Journal of Learning and Development Studies
ISSN: 2752-9541
DOI: 10.32996/jlds
Journal Homepage: www.al-kindipublisher.com/index.php/jlds

JLDS
AL-KINDI CENTER FOR RESEARCH AND DEVELOPMENT

| RESEARCH ARTICLE

Assessing the Relationship Between Parental Involvement and Foundational Literacy and Numeracy Skills in Early Childhood Education

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| ABSTRACT

This study examined the relationship between parental involvement and the foundational literacy and numeracy skills of preschool learners. Utilizing a descriptive- correlational research design, the study investigated how specific aspects of parental engagement including supervision of study routines, communication, and resource provision related to learners' development in alphabet knowledge, phonological awareness, book and print knowledge, number recognition, attribute identification, and thinking skills. A total of 102 preschool learners and their parents were selected through total enumeration. Data were gathered using an adapted parental involvement questionnaire based on Hashim et al. (2018) and the Literacy and Numeracy (LitNum) Assessment Tool, both aligned with the Department of Education's Kindergarten Curriculum Guide. Frequency counts, weighted means, and Pearson's Product-Moment Correlation Coefficient were used for data analysis. Results revealed that parental involvement and learner proficiency were consistently high; however, there was no statistically significant relationship between the level of parental involvement and children's literacy or numeracy skills. These findings suggested that classroom instruction, curriculum quality, and school-based interventions may have played a more prominent role in academic outcomes. In response, the study developed a comprehensive Action Plan focused on strengthening home-school collaboration and providing targeted literacy and numeracy support. The research underscored the importance of a holistic, collaborative approach to early childhood education for sustained learner success.

| KEYWORDS

Parental Involvement, Literacy Skills, Numeracy Skills, Preschool Learners, Early Childhood Education, Alphabet Knowledge, Phonological Awareness, Book and Print Knowledge

| ARTICLE INFORMATION

ACCEPTED: 01 December 2025 **PUBLISHED:** 20 December 2025 **DOI:** 10.32996/jlds.2025.5.7.5

Introduction

Early childhood is a critical period for cognitive, emotional, and social development, and the foundation laid during this stage significantly influences a child's future academic success. Literacy and numeracy are essential skills developed during the preschool years, forming the cornerstone of lifelong learning. Research emphasizes that early exposure to reading, counting, and problem-solving enhances children's school readiness and performance (UNESCO, 2016). Parental involvement, particularly during early childhood, plays a pivotal role in supporting and enhancing these foundational skills. When parents actively engage in school activities and at-home learning, children show improved academic performance, motivation, and behavior (Epstein, 2011). Preschool programs, especially in developing countries like the Philippines, are beginning to recognize the necessity of integrating

parents as partners in education. As such, examining how parents contribute to their children's literacy and numeracy development is crucial in formulating effective strategies to improve early childhood education outcomes (Andres, 2019).

Numerous studies have established the direct correlation between parental involvement and literacy development in young learners. According to Sénéchal and Young (2008), children whose parents read to them regularly and engage in literacy-rich activities at home tend to develop stronger vocabulary, phonemic awareness, and reading comprehension skills. Early literacy development encompasses alphabet knowledge, phonological awareness, and understanding of book and print concepts, all of which are nurtured through consistent parent-child interaction and school collaboration. Parental support in practicing letter sounds, storytelling, and interactive reading fosters a positive learning environment that strengthens a child's literacy foundation (Wasik & Hendrickson, 2004). In the Philippine context, literacy campaigns have increasingly emphasized the role of families in promoting reading among young learners. However, disparities remain in how families support literacy development due to factors such as socioeconomic status, education level, and access to reading materials (SEAMEO INNOTECH, 2020).

In addition to literacy, numeracy is a vital component of early childhood education, encompassing number recognition, identifying patterns and attributes, and basic problem-solving skills. Research indicates that parental support in numeracy-related activities such as counting objects, recognizing shapes, and playing number games positively influences children's mathematical understanding and confidence (LeFevre et al., 2009). Parents who model positive attitudes toward math and engage in everyday math talk at home help children develop stronger number sense and reasoning skills (Mutonyi, 2016). In preschool settings, collaboration between teachers and families enhances numeracy outcomes by reinforcing classroom learning at home. However, not all parents are equally equipped or confident in teaching numeracy concepts, often due to lack of training or resources. In developing contexts, such as in Cebu City, access to developmentally appropriate learning materials and parent education programs remains limited (Tan, 2017). Therefore, understanding the existing levels of parental support for numeracy is key to crafting inclusive and effective interventions.

Schools play a significant role in encouraging and facilitating parental involvement through communication, inclusive practices, and community engagement programs. According to Epstein's Framework of Six Types of Involvement, schools must build partnerships with families across different dimensions parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community (Epstein, 2001). When schools foster a welcoming environment and provide opportunities for parents to participate in educational activities, parents are more likely to engage consistently. In the Philippines, the Department of Education's (DepEd) K to 12 program underscores the value of family and community involvement in achieving educational goals (DepEd, 2012). Programs such as Brigada Eskwela and parent-teacher associations (PTAs) aim to strengthen school-family ties. However, despite institutional efforts, there is limited evaluation of how these initiatives translate to actual involvement in preschoolers' learning, particularly in literacy and numeracy development, where parental guidance is most impactful.

While the existing literature confirms the importance of parental involvement in early literacy and numeracy skills, most studies are conducted in urban or developed contexts, often overlooking public schools in marginalized communities. In the Philippines, particularly in Cebu City's Sawang Calero Elementary School, there is a lack of localized research exploring how parents participate in preschool education and how this influences learners' performance in core skills like alphabet knowledge, phonological awareness, book/print familiarity, number concepts, attributes recognition, and thinking skills. Moreover, standardized assessments of literacy and numeracy in relation to parental engagement remain limited. This study seeks to bridge this gap by evaluating the levels of parental involvement and preschoolers' competencies in literacy and numeracy. The findings will serve as a foundation for designing a context-specific action plan to enhance parent-school collaboration, ultimately aiming to support and improve early learning outcomes in the target school community.

Literature Review

The foundation for understanding the impact of parental involvement in early learning is well-rooted in educational psychology and developmental theories. Vygotsky's sociocultural theory emphasizes that children's learning is socially mediated, with parents playing a crucial role in guiding and scaffolding early cognitive skills (Vygotsky, 1978). Similarly, Bronfenbrenner's ecological systems theory posits that children's development is influenced by the microsystem, particularly the home environment and its interaction with schools (Bronfenbrenner, 1979). Hoover-Dempsey and Sandler (1997) expanded on these models with a framework explaining why parents become involved in their children's education, highlighting psychological motivators and perceived invitations from schools. Their work emphasizes that effective parental involvement requires more than just attendance; it involves consistent support for learning both at home and in collaboration with educators. These theoretical perspectives underline the importance of structured, inclusive parent engagement strategies to enhance young learners' literacy and numeracy outcomes.

Research consistently shows that parental involvement enhances literacy development during early childhood. A meta-analysis by Fan and Chen (2001) found strong positive effects of parent involvement on academic performance, particularly in language-related areas. In studies conducted across diverse contexts, children whose parents read aloud with them and engaged in early literacy activities displayed significantly better phonological awareness, vocabulary acquisition, and letter recognition (Hindin & Paratore, 2007; van Steensel et al., 2011). Parental support in home literacy environments such as storytelling, alphabet games, and shared reading has also been linked to improved book and print knowledge (Martini & Sénéchal, 2012). In the Southeast Asian context, Tuazon and Concepcion (2020) noted that Filipino preschoolers whose parents frequently engaged in language-rich activities scored higher in reading readiness tests. This is particularly important in public schools, where learning resources are limited and parents become critical partners in extending literacy opportunities outside the classroom.

Methodology

This study employed a descriptive-correlational research design to examine the influence of parental involvement on the literacy and numeracy skills of preschool learners at Sawang Calero Elementary School in Cebu City for the school year 2024–2025. The descriptive aspect aimed to systematically assess and describe the current levels of parental involvement and the learners' competencies in foundational literacy and numeracy skills. Meanwhile, the correlational component was utilized to determine the statistical relationship between parental engagement and the academic performance of preschool learners. The study adopted the Input-Process-Output (IPO) framework to guide the research flow from conceptualization through data collection and analysis. Two primary instruments were used: a contextualized parental involvement questionnaire adapted from Hashim et al. (2018), and the Literacy and Numeracy (LitNum) Assessment Tool developed by the Department of Education (DepEd) Philippines. Data were gathered through three stages: Preliminary (securing permissions and preparing instruments), Data Gathering (administering questionnaires and assessments), and Post Data Gathering (data verification, encoding, and analysis). Ethical protocols were strictly followed, including informed consent, participant confidentiality, and child-sensitive practices. Descriptive statistics such as frequency, percentage, and weighted mean were used to describe the levels of parental involvement and student performance, while correlational analysis was employed to determine the strength and significance of relationships between the two variables. The study ensured that all tools and procedures adhered to national standards and ethical research practices.

Results

Table 1. Level of parent's involvement towards the school activities of the Learners

S/N	Indicators	WM	SD	Verbal Description
1	I make sure that my child acts in accordance with his/her study schedule and study at home.	4.57	0.54	Very High
2	I make sure that my child has a comfortable space for learning.	4.53	0.62	Very High
3	I always talk to my child about his/her daily activities.	4.47	0.69	Very High
4	I guide my child when performing household chores.	4.45	0.71	Very High
5	I examined my child's homework.	4.51	0.69	Very High
6	I make sure that my child has enough reference books, stationery, and other educational necessities.	4.40	0.71	Very High
7	I make sure that a learning environment with less noise from the television/radio when my child studies his/her lessons.	4.29	0.84	Very High
8	I send my children to extra classes held at school.	4.11	0.87	High
9	I send my son to paid tuition.	3.26	1.03	Moderate
10	I always talk with my child about his/her problems.	4.35	0.80	Very High
	Aggregate Weighted Mean	4.30	0.75	Very High

Table 1 presents the level of parental involvement in school-related activities of preschool learners, as measured by ten indicators. The results show an aggregate weighted mean of 4.30 with a standard deviation of 0.75, interpreted as "Very High". Most parents reported strong engagement in their child's education, particularly in supervising study time (WM = 4.57), ensuring a conducive learning space (WM = 4.53), and maintaining daily communication (WM = 4.47). Indicators such as guiding household chores (WM = 4.45) and checking homework (WM = 4.51) also received high ratings. The lowest levels of involvement were observed in providing paid tuition (WM = 3.26, Moderate) and sending children to extra classes (WM = 4.11, High). Overall, the data indicates that parents are highly supportive in nurturing their children's learning at home.

Table 2. Level of literacy skills of the learners in terms of Alphabet Knowledge

Level	f	%
Advanced	101	99.02
Intermediate	1	0.98
Beginner	0	0.00
Total	102	100.00

Table 2 shows the literacy skill levels of preschool learners in terms of Alphabet Knowledge. The data reveals that a majority of the learners (99.02%) are at the Advanced level, indicating strong recognition and understanding of letters, both uppercase and lowercase. Only 1 learner (0.98%) was assessed at the Intermediate level, while none were categorized as Beginners. This suggests that nearly all learners have developed excellent alphabet knowledge, likely due to effective early literacy instruction and supportive learning environments at home and in school. The high proficiency rate indicates that foundational literacy skills, particularly letter identification and sound recognition, are well established among the preschool learners.

Table 3. Level of literacy skills of the learners in terms of Phonological Awareness

Level	f	%
Advanced	68	66.67
Intermediate	33	32.35
Beginner	1	0.98
Total	102	100.00

Table 3 presents the literacy skill levels of preschool learners in terms of Phonological Awareness. The data shows that 68 learners (66.67%) are at the Advanced level, demonstrating strong skills in recognizing and manipulating sounds in spoken language, such as rhyming, syllable segmentation, and initial sound identification. 33 learners (32.35%) fall under the Intermediate level, indicating developing but still inconsistent phonological skills. Only 1 learner (0.98%) was categorized as a Beginner, showing minimal proficiency in this area. Overall, the results reflect a positive outcome, with the majority of learners having achieved a high level of phonological awareness—a critical foundation for reading and spelling. However, the presence of intermediate and beginner levels suggests the need for targeted phonological interventions to support those still developing in this essential literacy domain.

Table 4. Level of literacy skills of the learners in terms of Book and Print Knowledge

Level	f	%
Advanced	51	50.00
Intermediate	46	45.10
Beginner	5	4.90
Total	102	100.00

Table 4 illustrates the literacy skill levels of preschool learners in terms of Book and Print Knowledge. The data reveals that 51 learners (50.00%) are at the Advanced level, indicating that half of the class demonstrates strong understanding of book handling, print directionality, and recognition of basic print conventions. 46 learners (45.10%) are categorized as Intermediate, showing developing awareness but needing further reinforcement to master concepts such as identifying parts of a book, understanding that print carries meaning, and distinguishing between letters and words. Meanwhile, 5 learners (4.90%) are still at the Beginner

level, suggesting limited exposure to books and printed materials. While the overall results are encouraging, with a combined 95.10% achieving at least an intermediate level, the data indicates a need for continued support in building print awareness among emerging readers, especially for those still in the early stages of literacy development.

Table 5. Level of numeracy skills of the learners in terms of Numbers

Level	f	%
Advanced	102	100.00
Intermediate	0	0.00
Beginner	0	0.00
Total	102	100.00

Table 5 shows the level of numeracy skills of preschool learners in terms of Numbers. Remarkably, all 102 learners (100%) are classified at the Advanced level, indicating full mastery of basic number concepts such as number recognition, counting, sequencing, and possibly simple operations appropriate for their developmental stage. No learners were identified at the Intermediate or Beginner levels, which suggests that foundational number skills are exceptionally strong across the entire group. This outstanding result reflects effective early numeracy instruction and possibly strong reinforcement at home. It also implies that learners are well-prepared to engage in more complex mathematical thinking as they progress through their early education.

Table 6. Level of numeracy skills of the Learners in terms of Identifying Attributes

Level	f	%
Advanced	102	100.00
Intermediate	0	0.00
Beginner	0	0.00
Total	102	100.00

Table 6 presents the numeracy skills of preschool learners in terms of Identifying Attributes, such as recognizing shapes, colors, sizes, and patterns. The data reveals that all 102 learners (100%) achieved the Advanced level, with no learners falling under the Intermediate or Beginner categories. This indicates that every learner in the group has fully developed their ability to observe, compare, and describe objects based on their attributes an essential skill in early math development. The perfect score suggests that both classroom instruction and home support are effectively reinforcing learners' abilities to classify and differentiate objects, which are foundational for problem-solving and logical reasoning. This strong performance also reflects well-aligned teaching strategies that successfully prepare learners for higher-order mathematical tasks.

Table 7. Level of numeracy skills of the Learners in terms of Thinking Skills

Level	f	%
Advanced	102	100.00
Intermediate	0	0.00
Beginner	0	0.00
Total	102	100.00

Table 7 displays the numeracy skill levels of preschool learners in terms of Thinking Skills, which involve logical reasoning, problem-solving, and the ability to make comparisons or predictions. The results show that all 102 learners (100%) are at the Advanced level, indicating that every learner has demonstrated a high level of cognitive processing in mathematical contexts appropriate for their age. No learners were classified as Intermediate or Beginner, reflecting a uniformly high performance. This suggests that the

learners have well-developed critical thinking and reasoning abilities, likely fostered by engaging classroom activities and supportive learning environments. The consistent advanced-level performance across all learners highlights the effectiveness of the school's early childhood mathematics program and the strong role that parental involvement and early intervention may have played in nurturing these essential cognitive skills.

Table 8. Test of relationship between the Parental Involvement and Literacy Skills of the Learners

Parental Involvement VS:	r-value	Strength of Correlation	p - value	Decision	Remarks
Alphabet Knowledge	-0.116	Negligible Negative	0.246	Do not reject Ho	Not Significant
Phonological Awareness	-0.094	Negligible Negative	0.346	Do not reject Ho	Not Significant
Book and Print Knowledge	-0.036	Negligible Negative	0.721	Do not reject Ho	Not Significant

*significant at p<0.05 (two-tailed)

Table 8 presents the statistical test of the relationship between Parental Involvement and the Literacy Skills of preschool learners across three components: Alphabet Knowledge, Phonological Awareness, and Book and Print Knowledge. The results show negligible negative correlations for all three literacy domains, with r-values of -0.116, -0.094, and -0.036 respectively. Corresponding p-values are 0.246, 0.346, and 0.721, all of which are greater than the significance level of 0.05. Therefore, the null hypothesis is not rejected, indicating that there is no statistically significant relationship between parental involvement and the learners' literacy skills in these areas. While the overall level of parental involvement was high, this did not appear to translate into measurable differences in literacy performance. This suggests that other factors such as teaching strategies, individual learner differences, or prior exposure may have had a more direct impact on literacy outcomes in this group of learners.

Table 9. Test of relationship between the Parental Involvement and Numeracy Skills of the Learners

Parental Involvement VS:	r-value	Strength of Correlation	p - value	Decision	Remarks
Numbers	0.152	Negligible Positive	0.128	Do not reject Ho	Not Significant
Identifying Attributes	-0.001	Negligible Negative	0.991	Do not reject Ho	Not Significant
Thinking Skills	0.036	Negligible Positive	0.719	Do not reject Ho	Not Significant

*significant at p<0.05 (two-tailed)

Table 9 shows the test of relationship between Parental Involvement and the Numeracy Skills of preschool learners in three key areas: Numbers, Identifying Attributes, and Thinking Skills. The results indicate negligible correlations in all cases. For Numbers, the r-value is 0.152 (negligible positive) with a p-value of 0.128, while Identifying Attributes shows an r-value of -0.001 (negligible negative) and a p-value of 0.991. For Thinking Skills, the correlation is also negligible positive (r = 0.036), with a p-value of 0.719. All p-values are well above the significance level of 0.05, leading to the decision to not reject the null hypothesis in each case. This means there is no statistically significant relationship between the level of parental involvement and the numeracy skills of the learners. Despite very high scores in both areas, the findings suggest that factors other than parental involvement such as school instruction quality or learner readiness may have played a more substantial role in shaping numeracy outcomes.

Discussion

The results of the study revealed that while the level of parental involvement among the respondents was very high, this did not translate into a statistically significant relationship with the literacy and numeracy performance of the preschool learners. In literacy, the learners generally demonstrated strong skills across alphabet knowledge, phonological awareness, and book and print

knowledge, with a large percentage reaching advanced levels. However, the correlation values between parental involvement and literacy components were all negligible negative and statistically non-significant. This suggests that although parents were actively engaged especially in home-based learning activities their involvement did not significantly influence the measurable literacy outcomes. These findings align with studies suggesting that the quality and type of involvement, rather than the frequency alone, may be more critical in influencing academic performance, especially when school-based instruction is highly structured and effective.

Similarly, in numeracy, learners exhibited exceptional proficiency, with all achieving advanced levels in numbers, identifying attributes, and thinking skills. Yet, the correlations between parental involvement and numeracy domains were also negligible and not statistically significant. This could be attributed to strong classroom instruction, standardized teaching materials, or school-led interventions like the use of the LitNum Assessment Tool. It is also possible that the consistently high performance among learners reduced the variability needed to detect a meaningful correlation. Overall, while parental involvement remains essential for holistic child development, the data suggests that in this context, it did not serve as a strong predictor of academic performance in literacy and numeracy. This calls for deeper investigation into the quality of engagement and other influencing variables such as teacher effectiveness, learning environment, and child-specific factors.

Conclusion

Based on the findings of the study, it was concluded that preschool learners at Sawang Calero Elementary School demonstrated exceptionally high levels of literacy and numeracy skills, with nearly all learners achieving advanced proficiency in both areas. Parental involvement was consistently reported at a very high level, as parents provided comprehensive support for their children's educational activities at home. However, statistical analyses indicated that there was no significant relationship between parental involvement and learners' literacy or numeracy skills. The results suggested that while active family engagement was present and valuable, it was not a decisive factor in the academic achievement of the learners within this context. Instead, other influences such as effective classroom instruction, high-quality curriculum, and the learning environment provided by the school may have played a more substantial role in shaping children's academic success. These conclusions highlighted the complexity of early childhood education, emphasizing the need to consider multiple interacting factors that contribute to children's holistic development.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

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