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Home Literacy Environment and Domain-Specific Early English Literacy Outcomes in a Multilingual Context

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Abstract

This paper reports findings from one component of a larger research project examining ecological influences on early English literacy development among Malaysian preschool children. Grounded in Bronfenbrenner's bioecological theory and Ajzen's theory of planned behaviour, The study investigates how multiple dimensions of the home literacy environment (HLE): parents' literacy beliefs, parents' literacy habits, parent–child literacy interactions, and frequency of English use at home, are associated with children's early English literacy outcomes. Participants comprised 207 preschool children aged five to six years, their parents from registered preschools in urban districts of Selangor, Malaysia. Data were collected using a parent-report HLE survey and a standardized early English literacy assessment battery measuring English decoding skills and expressive English vocabulary. Findings revealed hierarchical and domain-specific relationships among the constructs. Parent–child literacy interaction and frequency of English use at home were directly associated with children's English vocabulary knowledge, while parents' literacy beliefs and literacy habits exerted significant indirect effects through literacy interactions. No direct association was found between HLE variables and children's English decoding skills. English vocabulary, however, was strongly associated with decoding, suggesting interrelated but distinct developmental pathways. The findings extend existing HLE models by explicating belief–practice–outcome mechanisms in a multilingual English as a second language (ESL) context and by highlighting the differential roles of home influences in early English literacy development.

Keywords: Home Literacy Environment, Early English Literacy, Early Literacy

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INTRODUCTION

Early childhood is widely recognised as a critical period for the development of foundational cognitive, linguistic, and socio-emotional competencies that underpin later academic success. During the preschool years, children acquire early literacy skills such as vocabulary knowledge, phonological awareness, letter–sound knowledge, and emergent decoding, which are among the strongest predictors of later reading achievement, school readiness, and long-term educational outcomes (e.g.: Howard, et. al, 2021; Robson, Allen & Howard, 2020; Siew & Md. Nor, 2019; Blair & Razza, 2007; Hammer; 2017). For children learning English as an additional language,

early literacy development is shaped not only by instructional input in preschool classrooms but also by linguistic experiences within the home environment (e.g., Liu et al., 2018, O'Brien, Ng & Arshad, 2020).

In multilingual societies such as Malaysia, early English literacy development presents unique challenges and opportunities. English is taught as a second or foreign language and co-exists with children's first languages, including Malay, Mandarin, Tamil, and various heritage languages. Consequently, children's exposure to English varies substantially across homes, and early English literacy learning often relies on a complex interplay between home practices, parental beliefs, and formal instruction in preschool settings (e.g., Affizal Ahmad, Wam, & Hui, 2018; Niklas, Tayler, & Schneider, 2015; Niklas & Schneider, 2017). Understanding how home literacy environments contribute to early English literacy outcomes in such contexts is therefore of both theoretical and practical importance.

Bronfenbrenner's bioecological theory (1976, 2006) provides a useful framework for conceptualising early literacy development as a product of dynamic interactions between children and their immediate environments. Within this framework, the home constitutes a primary microsystem in early childhood, where proximal processes such as parent–child interactions play a central role in shaping developmental outcomes. Children's literacy development is thus influenced not only by individual characteristics but also by the quality and frequency of literacy-related experiences afforded in the home.

A substantial body of research conducted primarily in Western contexts has demonstrated that the home literacy environment (HLE) is associated with children's early language and literacy development. HLE has been conceptualised as a multidimensional construct encompassing parental education and resources, parents' literacy beliefs and habits, parent–child literacy interactions, and language use practices in the home (Madhubala Bava Harji, Kavitha Balakrishnan & Krishnanveni Letchumanan, 2016; Ahmad, Wam & Hui, 2018). However, the applicability of existing HLE models to multilingual Asian contexts remains insufficiently explored, particularly with respect to early English literacy.

In Malaysia, national assessments and policy documents have highlighted ongoing concerns regarding English literacy outcomes among preschool children. Despite Selangor being the most populous and economically developed state in Malaysia (Department of Statistics Malaysia, 2019), reports indicate that preschool children's English proficiency remains below expected benchmarks. According to the Malaysia Education Blueprint (2013–2025), children at the preschool level are expected to achieve the Common European Framework of Reference (CEFR) A1 level in English; however, assessments such as the Cambridge Baseline Study have shown that many preschoolers perform below this level in listening, reading, and writing. These findings underscore the need to examine contextual factors, including the home environment, that may contribute to early English literacy development.

Although several Malaysian studies have examined aspects of parental involvement and home language practices, there remains a lack of comprehensive investigations that model multiple dimensions of HLE simultaneously and examine their differential associations with distinct early English literacy domains. Moreover, few studies have explicitly examined the mechanisms through which parents' beliefs and habits translate into literacy outcomes, particularly within a multilingual EFL context (e.g., O'Brien, Ng & Arshad, 2020).

To address these gaps, the present study investigates the relationships between multiple dimensions of the home literacy environment and children's early English literacy outcomes among Malaysian preschoolers. This paper reports findings from one component of a larger research project examining ecological influences on early English literacy development. Specifically, the study examines whether parents' literacy beliefs and habits are associated with parent–child literacy interactions, and whether these HLE components predict children's English vocabulary and decoding skills after controlling for child age, household income, and parental education.

LITERATURE REVIEW

Early Literacy Development and Ecological Perspectives

Early literacy encompasses a constellation of skills that emerge prior to formal reading instruction and lay the foundation for later reading competence. These include vocabulary knowledge, phonological awareness, letter knowledge, print concepts, and early decoding skills (Lonigan et al., 2013). Research has consistently shown that early proficiency in these domains predicts later reading achievement and academic success (Robson, Allen & Howard, 2020; Siew & Md. Nor, 2019; Blair & Razza, 2007; Hammer; 2017). From an ecological perspective, early literacy development is situated within multiple interacting contexts, with the home and preschool representing two of the most influential environments during early childhood.

Bronfenbrenner's bioecological theory posits that development occurs through proximal processes, allowing for reciprocal interactions between the child and significant others or objects in the environment (Bronfenbrenner & Morris, 2006). In the context of early literacy, such processes include shared book reading, storytelling, and informal language use between parents and children. The quality, frequency, and consistency of these interactions are shaped by broader contextual factors, including parental beliefs, cultural practices, and socioeconomic resources. This phenomenon reflects in the interplay of multiple elements that coexist and interact in children's learning process.

Conceptualising the Home Literacy Environment

The home literacy environment has been conceptualised in diverse ways across studies, reflecting variations in theoretical orientation and cultural context (e.g., Hood, Conlon, & Andrews, 2008; Niklas & Schneider, 2013; Sénéchal & LeFevre, 2002). Broadly, HLE can be divided into structural and process-oriented components. Structural components include parental education, household income, and availability of literacy materials, while process-oriented components encompass literacy-related interactions, language use practices, and parental beliefs about literacy.

Parent–child literacy interactions, such as shared reading and literacy play, have been consistently linked to children's vocabulary growth and emergent literacy skills (e.g., Silinskas et al., 2020; Nag et al., 2018; Niklas et al., 2020; Breadmore et al., 2019). These interactions provide children with exposure to rich language input, opportunities to engage with print, and scaffolding that supports meaning-making and language development. In contrast, parents' literacy beliefs and habits are often conceptualised as more distal factors that influence literacy outcomes indirectly by shaping parents' engagement in literacy activities.

Past studies have established that early literacy development is greatly aided by the presence of active and supportive home literacy environment, (e.g., Goodrich et al., 2021; Inoue et al., 2020; Niklas & Schneider, 2013; 2017; Nag et al., 2018). Viewing this phenomenon from Ajzen's theory of planned behaviour, understanding how parents' beliefs and attitudes may influence literacy-related behaviours. According to this theory, beliefs inform intentions, which in turn guide deliberate behaviours. In the context of home literacy, parents' beliefs about the importance of early literacy and their own literacy habits are expected to influence how frequently and intentionally they engage their children in literacy-related activities (e.g., Inoue et al., 2018, Md Husain et al., 2011).

Evidence suggests that the effects of HLE may differ across literacy domains (Zakaria et al., 2021). Vocabulary development appears particularly sensitive to language exposure and interactional quality in the home, whereas code-related skills such as decoding and letter–sound knowledge are more strongly associated with formal instruction and classroom-level factors (e.g., Krijnen et al., 2020; Kendeou et al., 2009; Storch & Whitehurst, 2002). Studies conducted in Western contexts have shown that while shared reading and informal literacy activities are robust predictors of vocabulary growth, their associations with decoding skills are comparatively weaker.

In multilingual and ESL contexts, these domain-specific patterns may be further accentuated. Children's exposure to English at home may vary considerably, and literacy activities conducted in the home may not systematically target code-related skills in English. Consequently,

the mechanisms linking HLE to English decoding may differ from those observed in monolingual contexts.

HLE in Asian and Malaysian Contexts

Although HLE research has expanded beyond Western contexts in recent years, studies focusing on Asian multilingual societies remain limited (Zakaria et al., 2021). Existing Malaysian studies have highlighted the importance of parental involvement and home language practices in children's early literacy development, yet findings are often fragmented and focus on single dimensions of HLE. Moreover, few studies have examined early English literacy specifically, despite the growing emphasis on English proficiency in Malaysian education policy. Given these gaps, there is a need for integrative models that examine multiple dimensions of HLE simultaneously and explore their direct and indirect associations with distinct early English literacy outcomes. The present study addresses this need by testing a hierarchical model of HLE in relation to children's English vocabulary and decoding skills.

METHODS

Research Design

The study employed a predictive, non-experimental quantitative research design to examine associations between home literacy environment factors and children's early English literacy outcomes.

Participants and Context

Participants included 207 preschool children aged five to six years, their parents (either mother or father, identified as the primary caregiver involved in the child's English literacy learning), from 24 registered preschool classrooms. All preschools were located in urban districts of Selangor and followed the national preschool curriculum. Selangor was selected due to its demographic diversity, high population density, and documented challenges in preschool English literacy performance despite relatively favourable socioeconomic indicators (Ministry of Education Malaysia, 2012).

Instruments

Home literacy environment was assessed using a parent-report survey adapted from the Home Literacy Environment Questionnaire (Buvaneswari & Padakannaya, 2017). The survey measured four dimensions: parents' literacy beliefs, parents' literacy habits, parent–child literacy interactions, and frequency of English use at home. Children's early English literacy outcomes were assessed using a standardized battery comprising the Dynamic Indicators of Basic Early Literacy Skills (DIBELS, 8th Edition) to measure English decoding skills and the Early Years Toolbox – Vocabulary (EYT-Vocab) (Howard & Melhuish, 2017) to assess expressive English vocabulary.

Procedure and Ethical Considerations

Ethical approval was obtained from relevant institutional review boards and authorities prior to data collection. Parental consent was obtained for all participating children. Data collection procedures involving children adhered strictly to prescribed ethical guidelines, and participation was voluntary and confidential.

Data Analysis

Descriptive statistics were used to summarise participant characteristics and HLE variables. Bivariate correlations examined associations among HLE components and literacy outcomes. Partial least squares structural equation modelling (PLS-SEM) was employed to test the hypothesised hierarchical relationships among constructs, controlling for child age, household income, and parental education. Preliminary analyses indicated negligible between-class variance in HLE, and intra-class correlation coefficients did not support the need for multilevel modelling.

RESULTS

Descriptive Characteristics of the Sample

Descriptive analyses were conducted to contextualise the home backgrounds of participating children. Analysis of parental education levels showed that 51.6% of mothers and 41.4% of fathers possessed at least an undergraduate degree, indicating that approximately half of the children came from households with relatively high parental educational attainment. A smaller proportion of parents reported education at secondary school level or below. This profile is broadly consistent with the demographic characteristics of urban families in Selangor (Department of Statistics Malaysia, 2019).

Household income data indicated that 60.5% of participating families fell within the middle-income (M40) category, with reported monthly household incomes ranging from RM4,851 to RM10,970, based on national income classifications (Department of Statistics Malaysia, 2021). Despite Selangor's consistently high contribution to national gross domestic product, previous national and international assessments have reported that preschool children's English literacy performance in the state remains below expected benchmarks (Ministry of Education Malaysia, 2012; Cambridge Baseline Study, 2013). These contextual indicators underscore the importance of examining home literacy factors beyond socioeconomic status alone.

Correlational Analysis of Home Literacy Environment and Early English Literacy

Pearson product–moment correlation analyses were conducted to examine bivariate relationships among the four home literacy environment (HLE) components: (i) parents' literacy habits, (ii) parents' literacy beliefs, (iii) parent–child literacy interaction, and (iv) frequency of English use at home, and children's early English literacy outcomes, namely English vocabulary knowledge and letter–sound (decoding) knowledge.

As shown in Table 1, significant positive associations were observed among the HLE components. Parents' literacy habits were strongly correlated with parent–child literacy interaction ($r = .658$, $p < .01$), indicating that parents who engaged more frequently in literacy-related activities themselves were substantially more likely to involve their children in literacy interactions at home. Parents' literacy habits were also moderately associated with frequency of English use at home ($r = .460$, $p < .01$) and literacy beliefs ($r = .242$, $p < .01$).

Parents' literacy beliefs were significantly associated with parent–child literacy interaction ($r = .368$, $p < .01$) and, to a lesser extent, with frequency of English use at home ($r = .168$, $p < .01$). These findings suggest alignment between parents' beliefs about literacy and their enacted literacy practices, consistent with behavioural models of parental involvement (Ajzen, 1991).

With respect to children's early English literacy outcomes, parent–child literacy interaction showed a significant positive association with English vocabulary knowledge ($r = .251$, $p < .01$) and a weaker but still significant association with letter–sound knowledge ($r = .159$, $p < .05$). Frequency of English use at home was also positively associated with children's vocabulary knowledge ($r = .273$, $p < .01$), but not with letter–sound knowledge ($r = .083$, $p > .05$).

Parents' literacy habits were weakly associated with children's vocabulary knowledge ($r = .117$, $p < .05$) and not significantly associated with letter–sound knowledge ($r = .108$, $p > .05$). Literacy beliefs did not show a significant relationship with vocabulary knowledge ($r = .080$, $p > .05$) but were modestly associated with letter–sound knowledge ($r = .163$, $p < .01$).

English vocabulary knowledge and letter–sound knowledge were moderately correlated ($r = .443$, $p < .01$), indicating substantial overlap between these two foundational literacy domains. Overall, the correlational findings suggest that meaning-related literacy outcomes (vocabulary) are more consistently associated with HLE components than code-related outcomes, a pattern reported in previous studies conducted in both monolingual and multilingual contexts (Sénéchal & LeFevre, 2002; Niklas & Schneider, 2013).

Structural Equation Modelling Results

Partial least squares structural equation modelling (PLS-SEM) was employed to examine the hypothesised predictive relationships among home literacy environment (HLE) components and children's early English literacy outcomes. Bootstrapping procedures were used to estimate path significance. Given the negligible between-class variance observed, a single-level structural model was retained.

The structural model demonstrated adequate explanatory power. The model accounted for 26.1% of the variance in children's English vocabulary knowledge ($R^2 = .261$) and 40.5% of the variance in children's decoding skills ($R^2 = .405$), indicating moderate to substantial explanatory strength. In addition, frequency of English use at home was itself meaningfully predicted within the model ($R^2 = .226$), suggesting that English exposure at home is shaped by other HLE components.

With respect to vocabulary outcomes, parent–child literacy interaction emerged as a significant positive predictor of children's vocabulary knowledge ($\beta = .172$, SE = .068, $t = 2.517$, $p = .006$, $f^2 = .03$). Frequency of English use at home also significantly predicted vocabulary knowledge ($\beta = .203$, SE = .065, $t = 3.112$, $p = .001$, $f^2 = .05$). These findings indicate that both interactive literacy practices and ambient English exposure contribute to vocabulary development, albeit with small to moderate effect sizes. These findings indicate that both interactive literacy practices and ambient English exposure contribute to vocabulary development, albeit with small to moderate effect sizes.

In contrast, neither parent–child literacy interaction ($\beta = .078$, SE = .059, $t = 1.337$, $p = .091$, $f^2 = .01$) nor frequency of English use at home ($\beta = -.028$, SE = .057, $t = 0.496$, $p = .310$, $f^2 = .00$) significantly predicted children's decoding skills. These results indicate that home-based literacy practices did not directly contribute to children's code-related literacy skills.

Children's vocabulary knowledge, however, was a strong and significant predictor of decoding skills ($\beta = .290$, SE = .065, $t = 4.483$, $p < .001$, $f^2 = .11$). This result suggests that vocabulary knowledge functions as an important intermediary mechanism through which early language resources support the development of decoding abilities.

Partial least squares structural equation modelling (PLS-SEM) was employed to examine the hypothesised predictive relationships among HLE components and children's early English literacy outcomes while controlling for child age, household income, and parental education. Preliminary analyses indicated minimal between-class variance in HLE variables, and intra-class correlation coefficients did not support the use of multilevel modelling; therefore, single-level analysis was deemed appropriate (Heck & Thomas, 2020).

Results from the structural model indicated that parent–child literacy interaction ($\beta = .29$, $p < .01$) and frequency of English use at home ($\beta = .31$, $p < .01$) were significant direct predictors of children's English vocabulary knowledge. Together, these predictors accounted for approximately 26% of the variance in English vocabulary ($R^2 = .26$), indicating a moderate effect size. Parents' literacy beliefs ($\beta = .07$, $p > .05$) and parents' literacy habits ($\beta = .09$, $p > .05$) did not exert significant direct effects on vocabulary outcomes. However, both variables demonstrated statistically significant indirect effects on vocabulary through parent–child literacy interaction pathways, supporting a hierarchical model of influence.

With respect to English decoding skills, none of the HLE components emerged as significant direct predictors (all $\beta s < .12$, $ps > .05$). The proportion of variance in decoding explained by home-based predictors was comparatively low. English vocabulary knowledge, however, was a strong predictor of decoding skills ($\beta = .47$, $p < .01$), accounting for approximately 22% of the variance ($R^2 = .22$). This finding indicates that vocabulary knowledge serves as a key intermediary literacy resource supporting the development of code-related skills. Table 1 presents a summary of Pearson correlation coefficients among HLE components and early English literacy outcomes.

Table 1. Correlations among Home Literacy Environment Variables and Early English Literacy Outcomes

Variable	1	2	3	4	5	6
1. Parents' literacy habits	—					
2. Parents' literacy beliefs	.242**	—				
3. Parent–child literacy interaction	.658**	.368**	—			
4. Frequency of English use at home	.460**	.168**	.301**	—		
5. English vocabulary knowledge	.117*	.080	.251**	.273**	—	
6. English decoding knowledge	.108	.163**	.159*	.083	.443**	—

Note. $p < .05$; **p** < .01.

DISCUSSION

The present study examined the relationships between multiple dimensions of the home literacy environment (HLE) and Malaysian preschool children's early English literacy outcomes. The findings provide empirical support for a hierarchical and domain-specific model of HLE influence, consistent with both Bronfenbrenner's bioecological theory (Bronfenbrenner & Morris, 2006) and Ajzen's theory of planned behaviour (Ajzen, 1991; Ramadhani et al., 2022; Tannoubi et al., 2023).

The results demonstrated that parents' literacy beliefs and literacy habits did not exert direct effects on children's English vocabulary or decoding skills. Instead, their influence operated indirectly through parent–child literacy interaction. This pattern aligns with prior HLE research suggesting that distal parental characteristics shape children's literacy development primarily through proximal processes, such as shared reading and literacy-related conversations (e.g., Silinskas et al., 2020; Sénéchal and LeFevre, 2014; Krijnen et al., 2014). From a behavioural perspective, parents' beliefs and attitudes toward literacy are more likely to translate into children's learning outcomes when they are enacted through concrete and deliberate practices (Ajzen, 1991; Banseng et al., 2021; Waty et al., 2024).

Parent–child literacy interaction and frequency of English use at home emerged as significant predictors of children's English vocabulary knowledge. Vocabulary development is highly sensitive to both the quantity and quality of language exposure, particularly in interactional contexts that support meaning-making and responsive dialogue (Rowe, 2008; Hoff, 2013). The present findings extend this body of work to a multilingual ESL context, demonstrating that similar mechanisms operate in the Malaysian context, albeit with varying degrees of English exposure.

In contrast, none of the HLE components showed significant direct associations with English decoding skills. This finding is consistent with previous studies reporting weaker or non-significant relationships between HLE and code-related literacy skills, particularly once children enter formal instructional settings (Sénéchal & LeFevre, 2002; Niklas & Schneider, 2013). Decoding skills typically require systematic instruction in grapheme–phoneme correspondences, which may be less frequently targeted in informal home literacy activities. In the Malaysian

context, such instruction is more likely to occur within preschool classrooms rather than at home (Ministry of Education Malaysia, 2012).

The strong association observed between English vocabulary knowledge and decoding skills supports interactive models of reading development, which posit that vocabulary provides a linguistic foundation that facilitates the acquisition of decoding skills (Perfetti & Stafura, 2014; Hafnidar et al., 2021; Solfema et al., 2024). This is consistent with the previous research by consistent with previous research (e.g., Krijnen et al., 2020; Kendeou et al., 2009; Storch & Whitehurst, 2002). The relationship suggests that while home literacy practices may not directly support decoding, they contribute indirectly by strengthening children's vocabulary resources, which in turn support code-related learning.

Taken together, the findings underscore the importance of distinguishing between different literacy domains when examining HLE effects, particularly in multilingual contexts. They also highlight the need to consider how home-based factors contribute to early English literacy development, rather than assuming uniform effects across domains.

LIMITATIONS AND FUTURE RESEARCH

Several limitations of the present study should be acknowledged. First, the study employed a cross-sectional design, which limits the ability to make causal inferences regarding the directionality of relationships between home literacy environment components and children's early English literacy outcomes. Although the structural model was theoretically grounded, longitudinal data would allow for a more robust examination of developmental pathways and reciprocal influences over time.

Second, the sample was drawn from urban preschools in Selangor, where parental education levels and household income are generally higher than national averages. As such, the findings may not be fully generalisable to rural contexts or to families from lower socioeconomic backgrounds, where access to English resources and patterns of home literacy engagement may differ substantially. Future studies should consider more socioeconomically and geographically diverse samples to enhance external validity.

Third, data on home literacy practices were collected through parent self-report measures, which may be subject to social desirability bias. Although the use of multiple HLE indicators strengthened construct validity, observational data or home-based literacy logs could provide more fine-grained insights into the quality of parent–child literacy interactions.

Future research should also examine classroom-level factors, including instructional practices and teacher language use, in conjunction with home literacy variables to better understand the relative contributions of home and school environments to early English decoding development. Longitudinal and mixed-method approaches would be particularly valuable in capturing the dynamic interplay between home practices, instructional contexts, and children's literacy growth in multilingual settings.

In conclusion, the findings of the current research nevertheless offer better understanding on how parents and home literacy environment particularly relate to children's early literacy in English. According to the findings, early English literacy leraning may not directly relate to parents' deliberate to teach literacy, instead through parents literacy behaviour. These findings may yield better understanding on early exposure towards early literacy among children.

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