


Contextualizing early childhood literacy: lessons from Thailand's nationwide reading initiative

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Article Info	ABSTRACT
<p>Article history:</p> <p>Received Sep 24, 2024 Revised Mar 24, 2025 Accepted May 9, 2025</p> <hr/> <p>Keywords:</p> <p>Early childhood development Literacy programs Reading habits Reading initiative Welfare initiative</p>	<p>This study critically evaluates a three-book welfare initiative aimed at enhancing early childhood literacy across diverse regions in Thailand, addressing a gap in the literature concerning region-specific variations in program effectiveness. Utilizing a quantitative methodology, the study surveyed all 642 parents and caregivers of children aged 0-6 years across four regions, applying Bronfenbrenner's ecological theory to assess changes in reading behaviors and family involvement pre- and post-intervention. Results showed a positive impact on reading habits and family engagement, yet revealed significant regional disparities, highlighting the influence of local socioeconomic and cultural factors on program outcomes. These findings emphasize the need for context-sensitive literacy programs tailored to the unique conditions of different regions to maximize effectiveness and reduce educational inequalities. The study concludes that while the welfare initiative shows promise, its varied impact suggests that more adaptable, region-specific interventions are necessary, and future research should incorporate longitudinal and qualitative analyses for a deeper understanding of early childhood literacy dynamics.</p> <p><i>This is an open access article under the CC BY-SA license.</i></p> <div></div>

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1. INTRODUCTION

Lifelong learning is a dynamic process shaped by key factors, including reading, which plays a vital role in children's identity formation and cognitive growth [1]–[4]. Reading contributes to language development, societal learning, and sustainable development [5]–[7], making it essential for both formal and informal education [8]. However, despite its significance, Thailand faces persistent literacy challenges, with a significant portion of the population refraining from reading [9]. A major issue is the lack of a strong reading culture, particularly in low-income families, which necessitates an in-depth investigation into the root causes of poor reading habits and their societal implications [10], [11]. According to the population reading year 2018 report, 21.2% of the Thai population (13.7 million people) abstains from reading [9]. Understanding how family dynamics, economic conditions, and social factors shape reading behaviors is essential to develop targeted interventions, particularly for children aged 0–6 years. Addressing this learning deficit requires strategic literacy initiatives to promote a lifelong reading culture and enhance socio-economic development [12]. This study examines the impact of Thailand's three-book welfare initiative on family reading behaviors and literacy development. Using Bronfenbrenner's ecological systems theory, it explores how various environmental systems influence reading habits, as shown in Figure 1. Bronfenbrenner's ecological systems theory provides a framework for understanding how environmental factors shape parenting and children's

reading development. The microsystem includes direct influences like family and schools, while the mesosystem focuses on interactions between these settings, such as parental involvement in education. The ecosystem covers broader community programs, and the macrosystem reflects societal and cultural values that shape literacy development. The chronosystem highlights how life events and time impact a child's growth [13]. Reading plays a crucial role in lifelong learning by enhancing cognitive and emotional development [14]. Collaborative learning systems, supported by effective communication and community involvement, strengthen literacy initiatives and promote holistic child development [14]. This framework highlights the interaction between individuals and their surroundings, emphasizing cooperation at multiple levels to ensure effective literacy interventions [5]. By analyzing contextual disparities, this study aims to develop collaborative reading guidelines that optimize the initiative's impact, making literacy promotion more effective, inclusive, and regionally adaptive, as shown in Figure 1.

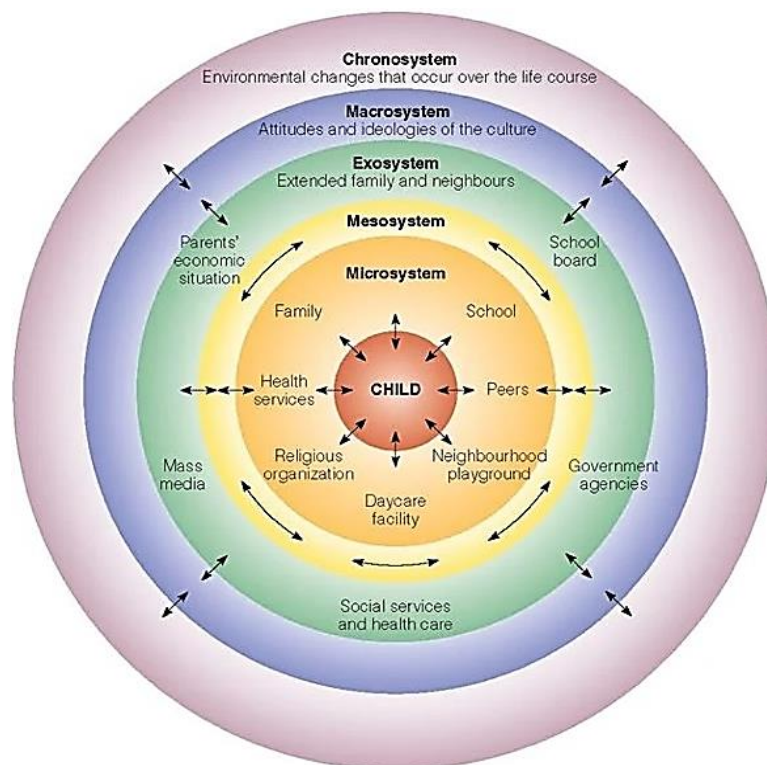


Figure 1. Bronfenbrenner's ecological

This study examines a community-driven approach to policy supervision, monitoring, and supporting early childhood literacy in Thailand, aligning with 21st-century competency frameworks [15]–[18]. Using a quantitative methodology, it surveys parents and caregivers of children aged 0-6 across four regions to evaluate the impact of Thailand's three-book welfare initiative on family reading behaviors and literacy development. Applying Bronfenbrenner's ecological systems theory, the study explores how different environmental systems influence reading habits, emphasizing cooperation at multiple levels to ensure effective, inclusive, and regionally adaptive literacy interventions [5]. It investigates changes in parental reading frequency, storytelling practices, and children's engagement, highlighting post-reading activities that strengthen family bonding and learning. Additionally, the study assesses how the initiative supports reading comprehension related to health and safety during COVID-19. Findings aim to enhance literacy promotion, parent-child relationships, and overall family well-being through structured reading programs, as illustrated in Figure 2.

Extensive research highlights the importance of early reading exposure for children and adult literacy programs to enhance learning across demographics [19]. Studies emphasize the effectiveness of early literacy interventions [20], different instructional approaches [21], and the need for thorough implementation strategies [22]. Intensive reading programs have been proven to bridge literacy gaps and improve academic outcomes [23], while equitable access to reading opportunities supports critical thinking, collaboration, and lifelong learning [24], [25]. The COVID-19 pandemic further underscores the need for adaptive and resilient

educational strategies [26], [27]. Despite ongoing efforts, Thailand faces low reading rates due to financial barriers, limited book access, and media distractions [28]. Socioeconomic inequality limits book availability in over 1.1 million Thai homes, leading to a learning deficit equivalent to one academic year, reflected in low PISA scores and worsening education disparities. Addressing these issues requires targeted policies and interventions to promote lifelong learning and equal access to literacy resources. Key innovations of this study are: i) Regional sensitivity conducts large-scale, region-specific assessments to examine how geographic, socioeconomic, and cultural factors influence early literacy; ii) Application of Bronfenbrenner's theory—uses an ecological framework to analyze how family, school, community, and policy environments interact to shape reading behaviors; and iii) Beyond literacy: a holistic development approach—expands beyond reading skills to assess cognitive development, curiosity, and awareness of health behaviors (e.g., COVID-19 protection). This study provides new insights into literacy interventions, advocating for tailored, region-specific policies rather than a one-size-fits-all approach to reduce educational inequality and promote a lifelong reading culture in Thailand.

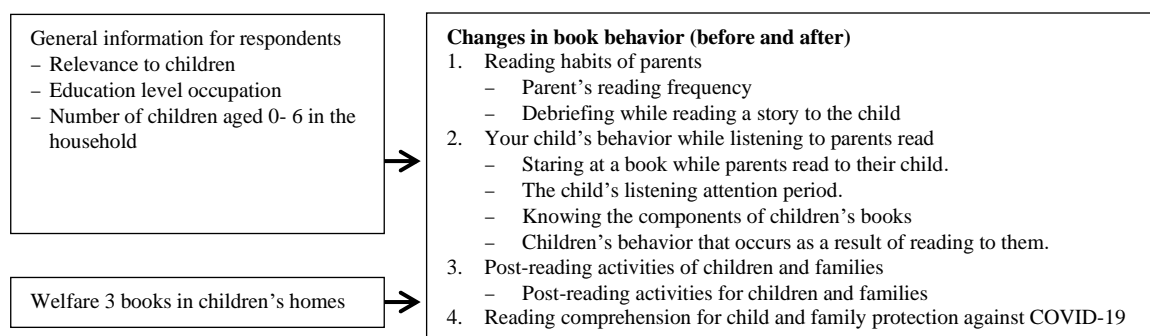


Figure 2. Research framework

2. METHOD

2.1. Research process

This investigation actively monitors and assesses welfare programs distributing three books in children's homes, aiming to understand transformative shifts in family book utilization behaviors and identify key influencing factors. The primary goal is to outline comprehensive guidelines for fostering community collaboration in these initiatives. Additionally, the study explores the role of reading comprehension in mitigating the impact of COVID-19 among children and families in Thailand. Employing a research methodology inspired by the theoretical framework integrates principles of cooperative work, Deming's plan-do-check-act (PDCA) model, and efficiency and effectiveness concepts, providing a robust conceptual foundation for the educational context under consideration as presented in Figure 3.

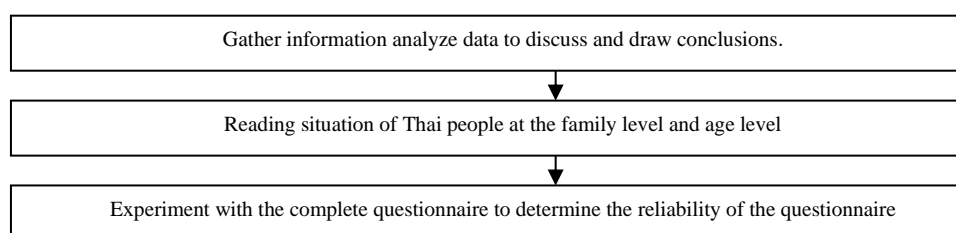


Figure 3. Deming's PDCA model

2.2. Research methodology

The method of data collection employed in this research is the quantitative research method, involving systematic data collection through an inquiry-based approach from a selected sample of 738 families and 642 families responded (86.99%) this high response rate underscores the reliability of the collected data from parents or caregivers in the specified regions and provinces. The study employs a

meticulous selection process for families, tailored to specific operational areas. A key strategic collaboration exists with a coordination center committed to fostering a reading culture in local communities. This center plays a crucial role within the reading promotion network, serving as a hub for learning exchanges and specializing in training and operations to expand the network's outreach for promoting a reading culture.

Central to the study is the appointment of a core health communicator dedicated to promoting reading. This communicator is instrumental in developing criteria that govern support for a welfare campaign involving the distribution of three books to families. These initiatives are carefully designed to infuse formality, rationality, and a compelling rationale into the program, ensuring its effectiveness and impact as: i) the request for welfare support for three books is for monitoring the use of books in the early childhood development of the area for education and research; ii) it is a poor family, there is not enough income to buy books; iii) there are no children's books in the family; iv) family with a pregnant mother or child up to 6 years old; v) parents express the intention to read a storybook to their children daily if provided with one; vi) follow-up evaluation is welcomed before and after the use of the book; and vii) there is a collective agreement. Creating opportunities for the community support as a policy for continuity.

2.3. Target sample characteristics

The study's sample comprises parents or caregivers of early childhood children aged 0–6 years in families receiving welfare for three books across four regions and nine provinces in Thailand. These regions are: i) Northern Thailand, including three provinces: Phayao, Chiang Mai, and Lampang; ii) Northeastern Thailand, encompassing three provinces: Roi Et, Loei, and Surin; iii) Central Thailand, represented by Bangkok as a single province; and iv) Southern Thailand, covering two provinces: Nakhon Si Thammarat and Yala. The sample collection process has proven successful, with a 100% retrieval rate for all kits distributed to families. Additionally, all 642 distributed questionnaires have been completed.

2.4. Validity and reliability

To ensure the questionnaire's validity and reliability, a structured approach was implemented. Validity, which measures how well the questionnaire assesses early childhood literacy behaviors and the welfare program's impact on family involvement, was established through multiple methods. Content validity was confirmed by educational experts, ensuring comprehensive coverage of reading habits, family engagement, and regional disparities. Construct validity was verified by aligning questions with Bronfenbrenner's ecological theory and using factor analysis. Criterion validity was assessed by comparing findings with existing literacy benchmarks and past research. The questionnaire's reliability was ensured through multiple methods. Internal consistency was tested using Cronbach's alpha, with values above 0.7 indicating strong reliability. Test-retest reliability confirmed response stability over time, while inter-rater reliability (0.78) ensured consistent scoring for subjective questions. A pilot study with a small group allowed for refinements to improve clarity and precision. These measures enhanced the questionnaire's reliability, ensuring robust data on the regional impacts of the three-book welfare initiative on early childhood literacy in Thailand.

3. RESULTS AND DISCUSSION

3.1. Demographic data analysis

At this stage, the researchers adopt a frequency distribution approach to examine the presence of the welfare projects in the area covered. The sample collection process has proven successful all 642 respondent's representative from every part in Thailand as the result show. The sample size for this study was determined based on the need to achieve a statistically significant representation of the population. We aimed to ensure that the sample was large enough to detect meaningful differences and relationships within the data. The sample size of 642 families was selected using a combination of stratified and random sampling techniques to ensure representation across the four regions of Thailand: Northern, Northeastern, Central, and Southern. This approach aligns with recommendations from Cochran for determining sample sizes in social science research, which suggest that a sample size of at least 384 is adequate for large populations to achieve a 95% confidence level with a 5% margin of error. Therefore, our sample size of 738 exceeds this threshold, providing a robust basis for our analysis. The findings from the demographic data from the sampled parents or caregivers of early childhood children, aged 0–6 years, in families benefiting from the three-book welfare initiative in four regions across nine provinces in Thailand are elucidated as: i) Northern Region comprising Phayao, Chiang Mai, and Lampang, with Chiang Mai receiving the highest welfare for three books (31.2%), followed by Lampang (19.3%); ii) Northeastern Region including Roi Et, Loei, and Surin; iii) Central Region represented by Bangkok; and iv) Southern Region including Nakhon Si Thammarat and Yala, with Nakhon Si Thammarat leading at 13.6%. Detailed statistics are presented in Figures 4 and 5 with 642 families sampled.

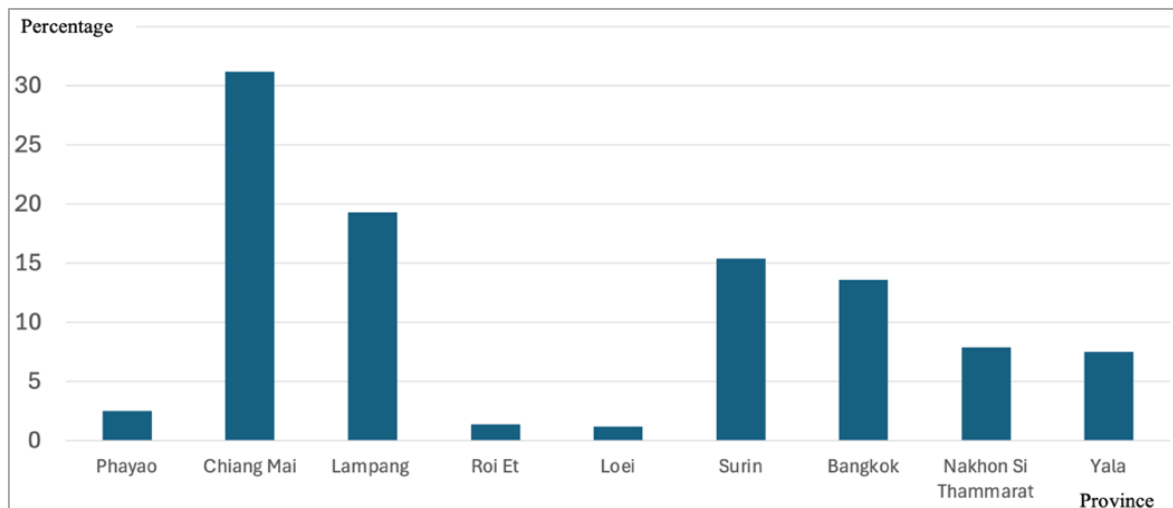


Figure 4. Province of respondents

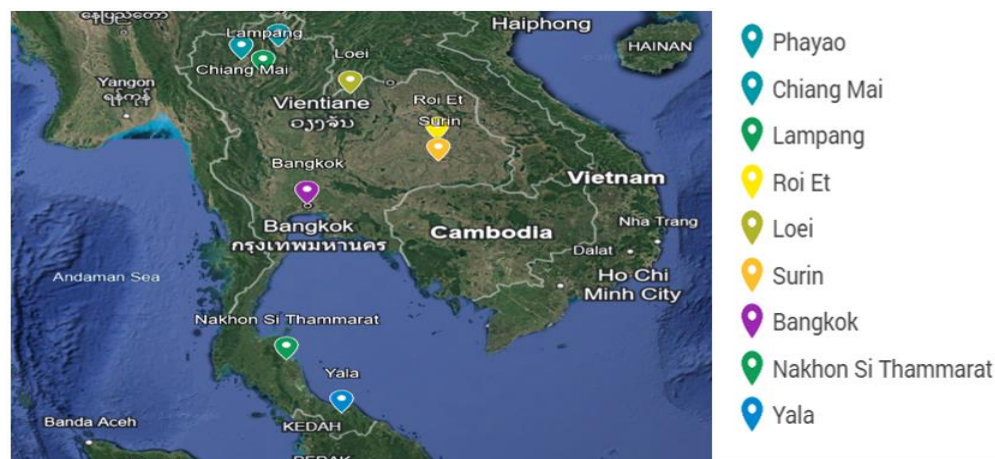


Figure 5. The point of province

Analyzing the demographic distribution among respondents, encompassing parents, and caregivers of early childhood children across all nine provinces, the findings reveal that the majority of respondents were mothers (females), constituting 66.0% of the sample. Grandparents represented 19.2%, fathers 7.9%, teachers, caregivers, and mentors 2.8%. The remaining categories included uncles and aunts (2.0%), elder siblings (1.2%), and other relatives (0.3%). Additionally, a small percentage (0.5%) chose not to provide information or declined to respond. The research area specifics related to the welfare projects of the three books are comprehensively present in Figure 6.

Moreover, the study identified that the educational background of the majority of respondents primarily consisted of secondary school graduates, totaling 309 individuals, constituting 3.1% of the sample. Following this, those with an elementary school education amounted to 154 people, representing 24.0%. Individuals with a bachelor's degree accounted for 88 persons, equivalent to 13.7%, while those with a diploma or equivalent numbered 16 persons, comprising 2.5%. Additionally, 11 individuals possessed a vocational diploma or certificate, making up 1.7%, and 12 reported not pursuing formal education, accounting for 1.9%. Postgraduate qualifications were held by six people, reflecting 0.9%. A smaller proportion, 4 individuals (0.6%), indicated educational attainment below primary school. Notably, 42 persons, representing 6.5%, opted not to disclose their educational information or did not respond, as delineated in Figure 7.

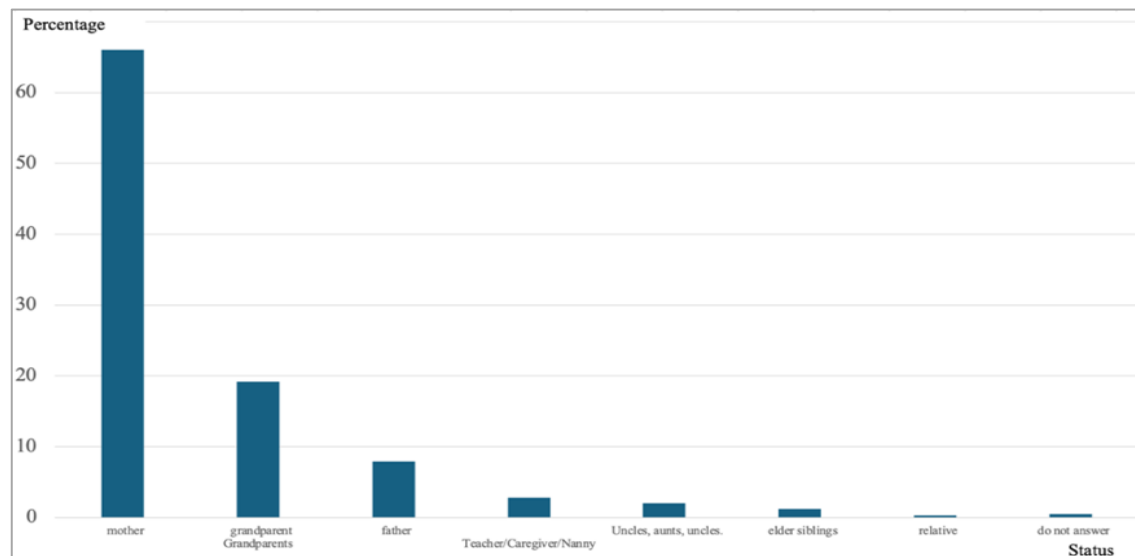


Figure 6. The status of respondents

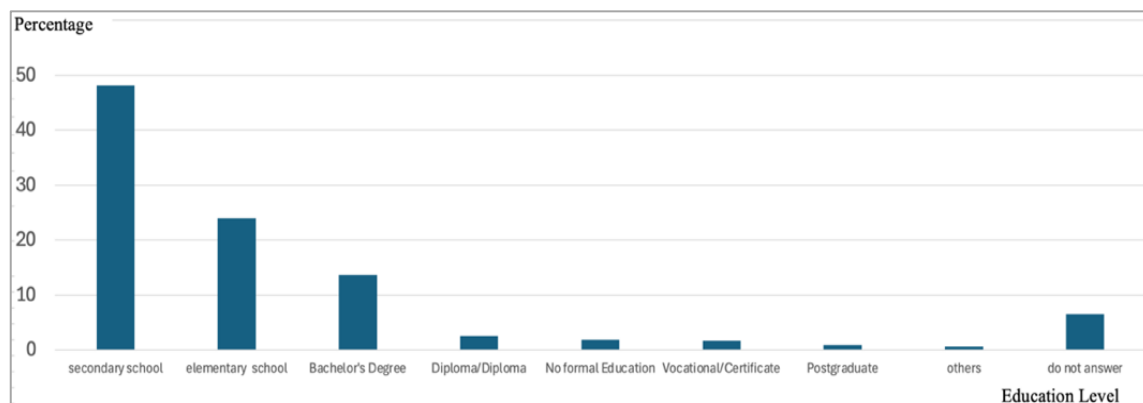


Figure 7. The education level of respondents

Among the 642 respondents, the predominant occupation involved general contracting activities, including daily general hire, construction, childcare, and house painting, comprising 195 individuals (30.4%). Self-employment and service-based roles, such as grocery store management, motorcycle repair, beauty salons, laundry services, and motorbike taxis, accounted for 134 respondents (20.9%). Agriculture, fishing, and livestock-related occupations included 61 individuals (9.5%), while 44 (6.9%) worked in private companies, factories, hotels, and stores. Government employment was represented by 25 individuals (3.9%), with an additional 23 (3.6%) in government service roles. Smaller occupational groups included teachers and students, each with 6 respondents (0.9%), and healthcare professionals, including doctors and nurses, totaling 3 individuals (0.5%). Additionally, 94 individuals (14.6%) were classified as unemployed, including 39 (6.1%) who did not disclose their employment status. A detailed breakdown is presented in Figure 8.

The investigation into families with children aged 0–6 years revealed distinct patterns in terms of the number of children within each family. The majority, comprising 466 families, or 72.6%, had a single child aged 0–6 years. Following this, 147 families (22.9%) had two children in the same age group, while 10 families (1.6%) had three children aged 0–6 years. A smaller proportion of 2 families (0.3%) had four children, and a sole family (0.2%) had five children within the specified age range. Furthermore, when examining child development centers, it was observed that the highest number of children aged 0–6 years under their care was 20 individuals. Subsequently, 18 individuals constituted the second-highest count, accounting for 0.2%. Additionally, 14 families (2.2%) either chose not to provide information or did not respond. The detailed breakdown of these findings is presented in Figure 9.

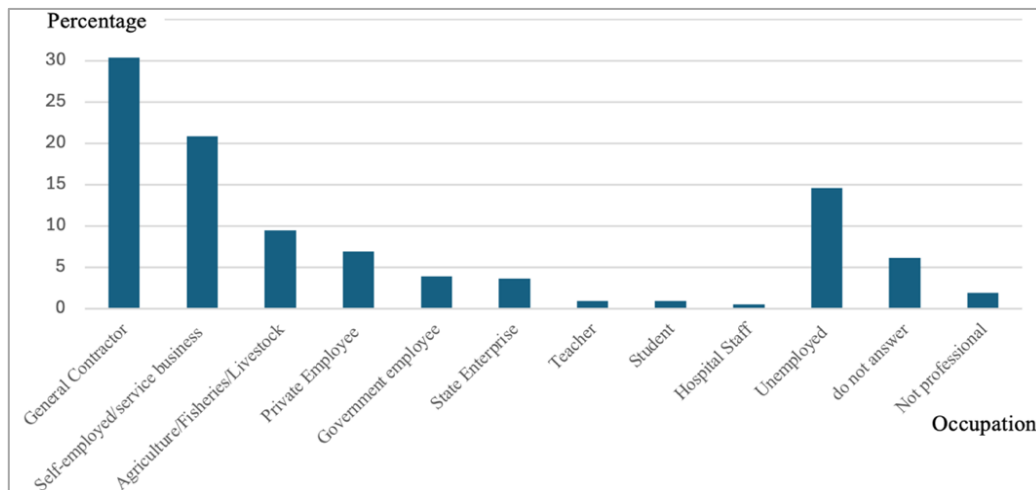


Figure 8. The occupational of respondents

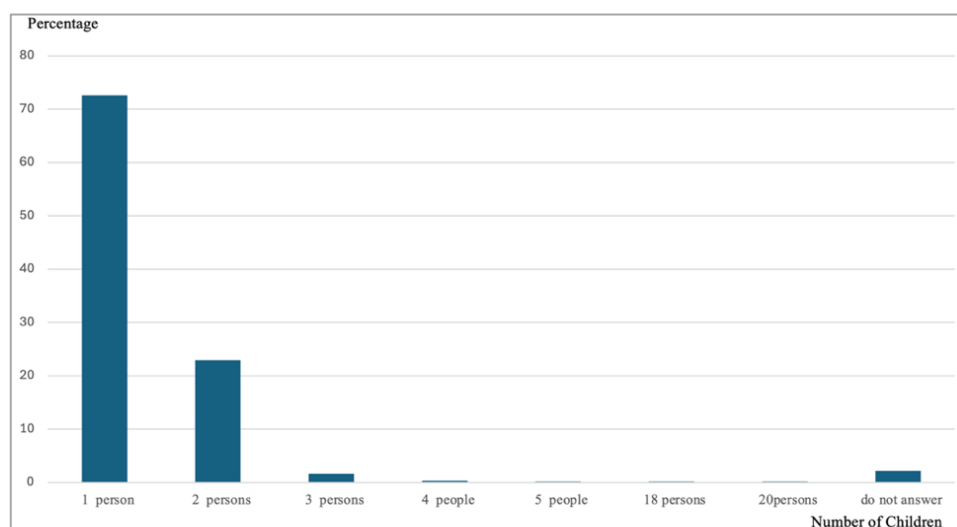


Figure 9. The number of children aged 0-6 in the family

3.2. Examining the changes in behavior before and after books distribution

To examine the changes in general behavior before and after receiving the three books for three months, we conducted a detailed analysis. The results indicate a significant difference in general behavior. Before receiving the books, the mean behavior score was 0.615 with a standard deviation of 0.343. After receiving the books, the mean behavior score increased to 0.926 with a standard deviation of 0.156. This change is statistically significant, with a t-value of 24.124 and a p-value of less than 0.0001. This suggests that the intervention had a substantial positive impact on the general behavior of the participants. We examine the changes in the general behavior before and after receiving the three books for three months. The result shows that there is a significant difference in the general behavior having prior behavior ($M=0.615$, $SD=0.343$) after receiving books ($M=0.926$, $SD=0.156$), $t(24.124)$, $p<0.0001$. Details are shown in Table 1.

The analysis revealed a statistically significant improvement ($p<0.05$) in book usage behavior three months after receiving the books. Parents and children demonstrated increased engagement, with 0.91 more frequent reading sessions by parents/caregivers and 0.99 higher tendency for children to focus on books while listening or 0.92 more questions asked by children during reading and 0.91 greater understanding of book components. Then 0.91 increase in post-reading activities (e.g., discussing stories, related activities) and 0.98 improved awareness of COVID-19 safety measures (e.g., wearing masks, handwashing). These findings confirm the positive impact of the initiative on family reading habits and child development. Details are provided in Table 2.

Table 1. T-test results showing changes in behavior

Behavior level	Average	S.D.	Average difference	Standard deviation of difference	t	P
Behavior before receiving the book	0.615	0.343	-0.310	0.324	-24.124	0.000
Behavior after receiving the book	0.926	0.156				

Table 2. Statistical results of behavior analysis before and after receiving the book t-test questions

No.	Book usage behavior	Mean		SD		Mean difference	SD of difference	t	P
		Before	After	Before	After				
1	Parents or guardians reading to child (children) every day.	0.45	0.91	0.50	0.28	0.463	-0.508	-22.82	0.00
2	Children stare at books while their parents read them (for children 7-8 months and older).	0.68	0.99	0.466	0.072	0.311	-0.463	-16.15	0.00
3	Your child is interested in listening to stories for at least 5 minutes (for children 2 years and 6 months and older).	0.67	0.97	0.47	0.176	0.295	-0.467	-15.42	0.00
4	You are the one who chooses the books to read.	0.55	0.91	0.497	0.286	0.356	-0.512	-17.42	0.00
5	The child asks questions while reading the story.	0.61	0.92	0.488	0.277	0.304	-0.471	-16.15	0.00
6	Your child knows the components of the book.	0.59	0.91	0.493	0.293	0.319	-0.475	-15.28	0.00
	– Know the front cover, back cover.	0.54	0.87	0.499	0.333	0.337	-0.480	-17.45	0.00
	– Know how to open books from right to left (for children 1 year 6 months and older).	0.62	0.91	0.485	0.288	0.286	-0.459	-15.44	0.00
	– Know how to hold the book in the right direction. No somersaults.	0.61	0.91	0.489	0.288	0.301	-0.463	-16.18	0.00
7	Children and families understand how to protect themselves from COVID-19, such as wearing masks. Always wash your hands before eating.	0.84	0.98	0.371	0.143	0.144	-0.360	-9.99	0.00
8	Families do post-reading activities with children discuss the subjects in the book, do activities at the end of the book together.	0.63	0.91	0.483	0.281	0.282	-0.523	-13.47	0.00

Statistically significant at 0.05

Before interpreting the results, a negative t-value was observed, indicating that post-test means were higher than pre-test means, signaling a significant positive change. The paired sample t-test showed a significant improvement in children's reading behavior when assisted by parents, increasing from (M=0.45, SD=0.50) to (M=0.91, SD=0.28), $t=22.82$, $p<0.001$. For children aged 7-8 months and older, their engagement while being read to improved from (M=0.68, SD=0.47) to (M=0.99, SD=0.07), $t=16.15$, $p<0.05$. Similarly, children above 2.5 years showed a significant increase in listening to stories for at least five minutes, from (M=0.67, SD=0.47) to (M=0.97, SD=0.176), $t=15.42$, $p<0.05$. Additionally, granting children the freedom to choose their reading material significantly influenced engagement, increasing from (M=0.55, SD=0.497) to (M=0.91, SD=0.286), $t=17.42$, $p<0.05$. Lastly, allowing children to ask questions while being read to show a significant impact, with scores rising from (M=0.61, SD=0.488) to (M=0.92, SD=0.277), $t=16.15$, $p<0.05$. These findings highlight the positive effects of interactive reading practices on early childhood literacy development.

A deeper investigation in this research asks if the child(ren) were familiar with the book content before and after exposure. The finding reveals a significant difference before and after exposure to book content (M=0.59, SD=0.493) and after (M=0.91, SD=0.293), $t=15.28$, $p<0.05$. Also, we examine if the child(ren) could identify the front and book cover after exposure to the book reading activities. The result signifies that the child(ren) could identify the book front and back cover with ease, having a significant result (M=0.54, SD=0.499), (M=0.87, SD=0.333), $t(17.45)$, $p<0.05$. Not only that, but we also examined if the child(ren) from age one and a half and above could open the books from right to left before and after exposure to the book program. The statistical analysis reveals that there is a significant difference in the mean before (M=0.62, SD=0.485) and after the program (M=0.91, SD=0.288), $t=16.81$, $p<0.05$. The results observed in this sense show that they do not only know how to open books from right to left but also understand the process. Additionally, this study investigates whether the child(ren) knows how to hold the book in the right direction without falling. Using a pairwise sample t test, the findings reveal that prior to and after the book program exercise, the child(ren) understands how to hold the book in the right direction to avoid falling, as before (M=0.61, SD=0.489), and after the book program (M=0.91, SD=0.288), $t=16.18$, $p<0.05$.

Meanwhile, this book reading exercise did not only cover traditional reading; it also captured how families could protect themselves from the deadly virus (COVID-19). Given this, the participants were exposed to books on COVID-19 prevention; hence, investigations were made in this regard. The second-to-last investigation was directed at COVID-19 self-protection practices, which include frequent hand washing before eating, wearing a nose mask, and distancing. The analysis result before and after exposure to the book program reveals that the children and families understood how to protect themselves from the COVID-19 virus before ($M=0.84$, $SD=0.371$) and after exposure ($M=0.98$, $SD=0.143$), $t=9.99$, $p<0.05$. The result in this sense implies that the book program has a significant influence on understanding the COVID-19 protocol. The last behavioral change we examined in this section pertains to post-reading activities with children, that is, discussing the book subject and practicing the book activities with them. The findings reveal that the book program significantly influences post-reading activities after conducting a pairwise sample t test with before program ($M=0.63$, $SD=0.483$), after program ($M=0.91$, $SD=0.281$), $t(13.47)$, $p<0.05$.

3.4. Discussion

The findings, starting from the changes in reading behavior among the investigated samples to post-reading activities attest to claims of earlier investigations pertaining to the effectiveness of literacy intervention programs among children at the earlier stage [20]–[22]. The findings from this study reveal that the book intervention program enhances the reading behavior among the children, parents, guardians or caregivers, which corresponds to the affirmation made by Datta *et al.* [29], where the scholars affirm the positive effectiveness of reading intervention to improve literacy and reading level among children at the earlier stage. Furthermore, the findings in this investigation pertain to the mode in which the intervention program was implemented: content reading to children [30]–[32]. The findings in this study reveal that this approach is effective, confirming the evidence [33], [34] who opined that reading book contents to children while they stare at them enhances literacy and reading skills at an earlier stage in life. Moreover, study by Coyne *et al.* [35] said that the children who learn through social media have a negative effect on the development of reading skills. Frequent social media use can shorten attention spans and create a preference for instant gratification, making it challenging for children to engage in the focused, sustained reading that books require. Balancing screen time with reading can help maintain their ability to focus deeply.

Then this study show breaking the cycle of poverty and inequality demands a radical redistribution of power, opportunities, and assets as Gersten *et al.* [36] suggested the ending poverty and inequality calls for a bold shift in how power, opportunities, and resources are distributed. Parental influence plays a critical role in shaping achievement motivation and engagement in students [37]. When parents set high expectations, provide support and empowerment, and model a positive attitude toward learning, children are more likely to develop a strong motivation to succeed and remain actively engaged in their studies [38]. Furthermore, parents should support not only academic motivation but also their children's health, as both are essential for overall development and success [39]. A balanced approach promoting physical well-being, mental health, and academic encouragement helps children stay engaged, motivated, and resilient in their learning journey. Additionally, this study examines the effectiveness of inquiry-based learning in children, allowing them to ask questions when the program is unclear. The findings show that asking questions by these children is influential in enhancing their reading and learning skills, attesting to the conclusions of earlier scholars who argued that allowing children to ask questions during a program increases the effectiveness of the program outcomes and the cognitive abilities of these children.

The final section of this study indirectly assesses the intervention program's effectiveness by examining respondents' application of COVID-19 safety measures learned from the book. This approach evaluates post-reading behaviors and cognitive engagement. The ability to discuss book content and apply learned safety measures indicates the program's impact. Findings align with previous research supporting the effectiveness of intervention programs in enhancing literacy, cognitive skills, and knowledge application in early childhood. Additionally, analysis showed no statistically significant relationship ($p>0.05$) between the number of children aged 0-6 in a family and changes in family book habits. Detailed findings are in Table 3.

Table 3. Analysis outcomes examining the association between book usage behavior and the number of children aged 0-6 years within the family

Source of variance	SS	df	MS	F	P
Between groups	0.428	6	0.071	1.600	0.145
Within a group	27.696	621	0.045		
Combine	28.124	627			

The analysis of children's behavior after reading sessions with parents or caregivers revealed distinct patterns. A notable majority of children exhibited positive behavioral changes, with increased interest in books (including pictures and cartoon characters) and heightened attention and concentration, constituting 30.4% [40]–[42]. Following closely, a significant portion of children displayed observant and curious behavior, an inclination towards more questions and imagination, and an enhanced ability to utilize vocabulary from books in conversations and imitate character behaviors, totaling 15.7%. Moreover, a notable percentage of children, 4.2%, reported experiencing greater joy, cheerfulness, and enjoyment during listening and reading sessions. Additionally, a smaller proportion, 3.0%, shared the stories they read and listened to, Kiviranta *et al.* [43] applying the knowledge gained from these sessions in their daily lives. These findings underscore the positive impact of reading activities on various aspects of children's behavior. Reading is a pivotal factor in children's most effective learning and developmental processes, fostering imagination and cultivating enduring and sustainable learning skills [43]–[45]. The act of reading books can yield substantial benefits in the lives of children, including the formation of special bonds during family activities, the enhancement of language skills, and the facilitation of the learning process through correct reading aloud. Moreover, it enables children to adapt to new situations and contributes to increased concentration and discipline, fostering a sense of calmness and patience [46], [47]. Additionally, reading is vital in stimulating the child's brain, encouraging critical thinking, perception, learning, and formulating questions during and outside reading sessions [48], [49]. Overall, instilling lifelong reading habits in children not only nurtures imagination and creativity but also contributes significantly to their cognitive and emotional development.

Moreover, the behavioral changes observed in children as a result of engaging with books, shedding light on their developmental and emotional growth [50]. The data is categorized into various outcomes, including increased interest in books, improved curiosity, enhanced social interaction, and positive emotional expressions. The distribution of responses highlights both the benefits of reading and the variability in observed effects, reflecting the diverse experiences of children with books, as shown in Table 4.

The data indicates that 30.4% of children show significant improvement in development, concentration, and interest in books, while 15.7% demonstrate increased curiosity, imagination, and the ability to apply new vocabulary in conversations. A smaller percentage of children exhibit enhanced cheerfulness (4.2%) and the ability to share stories and apply lessons from reading to daily life (3.0%). However, a notable 42.5% of respondents chose not to provide feedback, suggesting a gap in engagement or reporting. These findings emphasize the positive role of books in fostering children's growth, while also highlighting the need for strategies to enhance participation and maximize benefits for all children.

Table 4. Comprehensive overview of the observed changes in children's behavior resulting from reading sessions conducted for them

Behavior	Number (persons)	Percent (%)
Children develop better, have more interest in books (pictures, cartoon characters in books), have more intention and concentrate.	195	30.4
Observant child curious, more inquisitive, imaginative, and know how to use the vocabulary in the book to converse and imitate the behavior of the characters in the book.	101	15.7
Children are more fun, cheerful, and happy to listen and read.	27	4.2
Children share the stories they read and listen to others and put what they learn from listening into practice in their daily lives.	19	3.0
Others	27	4.2
Do not wish to provide information/do not answer.	273	42.5
Total	642	100.0

4. CONCLUSION

This study provides a comprehensive evaluation of a structured book distribution program and its impact on early childhood literacy and family reading behaviors in Thailand, a largely unexplored context for such large-scale interventions. Unlike previous research, it integrates both quantitative and qualitative analyses, using statistical methods to measure behavioral changes while capturing real-life parental engagement and child development outcomes. A key innovation is its regional and cultural sensitivity, ensuring diverse representation and highlighting geographically specific literacy trends. Beyond traditional literacy measures, the study examines broader developmental effects, including children's curiosity, vocabulary use, and understanding of COVID-19 prevention. Additionally, it offers policy-relevant insights on the scalability and sustainability of literacy interventions, contributing to both academic research and educational policymaking.

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AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Hareesol Khun-Inkeeree	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
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C : **C**onceptualization

M : **M**ethodology

So : **S**oftware

Va : **V**alidation

Fo : **F**ormal analysis

I : **I**nvestigation

R : **R**esources

D : **D**ata Curation

O : Writing - **O**riginal Draft

E : Writing - Review & **E**diting

Vi : **V**isualization

Su : **S**upervision

P : **P**roject administration

Fu : **F**unding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare that there are no conflicts of interest related to this research. No financial, personal, or professional relationships influenced the study's design, data collection, analysis, or interpretation. The research was conducted with full academic integrity and transparency, ensuring unbiased findings.

INFORMED CONSENT

Informed consent was obtained from all participants before their inclusion in this study. They were provided with full details about the study's purpose, procedures, and their rights, including voluntary participation and withdrawal. This research was conducted in compliance with ethical guidelines and approved by Board (IRB) of Prince of Songkla University.

ETHICAL APPROVAL

Ethical clearance for conducting this research was obtained from the Institutional Review Board (IRB) of Prince of Songkla University. The study adhered to ethical guidelines for research involving human subjects, ensuring informed consent, confidentiality, and the right to withdraw from the study at any time. Participants were fully informed about the purpose of the study, the procedures involved, and any potential risks or benefits. The ethical approval reference number is PSU-EDU-2023-001.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author [HK-I], upon reasonable request. Due to ethical considerations and the privacy of research participants, the data are not publicly available.

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