

Building a Foundation for Lifelong Learning: The Crucial Links between Physical Literacy Environment, Parent-Child interaction in Language and Literacy Activities, and Children's Reading Attitude

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Abstract

Understanding the factors influencing children's reading attitudes is vital for educators, parents, and policymakers. This quantitative, non-experimental correlation study involved 374 six-year-old Malaysian children and their parents. It aimed to examine the relationships between the preschoolers' physical literacy environment, parent-child interaction in language and literacy activities, and reading attitude. Parents completed demographic forms and the Home Literacy Environment Questionnaire, while children were assessed using the Elementary Reading Attitude Survey. Data analysis included descriptive statistics, correlation analysis, and Structural Equation Modelling to explore the mediating effect of parent-child interaction. Results showed no significant direct relationship between the physical literacy environment and children's reading attitude. However, parent-child interaction in language and literacy activities was significantly related to both the physical literacy environment and reading attitude. Mediation analysis revealed a full mediating effect, indicating that the physical literacy environment impacts reading attitude only through parent-child interaction. These findings highlight the crucial role of active parental involvement in language and literacy activities, emphasizing that simply having resources is not enough-how parents engage with their children matters. This insight helps guide parents in fostering more effective support for their children's literacy development at home.

Keywords : *physical literacy environment, parent-child interaction in language and literacy activities, reading attitude, home literacy environment*

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Introduction

The home environment plays a pivotal role in a child's early development, particularly in fostering language and literacy skills. Parental engagement in reading, writing, and conversational activities significantly enhances children's language acquisition. A literacy-rich home setting-characterized by the availability of books, interactive learning opportunities, and supportive parental involvement-contributes to children's linguistic competence and interest in reading.

The physical literacy environment, as defined by Curenton and Justice (2008) and Dong et al. (2020), comprises literacy materials, tools, and resources within the home that support children's literacy development. This environment extends beyond traditional conceptions of literacy to include the tangible and linguistic elements that shape children's cognitive and language skills. A well-resourced physical literacy environment fosters foundational abilities essential for later academic success.

Equally critical is parent-child interaction in language and literacy activities, which encompasses shared reading, storytelling, and writing tasks that actively involve the child (Jacobs, 2004). These interactions are central to vocabulary acquisition, reading comprehension, and overall language development, while also promoting curiosity and a positive orientation towards literacy.

Another important construct is reading attitude, which reflects children's beliefs, feelings, and dispositions toward reading (McKenna et al., 2012). Research highlights its strong correlation with literacy achievement and early school performance (Carroll et al., 2019; Jung et al., 2020). A positive reading attitude predicts not only improved academic outcomes but also sustained interest in learning and reading throughout life. This attitude is shaped by both individual differences and the broader home literacy environment (Altun, 2013; Lee & Yeo, 2014; Kiziltan & Atli, 2013; McGeown et al., 2015).

Parents play a crucial role in shaping children's reading habits by cultivating a literacy-rich environment and engaging in shared reading experiences (Kamunge, 2018). These experiences not only reinforce the value of literacy but also strengthen the emotional and cognitive dimensions of learning. The interplay between the physical literacy environment

and parent-child interaction significantly influences children's reading attitudes and subsequent academic trajectories.

Despite the recognized importance of home literacy environments, existing research often isolates individual dimensions rather than examining their interaction. There is a lack of comprehensive understanding regarding how the combined effects of physical literacy resources and parent-child literacy interactions shape children's reading attitudes. This study aims to explore these interrelationships, offering deeper insight into the multifaceted nature of early literacy development and informing strategies to promote reading motivation and academic success in young children. Therefore, this research aiming to study on the following:

1. The level of private preschoolers' reading attitude.
2. The influence of private preschoolers' physical literacy environment on their reading attitude.
3. The mediating effect of private preschoolers' parent-child interaction in language and literacy activities on the relationship between physical literacy environment and reading attitude.

Literature Review

Influences of Physical Literacy Environment and Reading attitude

Reading attitude, interest, and motivation are closely connected. These factors work together to support children's literacy development (Ramiza & Albion, 2013; Wiescholek et al., 2017; Carroll et al., 2019). Reading attitude plays a key role, as it shapes interest and supports motivation (Kamunge, 2018; Stoodt et al., 1996, as cited in Muhamad et al., 2019; Kikas et al., 2015). Children with positive attitudes are more likely to read often. This frequent engagement leads to stronger reading skills and better achievement (Logan, Medford, & Hughes, 2011; McGeown et al., 2021).

Parental involvement strongly influences children's reading habits. Parents can support literacy by providing books, reading with their children, valuing reading, and modeling good habits (Kamunge, 2018). The Home Literacy Model (Sénéchal & LeFevre, 2002) describes

two types of home reading activities. Meaning-related activities, like singing rhymes, do not focus on print. Code-related activities, such as using flashcards, involve printed words. A home with a variety of books supports quality reading interactions, no matter when parents start reading with their children (Marjanovič-Umek et al., 2017).

Research confirms the impact of the home literacy environment. Lee and Yeo (2014) found that the number of books, early literacy activities, and parents' reading attitudes all relate to children's reading attitudes. The number of books had the strongest link ($r = .782$), followed by early practices ($r = .590$) and parental attitudes ($r = .572$).

These patterns are evident in many Asian households. Parents often have high expectations and create resource-rich environments to support learning. They provide reading materials and engage in frequent literacy activities to help children succeed (Cheung et al., 2021). Many parents believe shared reading helps children enjoy books and perform better in school (The Asia Foundation, 2022).

Physical Literacy Environment, Parent-Child Interaction in Language and Literacy Activities, and Reading Attitude

Parent-child interaction plays a vital role in children's development across multiple domains, including physical, cognitive, social, and emotional growth. In the context of literacy, such interaction—particularly during language and literacy activities—significantly shapes the home literacy environment and contributes to early literacy acquisition (Dong et al., 2020). Among these activities, shared reading is the most common and impactful form, closely associated with children's literacy outcomes (Marjanovič-Umek et al., 2017; Swain & Cara, 2017; Inoue et al., 2018; Grolog et al., 2019; Wirth et al., 2020).

Research has shown a strong correlation between the frequency of parent-child interaction in literacy activities and children's attitudes toward reading. Children who are regularly engaged in these interactions tend to exhibit more positive reading attitudes and a higher level of engagement in self-initiated reading practices (Myrttil et al., 2019). This form of interaction fosters both motivation and literacy habits, making it a central component of an enriched home literacy environment (Dong et al., 2020).

A child's reading attitude is shaped by early reading experiences and the quality of parent-

child interactions, rather than parental reading habits alone. These attitudes, alongside literacy interest, serve as significant indicators of children's literacy development and learning progress, even at the onset of formal schooling (Carroll et al., 2019). Individual variables such as age, gender, and personal reading attitude also influence reading interest (Kamunge, 2018; Stoodt et al., 1996, as cited in Muhamad et al., 2019). Reading professionals recognize that students' performance is closely tied to their reading interest and engagement (Kikas et al., 2015). Furthermore, Pfost et al. (2016) emphasized the influence of parental behavior on children's reading attitudes, noting that a supportive home literacy environment is crucial for developing emergent literacy skills. Other studies confirm a moderate relationship between the home literacy environment and children's reading competencies, and a stronger link with reading interest (Yeo et al., 2014; Westdal, 2018; Sholikah et al., 2019).

In the Singaporean context, O'Brien et al. (2019) found that the home literacy environment, especially shared reading, strongly predicted children's language and literacy outcomes. The study also identified children's reading interest as a predictor of literacy success. However, it reported no substantial link between the frequency of parent-child literacy activities and children's literacy attitudes. Contrastingly, other research indicates that frequent parent-child interactions are associated with more positive attitudes toward reading (Ozturk et al., 2016).

Parental influence extends beyond shared reading to the overall literacy environment they create. Lukie et al. (2014, as cited in Wiescholek et al., 2017) and Baker and Scher (2002, as cited in Patterson, 2017) affirmed that children's interest in literacy is positively influenced by both the quality of interactions and the material resources available at home. A language-rich environment, combined with meaningful interactions, underpins early literacy success (Yeo & Ng, 2017). Moreover, the physical literacy environment, including the quantity and variety of books, has been linked to the quality of shared reading, particularly in mother-child interactions.

Parental responsibilities in promoting children's reading habits encompass various components: creating a print-rich environment, engaging in shared reading, fostering positive beliefs about literacy, collaborating with educators, and modeling reading behavior (Kamunge, 2018). These actions not only support language acquisition but also strengthen motivation and literacy habits in young learners (Ganotice et al., 2017; Tong et al., 2021).

Nevertheless, some findings challenge the assumed relationship between frequency of shared book reading and children's reading interest. Dicataldo and Roch (2022) observed no significant correlation, suggesting that other factors may mediate this relationship.

Method

Study Design

The current study is a quantitative research that utilizes a survey design with a non-experimental correlational design. Its purpose is to examine the relationship between physical literacy environment and reading attitude, which is mediated by parent-child interaction in language and literacy activities. The study was conducted in the Johor district in Malaysia, and data was collected from parents and preschoolers using a cross-sectional, self-administered questionnaire.

Instruments

Demographic Information

Parental demographic characteristics of the home were assessed by 2 items of basic information, which are: the relationship of the respondent to the child and the age of the respondent. The parents must answer both items to gain basic information about the respondents.

Home Literacy Questionnaire

The Physical Literacy Environment Questionnaire was adapted and modified from Buvaneswari & Padakannaya (2017) in the research "Development of a Home Literacy Environment Questionnaire for Tamil-speaking Kindergarten Children". According to

Buvaneswari & Padakannaya (2017), there are five dimensions of the home literacy environment have been extensively reported in the literature: (a) physical literacy environment , (b) parent literacy habits, (c) child's own literacy habits, (d) parent-child interaction for language and literacy activities, and (e) parental beliefs about literacy. The researcher only used two sub-sections from this Home Literacy Environment Questionnaire in this research.

Physical Literacy Environment

This sub-section is related to the materials used for reading and writing in the respondent's house. The items are the materials available at home that the parents had prepared for the children, such as *toys that teach colour, shapes, sizes, etc.* There are a total of 7 items in this part. The respondents will need to indicate how frequently the respondents use the materials stated in each item with the children. The indicators are a 5-points Likert scale where the respondents have to select a number from 1 to 5, representing Never to Very Often. Higher scores indicate that the respondents provide broader physical literacy materials at home.

Parent-Child Interaction in Language and Literacy Activities

This sub-section is related to the interaction of the parents with the children. There are 20 items within this sub-section about the parents' activities with the children; for example, *I teach nursery rhymes and songs to my child, etc.* The respondents will need to indicate how frequently the respondents have done the following activities with the children. The indicators are a 5-points Likert scale where the respondents need to select a number from 1 to 5, representing Never to Very Often. The higher the score in this session, the more parent-child interaction happened in language and literacy activities.

Elementary Reading Attitude Survey (ERAS)

The measure of children's literacy interest can be valuable in identifying children with literacy challenges (Carroll et al., 2019). To assess the preschoolers' reading attitude as a mediator of the home literacy environment's influence on English competency, the Elementary Reading Attitude Survey (ERAS) was developed by McKenna and Kear in 1990

and is widely used in research to measure preschoolers' reading attitudes. The ERAS provides a rapid indicator of students' attitudes toward reading.

The original version of ERAS consists of 20 items and takes approximately 10 minutes to administer in the preschool classroom. Each item presents a straightforward statement about reading, accompanied by four pictorial indicators of Garfield, representing different emotional states ranging from very positive to very negative. Each item is assigned a score from 1 to 4, with '1' indicating the Very Upset Garfield, '2' the Mildly Upset Garfield, '3' the Slightly Smiling Garfield, and '4' the Happiest Garfield. For each student, three scores will be obtained: (1) the total for the first ten items related to recreational reading attitude, (2) the total for the second ten items related to academic reading attitude, and (3) the composite total, indicating the overall reading attitude.

Considering the findings of Gunobgunob-Mirasol (2020) showing that recreational reading declines as children progress from Grade 4 to Grade 6, while there is no significant difference in academic reading attitude based on grade level. Additionally, preschool children's reading competencies exhibit a strong positive association between reading attitude and phonological awareness abilities in early childhood, and phonological awareness skills demonstrate a considerably strong correlation with academic reading attitude (Wood & Gabas, 2017). Hence, the researcher will focus solely on the academic reading subscale (items 11 to 20) of the original instrument, in which the primary interest lies in understanding the children's attitudes toward academic reading. The items in the academic reading subscale include questions such as "How do you feel when a teacher asks you questions about what you read?", "How do you feel about reading in school?", and "How do you feel about learning from a book?" An email was sent to the author of the ERAS to request permission to adapt and adopt the questionnaire, and permission was obtained from the author, which was granted through email.

The internal consistency of the ERAS was assessed using Cronbach's alpha, resulting in values ranging from .74 to .89 (McKenna & Kear, 1990). Additionally, construct validity was measured through a series of tests comparing the ERAS to reading ability, with an inter-subscale correlation coefficient of .64 (McKenna & Kear, 1990).

To facilitate the scoring process and record recreational, academic, and total scores, the

researcher can utilize the scoring sheet attached to the instrument. The ERAS score is based on a Likert scale with a 4-point pictorial response system. To ensure the instrument's reliability, the researcher will follow a specific procedure during the administration of the Elementary Reading Attitude Survey (ERAS). Each reading statement will be read aloud by the researcher to the children, who will then be given time to think about their feelings towards each statement. Subsequently, the children will circle the Garfield picture that best represents their feelings in response to each statement. The researcher will read each item slowly and clearly, and may even reread them while the students are considering their responses.

The ERAS will be administered individually to each child after they have completed the Phonological Awareness Test. While it is possible to administer the ERAS to the entire classroom simultaneously, conducting it individually allows for a better understanding of the questions by the students. This personalized approach ensures that each child has enough time to consider their responses and provide accurate feedback on their reading attitudes.

Reliability of the Instrument

The reliability of the instrument in this study was determined by calculating Cronbach's alpha value, which represents the correlation between the score of each item and the total score for all items in the test. A Cronbach's alpha value of .65 to .95 is considered satisfactory, with a low alpha coefficient ($\alpha < .65$) indicating low ability of the items to measure the variable and $\alpha > .95$ suggesting items that are too similar or overlapping (Chua, 2013). To test the reliability of the constructs, the study used both Cronbach's alpha and composite reliability (CR). All CR values were found to be higher than the recommended value of .700 (Wasko & Faraj, 2005), and Cronbach's alpha of each construct exceeded the 0.700 threshold.

Table 1 displays the Cronbach's Alpha Coefficient of the Study (N=384). It shows that Cronbach's Alpha for physical literacy environment is .894, parent-child interaction in language and literacy activities is .937, and reading attitude was .736. The composite reliability of the constructs ranged from .810 to .945. Based on the reliability test results, the researcher concluded that the instrument developed for this study exhibited an excellent level of internal consistency reliability.

Table 1. *Reliability of the Instruments*

Variables	Cronbach Alpha	Composite Reliability
Parent-child Interaction in Language and Literacy Activities	0.937	0.945
Physical Literacy Environment	0.894	0.917
Reading Attitude	0.736	0.810

Participants

Population means the entire group of individuals, events, or items of interest that the researcher desires to explore (Chua 2012). In order to obtain information on the reading attitude level of the preschoolers, the study targeted all private preschoolers in Johor, Malaysia. In a research conducted by Wang & Lee (2020), private preschool students demonstrated higher achievements in alphabetic knowledge and phonological awareness compared to public preschool students. The researchers also suggested that future research should include studying the influence of family socioeconomic status (SES) on phonological awareness. Furthermore, Mohd et al. (2017) revealed that private preschoolers exhibit a high level of global readiness in communication and possesses multiple language abilities.

First, a cluster sampling method was employed, where the accessible population was clustered into 11 District Education Offices (Pejabat Pendidikan Daerah, PPD), based on the division of district departments from the State Education Office, Johor (Jabatan Pendidikan Negeri Johor). According to Krejcie and Morgan (1970), for a significance level of $p=0.05$, the minimum number of respondents required for this study is 377 six-year-old private preschool children. The 377 pairs of student-parent dyads will be selected from 11 District Education Offices using the quota-stratified random sampling method. The samples will be chosen from each preschool based on the number of preschoolers registered in each respective preschools. The respondents will consist of the preschoolers and their respective parents (either father or mother). Thus, there will be a total of 377 parent-child dyads for data analysis. However, 3 samples were removed after the validation and reliability test. Hence, there are a total number of 374 parent-child dyads for data analysis.

Analysis of Data

The data will be quantitatively analysed using SmartPLS 2. This study aimed to investigate the relationship between physical literacy environment (independent variable), parent-child interaction in language and literacy activities (mediating variable) and reading attitude (independent variable). Data first demonstrate in descriptive statistics to show the basic information on the levels of the variables. Structural equation modelling (SEM) procedures with SmartPLS 2 will be employed to examine the mediating effect of the variables.

Results

Descriptive Statistic

Demographic Information

As illustrated in Table 2, the total number of mother respondents (84.8%, n=317) is much higher than the number of father respondents (15.2%, n=57). The majority of the respondents are in the age range of 31-40 years old, which is 228 respondents (61.0%).

Table 2. *Profiles of respondents according to demographic characteristics (N=374)*

Variables	Frequency	Percentage (%)
<u>Relationship</u>		
Mother	317	84.8
Father	57	15.2
<u>Parent's Age</u>		
Below 18	3	0.8
19-30 years old	57	15.2
31-40 years old	228	61.0
41-50 years old	79	21.1
51-60 years old	7	1.9

Home Literacy Environment Dimensions

Table 3 demonstrates the mean, standard deviation, and the level of home literacy environment dimensions. The study's investigation into various dimensions of the home literacy environment reveals insightful findings about the engagement and practices of parents in fostering literacy-rich surroundings for their children. The dimensions, assessed through mean scores and standard deviations, provide valuable insights into the prevailing levels of engagement within different aspects of the home environment.

Table 3. *Mean, standard deviation and the level of physical literacy environment and parent-child interaction in language and literacy activities (N=374)*

Dimension	Mean	Standard Deviation	Level
Physical Learning Environment	3.55	.85	Medium
Parent-Child Interaction in Language and Literacy Activities	3.50	.75	Medium

Note: Mean – Low level = 1.00 - 2.33; Medium level = 2.34 – 3.67; High level = 3.68 – 5.00

The dimension of Physical Literacy Environment demonstrates a mean score of 3.55 (S.D. = 0.85). This places it within the medium level of the interpretation scale, indicating that parents exhibit moderate involvement in creating a physical environment that supports literacy development. This dimension includes aspects such as the providence of designated spaces for books and toys, accessibility of reading materials, and the availability of toys that facilitate learning.

Parent-child interaction in language and literacy activities show a mean score of 3.50 (S.D. = 0.75), also within the medium level of engagement. This dimension reflects parent-child interaction in language and literacy activities centered on language and literacy development, such as activities like reading aloud, conversational engagement, and sharing experiences. The medium mean score implies a moderate degree of interaction.

Reading Attitude

Table 4 shows the frequency table according to each range of score of reading attitude indicators. The majority (63.64%) of the participants, consisting of 238 individuals, are extremely happy to be engaged, while 106 participants (28.34%) are slightly happy to be

engaged. A smaller proportion, 27 participants (7.22%), are slightly unhappy to be engaged, and only 3 individuals (0.8%) are extremely unhappy to be engaged. Overall, the majority of the group demonstrates a positive attitude towards engagement, with over 90% of participants expressing some degree of happiness.

Table 4. *Frequency table according to each range of score of reading attitude indicators (N=374)*

Range of Score	Interpretation	n	%
21-24	Extremely happy to be engaged	238	63.64
16-20	Slightly happy to be engaged	106	28.34
11-15	Slightly unhappy to be engaged	27	7.22
6-10	Extremely unhappy to be engaged	3	0.8
Total		374	100

Note: M=20.78, S.D. =3.21

Correlation Analysis

The Pearson Correlation Coefficient is employed to perform the correlation analysis. The strength and direction of the relationships between variables are indicated by the correlation coefficient (r), which ranges from +1.00 to -1.00, and its interpretation is outlined in Table 5. The result of the analysis as showed in the table below:

Table 5. *Pearson Correlation among Parent-child Interaction in Language and Literacy Activities, Physical Literacy Environment and Reading Attitude*

		RA	PLA	PLE
RA	Pearson Correlation	1	.146**	.055
	Sig. (2-tailed)		.005	.291
	N	374	374	374
PLA	Pearson Correlation	.146**	1	.551**
	Sig. (2-tailed)	.005		.000
	N	374	374	374
PLE	Pearson Correlation	.055	.551**	1
	Sig. (2-tailed)	.291	.000	
	N	374	374	374

Note: **. Correlation is significant at the 0.01 level (2-tailed).

Key: RA=Reading Attitude, PLA=Parent-child Interaction in Language and Literacy Activities, PLE=Physical Literacy Environment

According to the result, the parent-child interactions in language and literacy activities showed significant relationship with reading attitude ($r=1.46$, $p>.01$, however, the physical literacy environment ($r=.055$, $p>.05$) did not exhibit significant correlations with reading attitude. The observed correlations in the significant cases also suggest weak relationships between the variables.

Relationship between Physical Literacy Environment, Parent-Child Interaction in Language and Literacy Activities, and Reading Attitude

Table 6 shows the Bootstrapping result of SEM analysis with SmartPLS 2 on the relationship between physical literacy environment, parent-child interaction in language and literacy activities, and reading attitude. Individual path parent-child interaction towards reading attitude ($\beta=.183$, $t=2.610$, $p<0.05$). The positive coefficient of 0.183 suggests that a stronger parent-child interaction is associated with a more positive reading attitude. Individual path physical literacy environment towards parent-child interaction ($\beta=.563$, $t=15.462$, $p<0.05$) showed significant relationship with $t>1.96$ and $p<0.05$. The positive coefficient 0.563 suggests that as the physical literacy environment increases, the parent-child interaction in language and literacy activities also tends to increase significantly. However, individual path physical literacy environment towards reading attitude showed β value of -0.033 , $t=0.391$, $p>0.05$, meaning that the relationship is not significant, The coefficient of -0.033 suggests a weak and possibly negative associative, but the high p-value of 0.696 indicates that this relationship is likely not statistically real or significant, physical literacy environment does not have significant impact on reading attitude. R^2 for reading attitude is 0.028, meaning that 2.8% of the children's reading attitude was contributed by their physical literacy environment as well as interaction with their parents in reading activities.

Figure 1 illustrates the path coefficients within the mediating model, offering a comprehensive representation of the relationships examined, including the mediating effect of parent-child interaction in language and literacy activities on the connection between physical literacy environment and reading attitude. In terms of the model, the R^2 for private preschoolers' reading attitude is 0.028, which indicates small effect size according to Cohen (1988). In simpler words, physical literacy environment and parent-child interactions in

language and literacy activities contribute to maximizing private preschoolers' reading attitude by 2.8%.

Table 6. Mediating effect analysis of reading attitude on the relationship between physical literacy environment and parent-child interaction in language and literacy activities

	Beta	Standard Deviation	T Statistics	P Values	R ²	Result
PLE -> PLA a	0.563	0.036	15.462	0.000	0.317	Significant
PLA -> RA b	0.183	0.070	2.610	0.009	0.028	Significant
PLE -> RA c'	-0.033	0.084	0.391	0.696	0.028	not Significant
PLE -> PLA -> RA a x b	0.103	0.041	2.531	0.011		Significant

Key: PLE = Physical Literacy Environment; RA = Reading Attitude; PLA = Parent-Child Interaction in Language and Literacy Activities

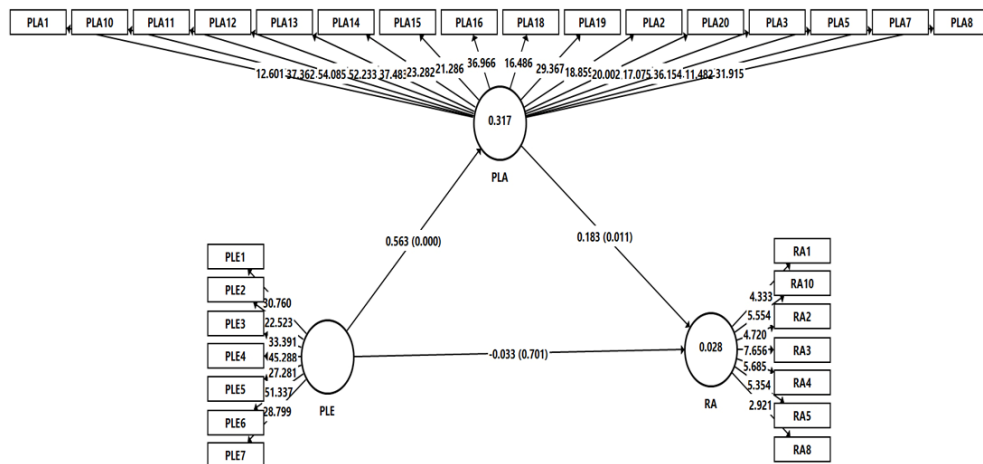


Figure 1. Mediating effect model of parent-child interactions in language and literacy activities on the relationship between physical literacy environment and reading attitude

Mediation Analysis

Mediation analysis was performed to assess the mediating role of parent-child interaction in language and literacy activities on the linkage between physical literacy environment and

reading attitude. As indicated in Table 6, the indirect relationship from parent-child interaction in language and literacy activities to the connection between physical literacy environment and reading attitude ($\beta = .103$, $t = 2.531$, $p < 0.05$) also yields a statistically significant outcome. This implies the existence of a full mediating effect within this relationship. Physical literacy environment does not have impact on children's reading attitude, however, by occurring interaction between parent and children, the provision of home literacy resources can influence children's reading attitude.

Discussion

The result showed that there is a statistically significant relationship between parent-child interaction for language and literacy activities and reading attitude. As such, parent-child interaction for language and literacy activities is said to be the factor contributing to children's reading attitude in the home literacy environment. The result of the study is congruent with the study done by Ganotice et al. (2017), Majid (2018), Rahmi (2018), and Tong et al. (2021) where when parental involvement in conducting more reading activities with the children in supporting children's literacy development, this will further promoting children's reading motivation and reading attitude. Besides that, Flores (2019) also indicated that the time parents spend reading picture books to their children will enhance their enjoyment of reading. Besides that, Nicolien van Haeften (2021) discovered a significant weak effect between early literacy activities and reading enjoyment among young children.

The study's results shed light on the crucial role of parent-child interaction in language and literacy activities in shaping children's reading attitudes. The research demonstrates that when parents and children engage in activities that involve talking, reading, and sharing stories at home, it has a positive influence on how children perceive and feel about reading. This finding underscores the importance of parents' involvement in their children's learning journey, as it can significantly impact their attitudes towards reading. In other words, spending quality time with children through language and reading activities can help them develop a love for reading.

Result of analysis also revealed no significant correlation between the physical literacy environment and reading attitude. The provision of reading materials and the literacy environment at home may not have a substantial impact on preschoolers' reading attitude. In the past literature, Boerma et al. (2018) did not find a significant relationship between the number of books at home and a child's perceived reading interest ($r=.15$, $p>.05$) in their study, which focused on third and fourth graders with a mean age of 9.49 years. Similarly, Dewi & Prawita (2019) found that children's attitudes towards academic reading were not statistically significantly different based on the number of books and magazines purchased. While books and a variety of reading materials may be expected to foster reading interest among children, scholars also argue that books alone might not be effective if children are not inclined to read them. Consequently, cultivating a reading habit necessitates selecting age-appropriate books that match children's cognitive abilities (Purnamasari & Hamidah, 2018).

The research outcome also reveals an interesting twist where the physical literacy environment, does not seem to directly affect their reading attitudes. This means that whether a child grows up in a literacy rich family or disadvantaged homes, this doesn't necessarily determine how they feel about reading books. The absence of a direct link between physical literacy environment and reading attitude suggests that home resources may not be as influential as the interactions and activities that occur within the home. The Vygotsky's Socio-cultural Theory emphasizes the importance of social interactions and cultural tools in learning. While physical environment can offer resources, reading attitudes are more powerful shaped by social interactions, such as meaningful discussions about texts which modelling by adults. As such, a well-equipped space without active social engagement may not inspire positive reading attitudes.

However, despite the findings of the current research not aligning with these patterns, it is important to consider the potential impact of the COVID-19 pandemic. The data collection for this study was conducted during the COVID-19 pandemic, which had a global impact starting in 2020. Alsubaie (2022) observed a decrease in the learning materials provided at home before and during the pandemic, indicating that the pandemic might have influenced the home literacy environment. Parental engagement is more crucial than ever because early childhood education practises are heavily impacted by informational sources and the media (Masganti et al., 2023). Weinstein (2021) emphasized the need for more research into the

adjustment of the learning environment to online platforms and its impact on children's social, emotional, and academic development. Understanding that technology and digital learning activities at home can positively influence children's reading attitude and motivation (Ohi, 2018) is crucial for parents.

The research result suggests the existence of a full mediating effect within this relationship. Full mediation means that physical literacy environment does not have a direct impact on children's reading attitude. Instead, the impact of physical literacy environment on reading attitude is completely explained by the occurrence of parent-child interaction in language and literacy activities. When parents and children engage in language and literacy activities at home, it leads to the provision of home literacy resources that, in turn, influence children's reading attitude positively. It means that the quality of interactions between parents and children acts like a bridge connecting the physical environment to how children perceive reading. It's not just how sufficient of the home reading resources matters; it's what parents and children do together that makes the real differences. This findings highlights the significant impact of family dynamics and involvement in shaping children's attitudes and feelings towards reading.

Limitation of the Study

The worldwide pandemic, COVID-19, has had an enormous impact on the research process. Due to the restrictions on the Standard of Procedures in the schools, outsiders, besides kindergarten children and staff, are not allowed to enter the school compound to minimize the chance of children coming into contact with outsiders and prevent virus transmission. Consequently, the typical way of conducting the survey in person at kindergarten has become a challenge for the researcher. Additionally, the Malaysian government announced Movement Control Orders in different localities at various periods, further complicating the researcher's ability to travel to the selected kindergartens to conduct the survey. As a result of these constraints, the researcher had to resort to an online survey, using platforms such as Zoom and Google Meet, to survey the kindergarten children and their parents.

Implications

This result has practical implications for educators, parents and policymakers. It suggests that enhancing parent-child interaction in language and literacy activities can be an effective way to promote positive reading attitudes in children, even if the physical literacy environment may not directly impact their attitudes toward reading. Parents can take away from this study that spending time with their children engaged in reading and language activities can significantly contribute to their child's positive outlook on reading. It reinforces the idea that reading together, telling stories, and fostering conversations about books can be a powerful way to instil a love for reading in their children.

For educators and policymakers, these findings emphasize the importance of promoting literacy programmes and initiatives. Encouraging parents to actively participate in their children's reading development, especially through language-rich interaction, can be a valuable strategy in schools and communities. It suggests that interventions aimed at improving children's reading attitudes should not solely focus on the school environment but should extend into the home where parent-child interaction in language and literacy activities play a pivotal role.

Conclusion

Based on these findings, educational interventions aimed at promoting parent-child interaction in language and literacy activities related to language and literacy may be developed and implemented to improve children's reading attitudes. Schools and educational programmes can provide guidance and resources to parents to facilitate these interactions.

In summary, this research suggests that the relationship between the physical literacy environment and children's reading attitude is fully mediated by parent-child interaction in language and literacy activities. This finding underscores the importance of fostering supportive home environments and family engagement to promote positive attitudes towards reading in children.

The research results offer a compelling insight into the dynamics of reading attitudes in children. They highlight that while the physical literacy environment does not matter to some extent, the magic ingredient lies in the interactions and experiences shared between parents and children. By fostering a rich environment for language and literacy activities at home, parents can be powerful agents in shaping their children's positive attitudes towards reading, ultimately contributing to their lifelong love for books and learning.

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