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The Contribution of Parental Engagement to Early Literacy and Numeracy Outcomes among Preschoolers

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ABSTRACT: *This study examined the influence of parental involvement on the literacy and numeracy skills of preschool learners at Pasil Elementary School in Cebu City for the school year 2024–2025. Using a descriptive-correlational research design, data were collected from 100 parents and 2 teachers through an adapted parental involvement questionnaire and the Department of Education's Literacy and Numeracy (LitNum) Assessment Tool. Results showed that parental involvement was at a very high level, with parents actively supporting home-based learning and creating conducive study environments. Learners demonstrated advanced performance in Alphabet Knowledge (97.06%) and Phonological Awareness (81.37%), while most were at the intermediate level in Book and Print Knowledge (61.76%), highlighting the need for more print-awareness activities. In numeracy, all learners (100%) achieved advanced levels in Numbers, Identifying Attributes, and Thinking Skills, indicating strong early mathematical development. Correlation analysis revealed no significant relationship between parental involvement and literacy skills, while a negligible but significant negative correlation was found with number skills, suggesting that parents may provide more support when children struggle in numeracy. The findings emphasize the critical role of school-home partnerships in fostering early learning and recommend strengthening shared reading practices, enhancing print knowledge activities, and maintaining balanced parental support to further improve preschoolers' literacy and numeracy outcomes.*

Key words*: Early childhood education, literacy skills, numeracy skills, parental involvement, preschool learners.*

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1. Introduction

Parental involvement is a crucial determinant of early childhood education, significantly shaping preschoolers' literacy and numeracy skills (Sylva et al., 2020; Sheridan et al., 2021). As children's first educators, parents influence not only their initial learning experiences but also their long-term attitudes toward education (Henderson et al., 2020; Mistry et al., 2021). Their role extends beyond participation in school-related activities, encompassing emotional support, cognitive stimulation, and direct teaching efforts (Goodall & Montgomery, 2021; Skwarchuk et al., 2021). Research consistently demonstrates a strong correlation between active parental involvement and academic success, with studies highlighting that children whose parents engage in literacy and numeracy activities at home exhibit greater school readiness and a stronger foundation for future learning (Barnett et al., 2020; Niklas et al., 2022).

Engagement in early literacy and numeracy activities at home plays a vital role in fostering children's cognitive development (Elliott & Bachman, 2021; Lysenko et al., 2022). Activities such as reading bedtime stories, engaging in conversations, teaching letter recognition, counting objects, and incorporating simple mathematical concepts in daily routines contribute significantly to children's early academic skills (LeFevre et al., 2020; Susperreguy et al., 2022). These interactions not only help children develop essential pre-reading and numerical skills but also instill a natural curiosity and enthusiasm for learning (Van Voorhis et al., 2021; Blevins-Knabe & Musun-Miller, 2023). Children who experience high levels of parental involvement often demonstrate stronger vocabulary, better problem-solving abilities, and a more positive disposition toward learning, setting the stage for long-term academic engagement (Hart et al., 2021; Yamauchi et al., 2023).

A supportive family environment fostered early literacy and numeracy development through shared reading, number recognition, and everyday discussions, reinforcing essential concepts in an engaging manner (Salminen et al., 2021). Beyond academic benefits, parental engagement strengthened the parent-child bond, fostering a positive learning environment that encouraged curiosity and motivation. Additionally, parents played a key role in advocating for their children's educational needs, influencing the adaptation of preschool programs to better suit diverse learning profiles. This dynamic partnership between parents and educators enhanced the overall quality of early childhood education by aligning home and school learning experiences. However, parental involvement varied due to socioeconomic and cultural factors. Challenges such as limited access to resources, parental education levels, and differing perceptions of educational roles impacted engagement levels.

Addressing these disparities requires targeted strategies, such as workshops and training programs designed to equip parents with effective teaching techniques for literacy and numeracy. Schools could facilitate stronger home-school collaboration through regular communication, inclusive events, and accessible learning resources. Furthermore, structured parental participation programs, community initiatives, and digital platforms enhanced engagement, ensuring that all families regardless of socioeconomic background could support their children's education (Naite, 2021). Research suggested that technology-based solutions, such as virtual workshops and digital communication tools, can bridge gaps in parental involvement, making educational resources more accessible and fostering continuous collaboration between schools and families (Ogg & Anthony, 2020). In conclusion, parental involvement was a multifaceted and essential component of early childhood education, significantly influencing preschoolers' literacy and numeracy skills. Strengthening home-school collaboration through structured programs, personalized communication, and accessible learning resources could lead to improved educational outcomes. Recognizing and empowering parents as active partners in their children's learning, educational institutions fostered an inclusive and supportive learning environment that ensured all children received the foundational skills necessary for lifelong academic success.

2. Literature Review

2.1. Parental Involvement

Parental involvement has consistently been identified as a critical factor in shaping early childhood education outcomes, particularly in the development of literacy and numeracy skills. Research indicates that parents act as children's first educators, providing the foundation for both cognitive and socio-emotional development during the preschool years (Sylva et al., 2020; Henderson et al., 2020). Studies have demonstrated that active engagement in home-based learning, such as shared reading, storytelling, and conversational interactions, significantly enhances vocabulary acquisition and pre-reading abilities (Elliott & Bachman, 2021; Hart et al., 2021). Similarly, exposure to numeracy activities including counting, sorting, and integrating mathematical concepts into daily routines has been linked to stronger early math skills and problem-solving capabilities (LeFevre et al., 2020; Susperreguy et al., 2022). These findings emphasize that parental support extends beyond formal schooling, with home environments serving as vital contexts for early learning (Goodall & Montgomery, 2021; Niklas et al., 2022).

In addition to fostering academic readiness, parental involvement has been shown to shape children's long-term attitudes toward education and learning. Children whose parents actively participate in literacy and numeracy activities at home often display higher motivation, stronger self-regulation, and a more positive disposition toward school (Van Voorhis et al., 2021; Blevins-Knabe & Musun-Miller, 2023). Cognitive stimulation combined with emotional support within the home setting creates a nurturing learning environment that encourages curiosity and resilience (Mistry et al., 2021; Yamauchi et al., 2023).

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Furthermore, longitudinal studies highlight that the benefits of early parental engagement extend into later academic achievement, reinforcing the importance of integrating family-centered approaches in early education policies (Barnett et al., 2020; Skwarchuk et al., 2021). Collectively, the literature underscores that parental involvement is not only a predictor of immediate school readiness but also a determinant of sustained academic success throughout a child's educational trajectory.

3. Methodology

This study used a descriptive-correlational research design to explore how parental involvement affects the literacy and numeracy skills of preschool learners at Pasil Elementary School in Cebu City for the school year 2024–2025. A descriptive design was chosen to clearly describe the current level of parental involvement and the learners' literacy and numeracy skills without changing any conditions. It allowed the researcher to see the existing situation as it is. At the same time, a correlational design was used to find out if there is a relationship between how much parents are involved and how well their children perform in literacy and numeracy. This approach was useful because it focused on observing and analyzing data instead of manipulating any variables. The study followed the Input-Process-Output (IPO) framework. The input included parental involvement data and learners' literacy and numeracy scores. The process covered the collection and analysis of data, and the output was the findings, which served as the basis for creating an action plan to improve parental involvement and learners' performance. A total of 102 respondents participated in the study: 2 teachers and 100 parents from Pasil Elementary School. The respondents were chosen using purposive sampling, meaning the participants were selected because they were directly related to the research problem. Two main tools were used to gather data. The first was a parental involvement questionnaire, adapted from Hashim et al. (2018), which measured different aspects of parents' participation in their child's learning, including school activities, home-based support, and communication with teachers. The second tool was the Literacy and Numeracy (LitNum) Assessment Tool developed by the Department of Education (DepEd) Philippines to evaluate learners' reading and numeracy skills. Combining these tools, the study gathered both information on parents' engagement and actual performance data of the children. The results were analyzed to determine patterns and relationships, providing useful insights for designing strategies to strengthen parental involvement and improve preschoolers' literacy and numeracy outcomes.

4. Results

Table 1 shows the level of parents' involvement in their children's school activities. The results indicate an aggregate weighted mean of 4.57 (SD = 0.63), which falls under the "Very High" category. This suggests that most parents at Pasil Elementary School are actively engaged in supporting their children's learning. The highest-rated indicator was providing a comfortable space for learning (WM = 4.77, SD = 0.44), highlighting that parents prioritize creating a conducive environment for study. Similarly, talking to children about daily activities (WM = 4.76) and guiding them in household chores (WM = 4.75) reflect strong parental involvement not only academically but also in fostering holistic development. Ensuring availability of reference materials (WM = 4.73) and minimizing distractions during study time (WM = 4.72) also show that parents are attentive to their children's learning needs. However, one item stood out: sending children to paid tuition (WM = 3.37, SD = 1.46), which only reached a "Moderate" level. This may imply that financial constraints or confidence in the school's teaching methods reduce the need for external paid tutorials. The high standard deviation also suggests varying practices among parents in this area.

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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.	4.68	0.57	Very High
2	I make sure that my child has a comfortable space for learning.	4.77	0.44	Very High
3	I always talk to my child about his/her daily activities.	4.76	0.45	Very High
4	I guide my child when performing household chores.	4.75	0.50	Very High
5	I examined my child's homework.	4.74	0.49	Very High
6	I make sure that my child has enough reference books, stationery, and other educational necessities.	4.73	0.49	Very High
7	I make sure that a learning environment with less noise from the television/radio when my child studies his/her lessons.	4.72	0.51	Very High
8	I send my children to extra classes held at school.	4.58	0.65	Very High
9	I send my son to paid tuition.	3.37	1.46	Moderate
10	I always talk with my child about his/her problems.	4.65	0.71	Very High
	Aggregate Weighted Mean	4.57		
	Aggregate Standard Deviation			Very High
			0.63	

The findings emphasize that parents in this community play an active role in home-based learning support, which is crucial for developing literacy and numeracy skills in preschoolers. The "Very High" involvement in creating supportive learning environments implies a strong foundation for children's school readiness and overall academic success. However, the moderate score for paid tutorials suggests a need for the school to ensure that all learners receive adequate academic support within the classroom setting. Strengthening school-home partnerships and providing accessible supplementary learning programs can further maximize children's early learning outcomes.

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

Level	f	%
Advanced	99	97.06
Intermediate	3	2.94
Beginner	0	0.00
Total	102	100.00

Table 2 presents the learners' level of literacy skills in terms of Alphabet Knowledge. The data reveal that the majority of learners, 99 out of 102 (97.06%), are at the Advanced level, while only 3 learners (2.94%) fall under the Intermediate level. Notably, no learner was categorized as a Beginner (0.00%), indicating that all preschoolers assessed have at least a basic to strong grasp of alphabet knowledge. The overwhelmingly high percentage of learners at the advanced level suggests that both the school and parents are effectively supporting the development of early literacy skills, particularly in letter recognition and sound association.

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

Level	f	%
Advanced	83	81.37
Intermediate	19	18.63
Beginner	0	0.00
Total	102	100.00

Table 3 shows the learners' level of literacy skills in terms of Phonological Awareness. The results indicate that a large majority, 83 out of 102 learners (81.37%), are at the Advanced level, while 19 learners (18.63%) are at the Intermediate level. Similar to the findings in Alphabet Knowledge, there were no learners

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classified as Beginners (0.00%), showing that all students have at least some proficiencies in recognizing and manipulating sounds in spoken language. he high percentage of learners at the advanced level demonstrates that most preschoolers have developed strong phonological skills, such as identifying rhymes, syllables, and beginning sounds, which are essential for reading readiness. However, the presence of nearly one-fifth of learners at the intermediate level suggests the need for additional support in enhancing sound discrimination and blending skills. This can be addressed through targeted classroom activities, such as phonics games, oral language exercises, and consistent home-based literacy practices.

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

Level	**f**	**%**
Advanced	34	33.33
Intermediate	63	61.76
Beginner	5	4.90
Total	102	100.00

Table 4 illustrates the learners' level of literacy skills in terms of Book and Print Knowledge. The results show that only 34 learners (33.33%) are at the Advanced level, while the majority, 63 learners (61.76%), fall under the Intermediate level. A small number, 5 learners (4.90%), are categorized as Beginners. Compared to the results for Alphabet Knowledge and Phonological Awareness, the proportion of advanced learners is notably lower in this area, indicating that understanding how books and print work is a developing skill for many preschoolers. The dominance of the intermediate level suggests that while most learners have basic familiarity with book handling and print concepts such as reading direction, recognizing words, and understanding that print carries meaning they have not yet fully mastered these skills.

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 presents the learners' level of numeracy skills in terms of Numbers. The results reveal that all 102 learners (100%) achieved the Advanced level, with no learners falling under the Intermediate or Beginner categories. This indicates that every preschooler assessed demonstrates a strong understanding of basic number concepts, including counting, number recognition, and basic numerical relationships. The perfect score in the advanced category suggests that both classroom instruction and home numeracy practices are highly effective in developing foundational number skills among preschoolers.

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 shows the learners' numeracy skills in terms of Identifying Attributes, and the results reveal that all 102 learners (100%) are at the Advanced level, with none categorized as Intermediate or Beginner. This indicates that every preschooler demonstrated strong competency in recognizing and classifying objects based on their attributes, such as color, shape, size, and other distinguishing features. The 100% advanced rating highlights the effectiveness of both classroom instruction and home-based activities in developing early mathematical thinking skills, particularly in sorting, comparing, and identifying patterns.

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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 presents the learners' numeracy skills in terms of Thinking Skills, and the data show that all 102 learners (100%) are at the Advanced level, with no learners in the Intermediate or Beginner categories. This indicates that every preschooler demonstrated strong critical and logical thinking abilities in numeracy-related tasks, such as problem-solving, making comparisons, and drawing simple conclusions from patterns or number relationships. The perfect score in the advanced category suggests that both teaching strategies and home-based support are highly effective in nurturing higher-order thinking skills at the preschool level.

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	-0.006	Negligible Negative	0.949	Do not reject Ho	Not Significant
Phonological Awareness	-0.014	Negligible Negative	0.885	Do not reject Ho	Not Significant
Book and Print Knowledge	0.006	Negligible Positive	0.951	Do not reject Ho	Not Significant

Note: *significant at p<0.05 (two-tailed).

Table 8 shows the test of relationship between Parental Involvement and the Literacy Skills of the learners. The correlation results reveal that for Alphabet Knowledge, the computed r-value is -0.006, indicating a negligible negative relationship, with a p-value of 0.949, which is not significant. For Phonological Awareness, the r-value is -0.014, also showing a negligible negative correlation with a p-value of 0.885, which is likewise not significant. In terms of Book and Print Knowledge, the r-value is 0.006, suggesting a negligible positive correlation, with a p-value of 0.951, which is not significant. In all cases, the p-values are greater than the 0.05 level of significance, leading to the decision to not reject the null hypothesis (Ho). These findings indicate that parental involvement, while rated as very high in Table 1, does not show a statistically significant relationship with the literacy skills of the learners in this study.

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	-0.243*	Negligible Negative	0.014	Reject Ho	Significant
Identifying Attributes	-0.106	Negligible Negative	0.289	Do not reject Ho	Not Significant
Thinking Skills	0.068	Negligible Positive	0.497	Do not reject Ho	Not Significant

Note: *significant at p<0.05 (two-tailed).

Table 9 shows the test of relationship between Parental Involvement and the Numeracy Skills of the learners. The results indicate that for Numbers, the computed r-value is -0.243, which reflects a negligible negative correlation but is statistically significant with a p-value of 0.014, less than the 0.05 level of significance. This leads to the rejection of the null hypothesis (Ho), suggesting a meaningful relationship

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between parental involvement and learners' number skills. However, the negative direction of the correlation implies that higher parental involvement does not necessarily correspond to higher performance in this area. For Identifying Attributes, the r-value is -0.106, with a p-value of 0.289, indicating a negligible negative relationship that is not statistically significant. Similarly, for Thinking Skills, the r-value is 0.068 with a p-value of 0.497, showing a negligible positive correlation that is also not significant. In both cases, the null hypothesis is not rejected. The significant yet negative relationship between parental involvement and number skills may suggest that parents tend to provide more support to children who are struggling in numeracy, which can create an inverse relationship. This aligns with findings in some early childhood studies where intensive parental support often reflects an attempt to compensate for lower initial performance levels.

5. Discussion

The results of the study reveal that parental involvement in Pasil Elementary School is at a very high level, with parents consistently providing home-based support, ensuring a conducive learning environment, and engaging in meaningful interactions with their children. These findings underscore the critical role parents play in fostering early childhood learning, particularly in building foundational literacy and numeracy skills. The high scores in Alphabet Knowledge and Phonological Awareness indicate that both school instruction and home practices are effective in supporting early literacy development. However, the lower performance in Book and Print Knowledge suggests that while children are proficient in recognizing letters and sounds, they still need more exposure to print concepts such as reading direction, word recognition, and understanding the function of printed texts. This highlights a gap where both teachers and parents can collaborate to increase shared reading activities and direct instruction on print awareness to strengthen overall literacy development.

In terms of numeracy, the findings are particularly striking, with all learners achieving advanced levels in Numbers, Identifying Attributes, and Thinking Skills. This reflects strong classroom instruction and effective parental engagement in supporting early math development, providing a solid foundation for future mathematical learning. However, the significant yet negative correlation between parental involvement and number skills suggests a compensatory pattern, where parents may increase support for children who initially struggle in numeracy. This finding emphasizes the need for balanced strategies that encourage independent learning while maintaining appropriate parental guidance. Additionally, the absence of a significant relationship between parental involvement and literacy skills suggests that when parental support is uniformly high across the sample, variations in literacy outcomes may be more strongly influenced by classroom instruction and individual learner differences. Overall, the findings point to the importance of sustaining high parental involvement, enhancing targeted literacy interventions, and fostering school-home partnerships to ensure holistic development of preschool learners.

6. Conclusion

The study found that parents show very high involvement in supporting their children's learning at home, creating a strong foundation for both literacy and numeracy skills. Most learners demonstrated advanced levels in Alphabet Knowledge and Phonological Awareness, while many were still at the intermediate level in Book and Print Knowledge, indicating a need for more shared reading and print-focused activities. For numeracy, all learners achieved advanced levels in Numbers, Identifying Attributes, and Thinking Skills, reflecting effective teaching and strong home support. The study also found no significant link between parental involvement and literacy skills, likely due to uniformly high parental support, and a small negative relationship with number skills, suggesting parents may give more help to children who struggle. Overall, the findings highlight the importance of maintaining strong school-home collaboration and focusing on balanced support to further enhance preschoolers' learning outcomes.

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