
| RESEARCH ARTICLE

The Influence of Play Behavior on the Motor Skills of Preschoolers

Honey Mae Quinones¹ and Kaitlin Marie Opingo²

¹International Elementary School Teacher

²Cebu Technological University

Corresponding Author: Honey Mae Quinones, **E-mail:** honeymaequinones@gmail.com

| ABSTRACT

This study explored the relationship between play behavior and motor skill development among preschoolers. Using a descriptive-correlational research design, the study assessed 100 preschool learners across multiple play behavior types reticent, solitary-passive, solitary-active, social, and rough play and measured their gross and fine motor skills using a questionnaire adapted from the Philippine ECCD Checklist. Results revealed that social and solitary-active play behaviors were highly evident among the children, while rough play was observed to a moderate extent. Both gross and fine motor skills were generally developed at high levels, with activities involving climbing, jumping, drawing, and manipulating objects being frequently demonstrated. Statistical analysis using Pearson's *r* showed a moderate positive and significant correlation between play behaviors and both gross and fine motor skills. These findings underscore the importance of play in enhancing children's motor development and support the integration of structured and unstructured play into early childhood education programs. The study recommends that educators, policymakers, and parents prioritize varied play opportunities to foster children's physical and developmental readiness for academic and everyday activities.

| KEYWORDS

Play Behavior, Motor Skills Development, Gross Motor Skills, Fine Motor Skills

| ARTICLE INFORMATION

ACCEPTED: 15 November 2025

PUBLISHED: 24 November 2025

DOI: 10.32996/jlds.2025.5.6.2

Introduction

Early childhood is a foundational period for physical and cognitive development, with motor skills emerging as critical indicators of a child's readiness for academic and daily life tasks (Laurent et al., 2021). Motor development in preschoolers, encompassing both gross motor skills and fine motor skills lays the groundwork for more advanced physical, cognitive, and social competencies (Lee & Chen, 2023). Within this developmental window, play has been identified as a central vehicle through which children explore their environment, develop coordination, and enhance motor proficiency. Despite global emphasis on the value of physical activity in early learning, many school systems have shifted towards more academic-centric approaches, reducing opportunities for structured and unstructured play that support motor development (Williams & Green, 2023; Skinner-Nichol, 2025).

A growing body of evidence highlights the critical role of diverse forms of play including solitary, social, physical, and imaginative play in advancing motor competence (Ahmed et al., 2023). For instance, Santos and Pereira (2022) observed that engaging outdoor environments positively influence children's physical play, leading to enhanced strength, balance, and coordination. Similarly, O'Connor et al. (2023) emphasized that active parental involvement during play activities is associated with significant improvements in children's fine and gross motor skills. However, while numerous studies have investigated specific types of play or interventions, relatively fewer have explored the broader relationship between different play behaviors (e.g., reticent, rough, social, solitary) and motor skills within the cultural and educational context of the Philippines.

This gap is particularly relevant considering recent concerns from Filipino educators regarding motor delay among preschoolers due to reduced physical activity in increasingly academic-focused kindergarten settings (Arhin, 2023). Moreover, many studies on play and motor development are conducted in Western contexts, where play environments, parenting styles, and educational systems differ markedly from those in Southeast Asia. As Zhao and Chen (2025) argue, cultural sensitivity in developmental research is vital, as children's play behaviors and opportunities are deeply shaped by local norms and resource availability. In the Philippine setting, traditional games such as tumbang preso and sungka once formed the backbone of motor-rich childhood experiences, yet their influence is now under-researched in favor of digital and classroom-based learning.

Given these contextual and empirical gaps, this study aims to assess the influence of multiple play behaviors on the motor skill development of preschool children in a Filipino public school. Examining the correlation between observed play behaviors and motor performance levels, this research seeks to provide evidence-based insights into how structured and unstructured play activities contribute to children's physical development. Such insights are especially critical for educators and curriculum developers working to align with national policies like the Early Years Act (RA 10410), which mandates the inclusion of play-based learning in early childhood education.

Ultimately, the findings of this study are expected to inform early childhood education strategies by identifying which types of play are most beneficial for motor development, and by extension, school readiness. As emphasized by Martinez and Garcia (2024), embedding developmentally appropriate, play-based pedagogies into early childhood programs enhances not only motor skills but also fosters holistic growth. Addressing the decline of physical play in preschools through empirical research supports a rebalancing of early education towards practices that nurture both the body and the mind during this critical developmental stage.

Literature Review

Play is a critical component of early childhood development, particularly in enhancing both gross and fine motor skills (Amira & Kadir, 2025). Numerous studies affirm that active play encompassing structured, unstructured, social, and solitary activities contributes significantly to children's physical development (Ahmed et al., 2023). Smith et al. (2021) observed that unstructured outdoor play correlates with improvements in balance and coordination, demonstrating the organic development of motor skills through naturalistic activities. Similarly, Liu and Zhang (2020) found that pretend play, especially those involving small object manipulation, enhances fine motor coordination in preschoolers. The Philippine context, however, remains underexplored. Traditional games provide rich motor experiences but are often excluded in modern curricula. In your thesis, the observed high engagement in social and solitary-active play reflects how culturally relevant and context-specific behaviors can inform curriculum development.

Recent studies also highlight the environmental and social dynamics influencing play behaviors. For example, Santos and Pereira (2022) revealed that playground design and accessibility significantly impact motor activity levels among children, while O'Connor et al. (2023) emphasized the importance of parental involvement in play to boost motor skill acquisition. In line with Bronfenbrenner's Ecological Systems Theory, these findings support the idea that microsystems like family and preschool environments profoundly shape child development. Zhao and Chen (2025) further argue that play activates neural pathways essential for motor control, reinforcing its neurological basis. These findings align with the theoretical foundation in your thesis, which combines Bronfenbrenner's ecological model with Vygotsky's sociocultural theory and Piaget's cognitive development framework, offering a comprehensive lens to understand how play supports motor development in preschoolers.

Methodology

This study utilized a descriptive-correlational research design to determine the relationship between play behavior and motor skill development among preschoolers in Mabolo Elementary School for the school year 2024–2025. The descriptive aspect aimed to assess the levels of different play behaviors and motor skills, while the correlational component explored the statistical relationship between these variables without manipulating the natural environment of the participants. The respondents were 100 preschool learners distributed across three early childhood classes, as well as their three teacher-advisers. The selection followed a purposive sampling technique, targeting classes that could provide relevant developmental observations. Data collection was conducted using a structured survey questionnaire adapted from the Revised Philippine Early Childhood Care and Development (ECCD) Checklist (DepEd & DSWD, 2018). The questionnaire included two parts: demographic profiles (e.g., age, gender, parental education), and indicators assessing play behaviors (e.g., reticent, solitary, social, rough play) and motor skills (gross and fine). A 5-point Likert scale was used to measure the frequency of behaviors, where 1 indicated "Strongly Disagree" and 5 indicated "Strongly Agree." The researcher obtained permission from the Schools Division Superintendent and oriented teachers and parents

before distributing and retrieving the questionnaires. For statistical analysis, descriptive statistics (mean, frequency, standard deviation) and Pearson's *r* were applied using statistical software to determine the strength and significance of the relationship between variables.'

Results

Table 1. Level of play behavior of the preschoolers in terms of reticent behavior

S/N	Indicators	WM	SD	Verbal Description
1	takes on the role of on looker or spectator	4.03	1.08	High
2	wanders around aimlessly	4.05	1.04	High
3	watches or listens to other children without trying to join in	4.06	0.99	High
4	remains alone and unoccupied, perhaps staring off into space	4.07	0.87	High
	Aggregate Mean	4.05		High
	Aggregate Standard Deviation		0.99	

Table 1 presents the level of play behavior of preschoolers in terms of reticent behavior, showing consistently high mean scores across all indicators. The highest mean (4.07) was for children remaining alone and unoccupied, while the lowest (4.03) was for acting as a spectator. The aggregate mean of 4.05 and standard deviation of 0.99 indicate that reticent behaviors are commonly observed and fairly consistent among the preschoolers, suggesting social withdrawal or hesitancy to engage in group play.

Table 2. Level of play behavior of the preschoolers in terms of solitary-passive behavior

S/N	Indicators	WM	SD	Verbal Description
1	plays by himself/herself, examining a toy or object	3.79	1.10	High
2	plays alone, building things with blocks and/or other toys	3.83	1.18	High
3	plays by himself/herself, drawing, painting pictures, or doing puzzles	3.61	1.19	High
4	plays alone, exploring toys or objects, trying to figure out how they work	4.05	1.09	High
	Aggregate Mean	3.82		High
	Aggregate Standard Deviation		1.14	

Table 2 illustrates the preschoolers' level of solitary-passive behavior, with all indicators rated as High. The highest mean score (4.05) was for playing alone while exploring toys or objects, while the lowest (3.61) was for drawing or doing puzzles. The aggregate mean of 3.82 and standard deviation of 1.14 indicate frequent engagement in passive play activities done independently. These behaviors suggest that children are often engaged in quiet, focused, and exploratory play, supporting cognitive and fine motor development.

Table 3. Level of play behavior of the preschoolers in terms of solitary-active behavior

S/N	Indicators	WM	SD	Verbal Description
1	plays by himself/herself, engaging in simple motor activities (e.g., running, ringing bells/buzzers)	3.79	1.10	High
2	engages in pretend play by himself/herself	3.83	1.18	High
3	plays 'make-believe', but not with other children	3.61	1.19	High
4	plays alone in an active fashion, enjoying an activity solely for the physical sensation it creates	4.05	1.09	High

Aggregate Mean	3.82		
Aggregate Standard Deviation	1.14	High	

Table 3 shows the preschoolers' level of solitary-active behavior, with all indicators receiving High ratings. The highest mean (4.05) corresponds to children playing alone for the enjoyment of physical sensations, while the lowest (3.61) relates to make-believe play without peer interaction. The aggregate mean of 3.82 and standard deviation of 1.14 indicate a consistent tendency for children to actively engage in self-directed physical play. This behavior supports motor development and reflects independence and intrinsic motivation during play.

Table 4. Level of play behavior of the preschoolers in terms of social play

S/N	Indicators	WM	SD	Verbal Description
1	talks to other children during play	4.37	0.81	Very High
2	plays 'make-believe' with other children	4.20	0.93	High
3	engages in group play	4.32	0.79	Very High
4	plays in groups with (not just beside) other children	4.02	0.97	High
5	engages in active conversations with other children during play	4.17	0.94	High
6	engages in pretend play with other children	4.07	0.98	High
	Aggregate Mean	4.19		High
	Aggregate Standard Deviation		0.90	

Table 4 presents the preschoolers' level of social play, with all indicators showing High to Very High levels of engagement. The highest mean score (4.37) was observed in talking to other children during play, while the lowest (4.02) involved playing in groups. The aggregate mean of 4.19 and standard deviation of 0.90 suggest that social interaction is a strong component of the children's play behavior. These findings emphasize the importance of peer engagement in enhancing communication and cooperative play skills.

Table 5. Level of play behavior of the preschoolers in terms of rough play

S/N	Indicators	WM	SD	Verbal Description
1	plays 'rough-and-tumble' with other children	3.71	1.17	High
2	engages in playful/mock fighting with other children	3.06	1.44	Moderate
	Aggregate Mean	3.39		Moderate
	Aggregate Standard Deviation		1.30	

Table 5 shows the preschoolers' level of rough play, with varied results across indicators. The highest mean score (3.71) was recorded for rough-and-tumble play with peers, while the lowest (3.06) was for playful or mock fighting. The aggregate mean of 3.39 indicates a Moderate level of engagement in rough play, with a relatively high standard deviation of 1.30, suggesting variability in behavior. These results imply that while some children enjoy physical play, others may be less inclined, possibly due to supervision or individual temperament.

Table 6. Level of the motor skills of the preschoolers in terms of gross motor skills

S/N	Indicators	WM	SD	Verbal Description
1	Climbs on chair or other elevated piece of furniture like a bed without help.	4.17	1.17	High
2	Walks backwards	3.68	1.33	High
3	Runs without tripping or falling.	3.93	1.15	High
4	Walks upstairs holding onto a handrail, two feet on each step with one hand held.	3.95	1.14	High
5	Walks upstairs holding onto a handrail, two feet on each step.	3.82	1.17	High
6	Walks upstairs with alternate feet without holding onto a handrail	3.91	1.09	High
7	Walks upstairs with alternate feet without holding onto a handrail.	3.84	1.13	High
8	Walks downstairs with alternate feet without holding onto a handrail	3.80	1.08	High
9	Moves body part as Directed.	4.16	1.03	High
10	Jumps up	4.22	1.01	Very High
11	Throws ball overhead with direction	4.11	1.00	High
12	Hops one to three steps on preferred foot	4.00	1.03	High
13	Jumps and turns	4.11	1.05	High
14	Dances patterns/joins group movement activities	4.09	1.16	High
Aggregate Mean		3.99		
Aggregate Standard Deviation			1.11	High

Table 6 presents the preschoolers' level of gross motor skills, with all indicators rated as High, except for "jumps up," which achieved a Very High mean score of 4.22. The lowest mean (3.68) was noted for walking backwards. The aggregate mean of 3.99 and standard deviation of 1.11 indicate consistently strong gross motor performance. These findings reflect that most children demonstrated proficiency in large-muscle activities such as climbing, jumping, and running, which are essential for physical development and coordination.

Table 7. Level of the motor skills of the preschoolers in terms of fine motor skills

S/N	Indicators	WM	SD	Verbal Description
1	Uses all five fingers to get food/toys placed on a flat surface	4.29	1.01	Very High
2	Picks up objects with thumb and index finger	4.10	1.04	High
3	Displays a definite hand preference	4.10	0.94	High
4	Puts small objects in/out of containers	4.22	0.93	Very High
5	Holds crayon with all the fingers of his hand making a fist (i.e., pal mar grasp)	4.23	0.92	Very High
6	Unscrews the lid of a container or unwraps food	4.04	1.00	High
7	Scribbles spontaneously	3.92	1.09	High
8	Scribbles vertical and horizontal lines	3.96	0.92	High
9	Draws circle purposefully	3.98	0.95	High
10	Draws a human figure (head, eyes, trunk, arms, hands/fingers)	3.88	1.00	High
11	Draws a house using geometric forms	3.76	1.11	High
Aggregate Mean		4.04		
Aggregate Standard Deviation			0.99	High

Table 7 illustrates the preschoolers' level of fine motor skills, with the majority of indicators rated as High, and three rated as Very High notably, using all five fingers (4.29), placing objects in containers (4.22), and holding a crayon with a full-hand grasp (4.23). The aggregate mean of 4.04 and standard deviation of 0.99 suggest a consistently strong performance in fine motor tasks. These results indicate that preschoolers are developing essential hand coordination and control necessary for writing, self-care, and classroom readiness.

Table 8. Test of significant relationship between the play behavior and motor skills of the preschoolers

Variables	r-value	Strength of Correlation	p - value	Decision	Result
Play Behavior and Gross Motor Skills	0.589*	Moderate Positive	0.000	Reject Ho	Significant
Play Behavior and Fine Motor Skills	0.585*	Moderate Positive	0.000	Reject Ho	Significant

*Significant at $p < 0.05$ (two-tailed)

Table 8 shows the significant relationship between play behavior and motor skills of the preschoolers. A moderate positive correlation was found between play behavior and gross motor skills ($r = 0.589$) and fine motor skills ($r = 0.585$), both with p-values of 0.000, indicating statistical significance at $p < 0.05$. These results suggest that higher levels of play behavior are associated with stronger motor skill development. Therefore, the null hypothesis was rejected, confirming that play behavior significantly influences both fine and gross motor skills.

Discussion

The results of the study reveal that preschoolers generally demonstrate high levels of various play behaviors, including reticent, solitary-passive, solitary-active, and social play, with moderate engagement in rough play. Social play received the highest overall rating, highlighting its role in promoting interaction, communication, and cooperative engagement among children. These findings are consistent with Doehring and Huber (2023), who emphasized that active social play supports school readiness by enhancing self-regulation and peer collaboration. While solitary play behaviors were also high, their presence suggests a balanced need for independent exploration and creativity, aligning with Vygotsky's sociocultural theory, which posits that both social interaction and individual cognitive processes contribute to learning.

Furthermore, the study found that preschoolers exhibited high levels of both gross and fine motor skills. Fine motor indicators such as grasping objects and manipulating small tools were rated particularly high, underscoring the importance of daily activities that promote hand-eye coordination. The significant, moderate positive correlations between play behavior and both motor skill types affirm that play is a critical driver of physical development. This supports the findings of Chen and Patel (2022), who argue that diverse and engaging play activities strengthen children's physical coordination and readiness for formal schooling. These results highlight the importance of integrating structured and unstructured play into early childhood curricula and suggest that educators and parents must intentionally support play environments that promote motor growth and overall child development.

Conclusion

Based on the findings of the study regarding the relationship between play activities and gross and fine motor development in preschoolers, several conclusions can be drawn. Firstly, the type of play activities that children participate in during the preschool years is thought to play an important role in young children's development of motor skills in general. The findings suggest when play is more imaginary and being seated, it does not potentially offer the kind of stimulation that supports these skills very well. This emphasizes the need to introduce rougher and tumble play in early childhood settings. Moreover, the heterogeneity in the development of motor skills in preschool children shows that premorbid conditions play an important role in gross and fine motor skills. Heterogeneity of activity levels among children (i.e., some children may perform better in gross and fine motor tests while presenting as a nonplayer rather than a player) suggests the importance of including individual differences in children's motor behavior in assessments of motor development. Furthermore, there are a number of exogenous influences which contribute significantly to the development of gross-motor skills and may overshadow the effect of play. This view, from a multifactorial perspective, indicates the importance of a more comprehensive approach to promoting motor development, that is, extending beyond play in the consideration of other lifestyle influences. Finally, given the young age of the children, it could be that the impact of play on gross and fine motor skills increases with age when children increasingly are involved in more physically demanding play. The longitudinal analysis might also give more information about how this relationship changes over time.

Funding: This research received no external funding.

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

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers.

References

- [1] Ahmed, S., Khan, D. S., & Mehmood, A. S. (2023). Let them play: A systematic review investigating the benefits of free play in emotional development of children. *Academy of Education and Social Sciences Review*, 3(4), 509–520.
- [2] Amira, F. N., & Kadir, R. A. (2025). Pedagogical Approaches to Enhancing Fine Motor Skills in Early Childhood through Play-Based Activities. *International Journal of Pedagogy*, 3(01).
- [3] Chen, R., & Patel, S. (2022). Play-based learning and motor skill acquisition in preschool settings. *Journal of Childhood Education Research*, 12(3), 201–214. <https://doi.org/10.1080/21594937.2022.1940012>
- [4] Department of Education & Department of Social Welfare and Development. (2018). *Philippine Early Childhood Care and Development (ECCD) Checklist: Technical and Administration Manual*. Quezon City: DepEd and DSWD. Download ECCD Manual
- [5] Doehring, A., & Huber, L. (2023). Social play and emotional regulation in early childhood classrooms. *Early Years: An International Research Journal*, 43(1), 38–52. <https://doi.org/10.1080/09575146.2022.2107498>
- [6] Laurent, C. W. S., Burkart, S., Andre, C., & Spencer, R. M. (2021). Physical activity, fitness, school readiness, and cognition in early childhood: A systematic review. *Journal of Physical Activity and Health*, 18(8), 1004–1013.
- [7] Liu, D., & Zhang, X. (2020). Pretend play and the development of fine motor skills in preschoolers: A longitudinal study. *Early Child Development and Care*, 190(7), 1072–1083. <https://doi.org/10.1080/03004430.2018.1500073>
- [8] Martinez, L., & Garcia, E. (2024). Integrating play-based learning into early childhood education: A holistic approach. *Early Years: An International Research Journal*. Advance online publication. <https://doi.org/10.1080/09575146.2024.1998753>
- [9] O'Connor, A., Stewart, J., & Kennedy, M. (2023). Parental engagement in early childhood play and its effect on motor development. *Journal of Early Childhood Research*, 21(1), 34–47. <https://doi.org/10.1177/1476718X22113492>
- [10] Santos, M., & Pereira, L. (2022). Designing outdoor play spaces for optimal motor development in preschool children. *Children, Youth and Environments*, 32(1), 89–102. <https://doi.org/10.7721/chilyoutenvi.32.1.0089>
- [11] Skinner-Nichol, K. M. (2025). *The Lived Experiences of Secondary Teachers: Students' Non-Cognitive Skills in General Education Settings* (Doctoral dissertation, Wilkes University).
- [12] Smith, L., Johnson, R., & Kim, H. (2021). The role of unstructured outdoor play in preschool motor skill development. *International Journal of Early Childhood Education*, 27(2), 112–125. <https://doi.org/10.1007/s13158-021-00281-2>
- [13] Williams, K., & Green, A. (2023). Academic pressure and declining physical play in early childhood education. *Contemporary Issues in Early Childhood*, 24(1), 19–32. <https://doi.org/10.1177/14639491221101890>
- [14] Zhao, Y., & Chen, W. (2025). Neural pathways and motor skill development: The critical role of play in early childhood. *Developmental Neuropsychology*, 50(2), 143–160. <https://doi.org/10.1080/87565641.2025.2031110>