to mitigate common method bias effectively (Meng et al., 2023). We sent the questionnaire to 1,000 parents, achieving a response rate of 97.5%. The survey remained open for six weeks. During this period, we sent three reminders to encourage participation. As the survey settings required respondents to answer all questions before submission, there were no missing values. Confidentiality agreements assured respondents that their data would be used exclusively for research purposes (Creswell, 2014).

D. Data Analysis

Data were analysed using SPSS version 25, utilizing both descriptive and inferential statistical methods. Descriptive statistics offered an overview of respondents' demographics and the frequency distributions of their responses, which are essential for understanding HLE in bilingual contexts. Measures such as means, standard deviations, frequencies, and percentages summarized the data related to home bilingual reading resources and parental bilingual reading habits. To assess parental bilingual reading habits, mean scores and standard deviations evaluated parents' reading practices in both languages, facilitating comparisons of engagement in reading for pleasure. Frequency distributions illustrated how often parents read bedtime stories and whether children selected their own reading materials, providing insights into child-parent reading interactions. Additionally, Welch's ANOVA analysed variations in home bilingual reading resources and parental reading habits across different income groups. This analysis accounted for unequal variances, enhancing the validity of comparisons and revealing significant differences in resource availability based on socioeconomic status. Overall, this approach yielded valuable insights into the factors influencing the HLE and its impact on children's literacy development in bilingual settings.

IV. RESULTS

A. Research Question One

Research Question One examined types of bilingual reading resources which are commonly available in the homes of Chinese pre-schoolers. The question examined the availability of bilingual reading resources, and it was assessed through seven items regarding the presence of Chinese and English language materials, including books, magazines, and access to library resources (Table 1). Most families reported providing both Chinese and English books at home, indicating a balanced approach to bilingual literacy exposure. Specifically, 47% of families reported "often" providing Chinese books, with 30% stating they "always" provided them. Similarly, 48% of families "often" provided English books, and 30% "always" did so. Subscription to magazines followed a comparable pattern, with 48% of families "often" subscribing to Chinese publications and 27% "always" doing so. English magazine subscriptions were also frequent, with 48% of families "often" and 28% "always" subscribing. Library engagement was also notable, with 45% of parents reporting they "often" took their child to the library and 29% saying they "always" did. Borrowing habits reflected similar patterns for both languages: 48% of respondents "often" borrowed Chinese books from the library, while 28% "always" did. Borrowing English books was similarly high, with 47% of families "often" and 29% "always" engaging in this activity.

TABLE 1
PARENTS' PROVISION OF BILINGUAL READING RESOURCES

	Items	Never	Rarely	Sometimes	Often	Always	Mean	SD
1	We provide Chinese language books at home for my child to read.	2%	6%	16%	47%	30%	3.97	0.915
2	We provide English language books at home for my child to read.	2%	5%	15%	48%	30%	3.98	0.919
3	We subscribe to Chinese magazines or publications for my child to read.	3%	6%	15%	48%	27%	3.91	0.962
4	We subscribe to English magazines or publications for my child to read.	3%	6%	15%	48%	28%	3.92	0.970
5	I take my child to the library to read.	3%	7%	16%	45%	29%	3.92	0.980
6	I borrow Chinese books from the library for my child to read.	3%	7%	15%	48%	28%	3.91	0.984
7	I borrow English books from the library for my child for my child to read.	3%	6%	16%	47%	29%	3.91	0.988

B. Research Question Two

The results for Research Question Two, which focused on parents' bilingual reading habits, indicate a high level of engagement with reading in both Chinese and English for pleasure, enjoyment, and diversity of topics. Most parents reported frequently reading Chinese books or publications for relaxation, with 50% stating they "often" and 28% "always" engaged in this activity. Similarly, 50% of parents reported "often" reading English materials for relaxation, while 27% reported doing so "always" (Table 2). Enjoyment in reading was also high across both languages; 49% of parents reported "often" enjoying reading in Chinese, with 30% indicating they "always" enjoyed it, while for English, 47% "often" and 27% "always" expressed enjoyment. Parents also demonstrated diverse reading interests, with 48% "often" reading a variety of topics in Chinese and 28% "always" doing so, while 49% "often" and 29% "always" reported reading on diverse topics in English. These findings suggest that parents maintain a balanced and consistent approach to engaging with both languages, fostering a bilingual literacy environment at home.

TABLE 2
PARENTS' BILINGUAL READING HABITS

	Item	Never	Rarely	Sometimes	Often	Always	Mean	SD
1	I read Chinese books and publications for pleasure and relaxation.	2%	6%	14%	50%	28%	3.95	0.926
2	I read English books and publications for pleasure and relaxation.	2%	6%	15%	50%	27%	3.93	0.928
3	I enjoy reading in the Chinese language.	2%	6%	13%	49%	30%	3.97	0.945
4	I enjoy reading in the English language.	3%	6%	16%	47%	27%	3.89	0.976
5	I read a variety of topics in the Chinese language.	2%	7%	15%	48%	28%	3.93	0.949
6	I read a variety of topics in the English language.	3%	5%	14%	49%	29%	3.96	0.942

The results for parental reading habits were analysed by examining the means and standard deviations for each item. As shown in Table 2, the item "I read Chinese books/publications for pleasure and relaxation" yielded a mean of 3.95 (SD = 0.926), indicating a high level of engagement with Chinese reading materials for leisure. Similarly, reading English publications for pleasure showed a mean of 3.93 (SD = 0.928), reflecting a balanced approach to both languages in parents' leisure reading. Regarding enjoyment of reading, parents reported a mean score of 3.97 (SD = 0.945) for reading in Chinese and 3.89 (SD = 0.976) for reading in English, showing a slightly higher preference for reading in Chinese. When it came to reading about various topics, the mean for Chinese was 3.93 (SD = 0.949) and for English was 3.96 (SD = 0.942), indicating broad topic engagement in both languages. These results reflect a strong, balanced interest in both Chinese and English reading among parents, which likely contributes to a bilingual literacy environment for their children.

C. Research Question Three

Research Question Three examined the variations in home bilingual reading sources across three distinct monthly income groups (low, average, and high). Table 3 presents mean and standard deviation scores for the availability of home bilingual reading sources among low-, average-, and high-income family groups, indicating variations in literacy resources across income levels. As shown in Table 3, the descriptive statistics for the variation in home bilingual reading sources across different income groups are presented as follows. For the low-income group, comprising 51 participants, the mean score was 2.16 with a standard deviation of 0.54, indicating a limited availability of bilingual reading resources. In contrast, the average income group, which included 606 participants, exhibited a significantly higher mean score of 3.99 and a standard deviation of 0.34, reflecting a more diverse and abundant array of reading materials accessible to families in this category. Similarly, the high-income group, consisting of 318 participants, demonstrated a mean score of 4.00 with a standard deviation of 0.38, which suggests an equally rich availability of bilingual resources comparable to that of the average income group. Overall, the combined total of 975 participants yielded a mean score of 3.90 and a standard deviation of 0.55. These findings suggest notable differences in the availability of bilingual reading sources across the income strata, emphasizing the potential impact of socioeconomic status on home literacy resources. This variation is critical, as it indicates that families with lower incomes may face challenges in accessing the bilingual materials necessary to support their children's literacy development, which is essential for fostering strong bilingual reading skills in preschool-aged children.

TABLE 3
DESCRIPTIVE STATISTICS OF HOME BILINGUAL READING SOURCES BY FAMILY MONTHLY INCOME GROUPS

Monthly income group	N	Mean	Std. Deviation
Low-income	51	2.1569	.54305
Average income	606	3.9868	.33500
High income	318	4.0000	.38093
Total	975	3.8954	.54691

Table 4 presents the Welch's ANOVA analysis examining differences in the availability and diversity of bilingual reading resources among low, average, and high-income families. The analysis adjusts for unequal variances across groups, providing a robust comparison of means. The results from the robust test of equality of means, specifically Welch's ANOVA, indicated a statistically significant difference in home bilingual reading resources across income groups,

$F(2,127.607) = 282.946, p < .001$. This finding suggests that the availability and diversity of bilingual reading resources vary considerably among families from different income levels, indicating distinct patterns in resource access based on economic background. Given the violation of homogeneity of variances, Welch's ANOVA was an appropriate choice for this analysis, as it adjusts for unequal variances across groups and thereby enhances the validity of comparisons between groups with differing variabilities. By accounting for these variances, Welch's ANOVA has provided a more reliable measure of group differences in bilingual reading resources, ensuring that observed disparities are not confounded by unequal group variability, and instead reflect true distinctions tied to income levels.

TABLE 4
WELCH'S ANOVA RESULTS FOR HOME BILINGUAL READING RESOURCES ACROSS INCOME GROUPS

	Statistic	df1	df2	Sig.
Welch	282.946	2	127.607	.000

TABLE 5
GAMES-HOWELL POST HOC TEST RESULTS FOR DIFFERENCES IN HOME BILINGUAL READING RESOURCES BY INCOME LEVEL

(I) Family monthly income	(J) Family monthly income	Mean Difference (I-J)	Std. Error	Sig.
Low-income	Average income	-1.82994*	.07725	.000
	High income	-1.84314*	.07899	.000
Average income	Low-income	1.82994*	.07725	.000
	High income	-.01320	.02533	.861
High income	Low-income	1.84314*	.07899	.000
	Average income	.01320	.02533	.861

*The mean difference is significant at the 0.05 level.

Table 5 presents the Games-Howell post hoc test results which highlight significant differences in home bilingual reading resources across income levels. The test identifies that both average-income and high-income families have significantly higher access to bilingual reading resources than low-income families. However, there is no significant difference in resources between average-income and high-income families, as indicated by non-significant mean differences. The Games-Howell post hoc test was conducted to further examine pairwise differences in the availability of bilingual reading resources across the three income groups. Results indicated that low-income families reported significantly fewer bilingual reading resources compared to both average- and high-income families, with a mean difference of -1.83 ($p < .001$) between low- and average-income families, and a similar mean difference of -1.84 ($p < .001$) between low- and high-income families. These findings suggest that families in the low-income group have notably less access to a diverse range of bilingual reading materials, which may impact HLE they can provide for their children. Conversely, the analysis showed no statistically significant difference in bilingual reading resources between the average- and high-income groups (mean difference = -0.013, $p = .861$), indicating comparable access to resources among families in these income brackets. This similarity suggests that while both average- and high-income families have more substantial bilingual reading resources than low-income families, further increases in family income beyond the average level may not necessarily correspond to increased resource availability. Overall, these results reveal the disparity in access to bilingual reading resources that exists between lower-income families and those with average or higher incomes.

D. Research Question Four

Research Question Four investigated the variations in parental bilingual reading habits across three distinct monthly income groups. Welch's ANOVA was employed to analyse data collected from demographic questions alongside six items pertaining to parental bilingual reading habits. The use of Welch's ANOVA is particularly appropriate in this context due to the violation of the homogeneity of variance assumption, which indicates that the variability in parental reading habits differs significantly between the groups. Traditional one-way ANOVA assumes equal variances among groups; however, when this assumption is violated, it can lead to inaccurate results (Field, 2013). Welch's ANOVA, on the other hand, adjusts the degrees of freedom used in the significance test, providing a more reliable assessment of mean differences when variances are unequal (Ozsarac et al., 2023). This makes Welch's ANOVA a robust choice for comparing means across groups with unequal variances, thereby providing reliable insights into the dynamics of reading behaviours influenced by family income.

TABLE 6
DESCRIPTIVE STATISTICS OF PARENTAL BILINGUAL READING HABITS BY FAMILY MONTHLY INCOME GROUPS

Monthly income groups	N	Mean	Std. Deviation
Low-income	51	2.3725	.79902
Average income	606	4.0809	.37929
High income	318	4.0535	.38950
Total	975	3.9826	.56115

As demonstrated in Table 6, the analysis revealed significant differences in reading habits based on income levels. Families categorized in the low-income group ($n = 51$) exhibited a mean reading habit score of 2.37 ($SD = 0.80$). This score indicates a less frequent and less diverse engagement with reading materials compared to their higher-income counterparts. Conversely, the average-income group ($n = 606$) displayed a considerably higher mean score of 4.08 ($SD =$

0.38), signifying a more active involvement in reading activities encompassing both Chinese and English languages. Families within the high-income group ($n = 318$) closely mirrored this trend, with a mean score of 4.05 ($SD = 0.39$), reinforcing the notion of robust reading engagement. Overall, when aggregating data from all income groups ($N = 975$), the combined mean reading habit score was found to be 3.98 ($SD = 0.56$). This figure encapsulates the overarching trend of bilingual reading habits within the study sample, highlighting the influence of socioeconomic status on parental reading behaviours.

TABLE 7
WELCH'S ANOVA RESULTS FOR PARENTAL BILINGUAL READING HABITS BY INCOME GROUPS

	Statistic	df1	df2	Sig.
Welch	113.806	2	126.270	.000

As shown in Table 7, the results of Welch's ANOVA can clearly show that there are significant differences in parental bilingual reading habits among the different monthly income groups, $F(2,126.270)=113.81$, $p<.001$. This suggests that monthly income level influences parental reading behaviours. Specifically, the analysis indicates that parental reading habits in both Chinese and English vary across the income strata of low, average, and high-income families. Given the significant F-value, further examination through post-hoc comparisons is warranted to identify the specific differences among the income groups. Welch's ANOVA is particularly suitable in this case due to the violation of the homogeneity of variance assumption, making it a robust choice for comparing means across groups with unequal variances (Delacre et al., 2019). These findings highlight the potential impact of socioeconomic status on family literacy practices, suggesting that families with higher incomes may exhibit more frequent and diverse reading behaviours than their low-income counterparts. This insight underscores the importance of considering economic factors when evaluating HLE of pre-schoolers in bilingual contexts.

TABLE 8
GAMES-HOWELL POST HOC TEST RESULTS FOR PARENTAL BILINGUAL READING HABITS BY INCOME GROUP

(I) Family monthly income	(J) Family monthly income	Mean Difference (I-J)	Std. Error	Sig.
Low-income	Average income	-1.70831*	.11294	.000
	High income	-1.68091*	.11400	.000
Average income	Low-income	1.70831*	.11294	.000
	High income	.02740	.02673	.561
High income	Low-income	1.68091*	.11400	.000
	Average income	-.02740	.02673	.561

* The mean difference is significant at the 0.05 level.

As displayed in Table 8, the results of the Games-Howell post hoc test for parental bilingual reading habits, stratified by family monthly income, revealed significant differences among the three income groups: low-income, average income, and high income. When comparing the low-income group to the average income group, a substantial mean difference of -1.71 ($SE = 0.11$) was observed, which was statistically significant ($p<.001$). This finding indicates that families classified as average income demonstrated significantly better reading habits than those in the low-income category. Similarly, the comparison between the low-income and high-income groups yielded a significant mean difference of -1.68 ($SE = 0.11$), also statistically significant ($p<.001$). This suggests that families with high income exhibited more favourable reading habits compared to their low-income counterparts. In contrast, the analysis did not reveal significant differences in reading habits between the average income and high-income groups, with a mean difference of 0.03 ($SE = 0.03$) and $p=0.561$. This indicates that families in these two income brackets have similar levels of parental reading engagement. However, it is important to note that the high-income group's mean reading habit score was significantly higher than that of the low-income group, as indicated by the mean difference of 1.68 ($SE = 0.11$) and $p<.001$. Overall, these findings illustrate that family income plays a critical role in shaping parental bilingual reading habits. Significant disparities were evident between lower-income families and their average or high-income counterparts, emphasizing the impact of economic factors on reading behaviours within the family context.

Hence, findings related to Research Question Four emphasize the potential impact of socioeconomic status on family literacy practices, suggesting that families with higher incomes may engage in more frequent and diverse reading behaviours compared to their low-income counterparts. This insight is critical, as it reflects the importance of considering economic factors when evaluating HLE of pre-schoolers in bilingual contexts. Understanding these disparities can inform policymakers and educators about the need for targeted interventions to support low-income families in fostering a rich literacy environment that promotes bilingual reading habits among preschool-aged children. Overall, the results can show the importance of addressing socioeconomic disparities in literacy engagement to enhance educational outcomes for children from diverse backgrounds.

V. DISCUSSION

The results regarding the availability of bilingual reading resources among Chinese pre-schoolers indicate that families are committed to fostering bilingual literacy by providing a variety of Chinese and English reading materials, including books and magazines. These findings indicate a strong commitment among families to providing bilingual resources, with

a significant portion "often" or "always" making a variety of materials available in both Chinese and English. This dedication to bilingual resources is essential for children's language development, as it facilitates exposure to diverse linguistic inputs. Additionally, the findings underscore the importance of library engagement, suggesting that parents actively seek to enhance their children's literacy experiences beyond the home environment. The consistent availability of both languages through various media supports language acquisition and encourages positive attitudes toward reading. These findings align with previous studies, such as Li and Li (2022), which found that the presence of bilingual texts significantly influences children's word reading abilities, and Xiang (2024), who noted that bilingual resources facilitate dual-language exposure in linguistically diverse regions. Regarding this, Lai et al. (2024) emphasized that the presence and quality of English resources at home are closely linked to better outcomes, underscoring the significance of a well-supported HLE. Zhang et al. (2024b) highlighted the importance of parental involvement in fostering literacy skills, while Luo et al. (2021) analysed how socioeconomic factors mediate the effectiveness of home literacy practices. Overall, this discussion reiterates the significance of a supportive home literacy environment in shaping children's bilingual literacy outcomes and emphasizes the necessity for ongoing efforts to improve access to diverse reading materials within the home.

Parents in this study reported similar levels of engagement in reading for pleasure in both Chinese and English, reflecting a commitment to giving balanced bilingual exposure. This dedication supports findings from Zhang et al. (2024a), who demonstrated that parental literacy behaviours have a significant role in shaping Chinese children's reading skills and language acquisition across languages. Regular engagement with both Chinese and English materials can provide children with diverse linguistic inputs, which is crucial for developing vocabulary breadth and depth in both languages. Furthermore, parents' enjoyment of reading about varied topics in both languages suggests a rich HLE, which has been shown to positively impact children's print awareness and motivation for reading (Zhang et al., 2024a). The relatively high means for reading enjoyment and engagement in both languages highlight parents' role as literacy role models, consistent with research emphasizing that positive parental attitudes toward reading foster similar attitudes in children (Zhang et al., 2024a). By observing their parents read for both pleasure and relaxation, children are more likely to view reading as an enjoyable and valuable activity. Consequently, this can strengthen their intrinsic motivation to engage in bilingual literacy practices. Additionally, the balanced approach to bilingual print exposure is consistent with the findings of Zhang et al. (2024b) on the importance of a multifaceted literacy environment, where children benefit from interactions with different types of reading materials. In line with this research, the high engagement with various reading topics supports cognitive flexibility and adaptability, important skills for bilingual individuals managing two language systems. Hence, parents' consistent reading habits in both languages can provide a fundamental foundation for Chinese children's language development and academic success in their bilingual context.

The study showed that families in the low-income group had a mean score of 2.16, indicating limited access to bilingual reading resources compared to the average-income group (mean score of 3.99) and high-income group (mean score of 4.00). The results from Welch's ANOVA confirmed a statistically significant difference in resource availability across income groups, underscoring that economic background influences access to literacy materials. The Games-Howell post hoc test further revealed significant differences, with low-income families showing notably fewer bilingual resources than average- and high-income families, corroborating previous research that highlights the barriers faced by lower-income households in accessing educational materials. Notably, there was no significant difference between the average- and high-income groups, suggesting that increases in income beyond the average level do not necessarily enhance resource availability.

Further, the study showed that there were significant differences in reading behaviours among the low, average, and high-income families. Post hoc comparisons showed that families in the low-income group had significantly less favourable reading habits than the average and high-income families. In contrast, the average and high-income groups had no significant differences. The results highlight the significant role played by socioeconomic status in parental reading practices, which suggests the need to address these differences to increase low-income families' participation in literacy programs, especially in bilingual contexts. The fact that there were no significant differences between the average and the high-income families means that these families have good reading habits, but that increasing family income does not necessarily lead to larger reading differences, and that families from low-income families need special support in order to create rich literacy environments. The results also have more general implications for socioeconomic differences in literacy engagement, as the lower reading engagement of low-income families suggests barriers to more frequent reading engagement, including lack of access to books, educational resources, and supportive reading environments, all of which can delay the development of bilingual reading skills for preschool-age children, critical for their academic success and language development.

VI. CONCLUSION

This study has highlighted the important role that parents play in fostering bilingual literacy among Chinese preschoolers. Many parents are dedicated to creating a positive HLE by exposing their children to bilingual reading materials and engaging in reading activities in both Chinese and English. Such efforts not only help to support children's early literacy skills but also create a love of reading among children. Finally, parents encourage child engagement in the print and writing processes and how to access local libraries for a variety of reading materials and home print exposure. On the

other hand, the current study reveals that differences in family socioeconomic status can limit the resources and opportunities available to families to help support effective family literacy practices. By examining bilingual reading resources and practices, this study advances the knowledge base about how parents negotiate the challenges and opportunities of fostering literacy in both Chinese and English. These findings stress the importance of supporting families with the resources and tools to support their children's literacy learning and development. Investing in such efforts is not only important for supporting the development of early literacy skills but also for supporting a rich bilingual literacy environment that will help Chinese children thrive in school and beyond.

In this study, some important recommendations are suggested here to increase parental involvement and support for Chinese pre-schoolers' bilingual literacy. Workshops can equip parents with practical strategies for reading in both Chinese and English. Bilingual resources can be expanded through libraries and schools, as well as family-friendly events, such as story nights, to promote reading. Simple, everyday literacy activities and educational apps can help parents to reinforce skills at home. Kindergartens can also support families by tracking children's reading progress and maintaining regular teacher-parent communication. Together, these strategies can contribute to a more supportive environment for bilingual literacy development.

Some areas for future research emerge from this study. First, longitudinal studies are needed to track the long-term impact of parental involvement and reading practices on bilingual literacy development. Second, future research could examine the effect of socioeconomic factors in access to bilingual resources and parent participation, especially for low income families. Third, studies could evaluate the effectiveness of parent workshops on bilingual literacy, measuring changes in parent behaviour and children's literacy outcomes. Lastly, children's perspectives on bilingual reading could provide valuable insights into their reasons, preferences and attitude towards bilingualism.

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