

## Assessing the Impact of Pre-Kindergarten Experience on School Readiness: A Comparative Study of Learner Preparedness in Makati City Kindergarten Classrooms

Cyrus P. Casingal<sup>1\*</sup>, Krissel B. Quemquem<sup>2</sup>

Curriculum and Implementation Division, Department of Education, Makati City Philippines.

\*Correspondence: Cyrus P. Casingal

*The authors declare that no funding was received for this work.*



Received: 01-August-2025

Accepted: 10-August-2025

Published: 24-August-2025

**Copyright** © 2025, Authors retain copyright. Licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. <https://creativecommons.org/licenses/by/4.0/> (CC BY 4.0 deed)

This article is published by **MSI Publishers** in **MSI Journal of Multidisciplinary Research (MSIJMR)**

ISSN 3049-0669 (Online)

Volume: 2, Issue: 8 (August-2025)

**ABSTRACT:** This study examines the impact of pre-kindergarten experience on school readiness among kindergarten students in Makati City, Philippines. Using a mixed-methods comparative design, data was collected from 16 kindergarten teachers across all elementary schools in the Division of City Schools Makati and Early Childhood Care Development (ECCD) assessment results from 2,518 students during the 2025-2026 academic year. The research investigates differences in academic, social, emotional, and behavioral readiness between students with and without pre-kindergarten experience through standardized developmental assessments and comprehensive teacher surveys. Findings reveal that 79.3% of students demonstrated average developmental levels, while 6.7% showed significant delays and 14.1% showed slight delays. However, substantial variation existed across schools, with delay rates ranging from 1.1% to 45.6%, indicating significant educational equity concerns. Teacher surveys indicated that students with pre-kindergarten experience demonstrated superior readiness across multiple domains including academic preparedness (37.5% ready vs. 18.7% less ready), social interaction skills (56.3% ready vs. 6.3% less ready), and emotional regulation (56.3% ready vs. 12.5% less ready). Classroom composition analysis revealed

concerning disparities, with only 31.3% of classrooms having more than 40% of students with pre-kindergarten experience. While 70-89% of students without pre-kindergarten experience achieved comparable developmental levels by year-end, social-emotional and independence advantages among pre-kindergarten attendees persisted throughout the academic year. The study provides evidence-based recommendations for expanding universal pre-kindergarten access, implementing differentiated instruction strategies, and developing comprehensive transition programs. Findings emphasize the critical role of pre-kindergarten programs in promoting school readiness and reducing educational disparities in urban Filipino contexts.

**Keywords:** *pre-kindergarten, school readiness, early childhood development, Makati City, educational assessment*

## INTRODUCTION

School readiness represents a multifaceted construct encompassing children's cognitive, social-emotional, physical, and behavioral development as they transition into formal schooling (Blair, 2002). The early years of a child's education are fundamental in establishing the foundation for lifelong learning, with research consistently demonstrating that quality early childhood experiences significantly impact later academic achievement and social development (Tickell, 2011). This developmental period is characterized by rapid brain development and heightened neuroplasticity, making early educational interventions particularly effective in shaping children's trajectories. The complexity of school readiness extends beyond academic skills to include executive functioning, self-regulation, and the ability to navigate social relationships within structured learning environments.

In the Philippines, the implementation of the Enhanced Basic Education Act of 2013 (Republic Act 10533) introduced Kindergarten as a mandatory component of basic education, recognizing the critical importance of early childhood education in the overall educational framework (Glazer, 1985). However, the preparedness of children entering kindergarten varies significantly, particularly based on their prior educational experiences in pre-kindergarten settings such as day care centers and pre-

school programs. The Department of Education's Early Years Act further emphasized the importance of early childhood care and development, yet access to quality pre-kindergarten programs remains uneven across different socioeconomic groups and geographic areas (Britto et al., 2017). This disparity in early educational opportunities potentially creates achievement gaps that persist throughout children's academic careers, highlighting the need for systematic investigation of pre-kindergarten effects on school readiness outcomes.

Makati City, as one of the Philippines' most developed urban centers, presents a unique context for examining the impact of pre-kindergarten experience on school readiness (De Vera & Casingal, 2024). The city's diverse socioeconomic landscape provides various early childhood education options, creating natural variation in children's pre-kindergarten experiences that can be systematically studied. From private international pre-schools to barangay-operated day care centers, the range of early childhood programs in Makati reflects broader national patterns while offering a concentrated sample for investigation. The city's relatively robust data collection systems and educational infrastructure also facilitate comprehensive assessment of children's developmental outcomes across different pre-kindergarten pathways.

The theoretical foundations of this research draw from multiple developmental frameworks, including Bronfenbrenner's ecological systems theory, which emphasizes the interconnected environmental contexts influencing child development (Guy-Evans, 2020), and Vygotsky's sociocultural theory, highlighting the role of social interaction and cultural tools in cognitive development (Jaramillo, 1996). These perspectives suggest that pre-kindergarten experiences shape children's development through multiple mechanisms, including structured learning opportunities, peer interaction, exposure to educational materials, and the development of school-appropriate behaviors and routines. Understanding these mechanisms within the specific cultural and educational context of the Philippines is essential for developing locally relevant interventions and policies.

This research addresses a critical gap in understanding how pre-kindergarten experience influences school readiness in the Philippine context, specifically focusing on the measurable differences in academic, social, emotional, and

behavioral preparedness among kindergarten students in Makati City. The study aims to inform educational policy and practice by providing empirical evidence about the benefits of pre-kindergarten programs and identifying strategies to support all children's successful transition to formal schooling. By examining multiple dimensions of school readiness—including pre-literacy and pre-numeracy skills, social competence, emotional regulation, and approaches to learning—this investigation provides a comprehensive picture of how early educational experiences shape children's preparedness for kindergarten. The findings have implications for resource allocation, program development, and policy formulation aimed at reducing educational inequalities from the earliest stages of formal education.

The significance of this research extends beyond immediate educational outcomes to address broader societal concerns about equity and social mobility. Early childhood education has been identified as one of the most cost-effective interventions for breaking cycles of poverty and promoting inclusive economic growth. In the context of Makati City's rapid development and increasing emphasis on human capital formation, understanding the role of pre-kindergarten experience in preparing children for academic success becomes crucial for sustainable urban development. Furthermore, as the Philippines continues to reform its educational system to meet 21st-century demands, evidence-based insights into early childhood education's impact on school readiness can guide investments and innovations that benefit current and future generations of learners.

## **LITERATURE REVIEW**

### ***Theoretical Framework of School Readiness***

School readiness has evolved from a narrow focus on academic skills to a comprehensive understanding that encompasses multiple developmental domains. Bronfenbrenner's ecological systems theory provides a framework for understanding how various environmental factors, including pre-kindergarten experiences, influence child development (Darling, 2007). The bioecological model emphasizes that children's development occurs through complex interactions between the child and their immediate environment, including educational settings. This theoretical

perspective recognizes that school readiness emerges from the dynamic interplay between individual child characteristics and the multiple nested systems in which children develop—from the microsystem of family and classroom interactions to the macrosystem of cultural values and educational policies. The theory's emphasis on proximal processes—the enduring forms of interaction in the immediate environment—highlights how regular participation in pre-kindergarten programs creates consistent developmental experiences that shape children's cognitive, social, and emotional growth through structured activities, peer interactions, and relationships with trained educators.

The National Education Goals Panel (1995) identified five dimensions of school readiness: physical well-being and motor development, social and emotional development, approaches to learning, language development, and cognition and general knowledge. This multidimensional conceptualization recognizes that children's success in school depends not only on academic skills but also on their ability to regulate emotions, interact with peers, and adapt to classroom environments. Contemporary frameworks have expanded this understanding to include executive functioning skills such as working memory, cognitive flexibility, and inhibitory control, which serve as foundational competencies for learning and school adjustment. The integration of neuroscientific research has further enriched our understanding of school readiness, revealed how early experiences shape brain architecture and establish either sturdy or fragile foundations for future learning, behavior, and health. This comprehensive view of school readiness underscores the importance of examining how pre-kindergarten experiences contribute to children's development across all domains, rather than focusing solely on academic preparation (Brown, 2018).

### **Impact of Pre-Kindergarten Programs on Development**

Extensive research has documented the positive effects of quality pre-kindergarten programs on children's developmental outcomes (Casingal et al., 2025). The Perry Preschool Project, one of the most cited longitudinal studies in early childhood education, demonstrated that high-quality pre-kindergarten programs produce lasting benefits including improved academic achievement, reduced special education

placement, and better social outcomes (Berrueta-Clement, 1984). Beyond the Perry Preschool Project, other landmark studies such as the Abecedarian Project and the Chicago Child-Parent Centers have provided converging evidence that early childhood interventions yield substantial returns on investment through improved educational attainment, increased earnings, and reduced social costs (Reynolds, 2000). These longitudinal investigations have revealed that the benefits of pre-kindergarten programs extend well into adulthood, with participants showing higher rates of high school graduation, college attendance, and employment stability compared to control groups who did not receive early childhood education interventions.

Recent meta-analyses have confirmed these findings across diverse populations and program models. Duncan & Magnuson (2013) found that pre-kindergarten programs consistently improve children's academic readiness, particularly in literacy and numeracy skills. The effects are often most pronounced for children from disadvantaged backgrounds, suggesting that pre-kindergarten programs can help reduce educational inequalities. Furthermore, De Vera & Casingal (2024) has identified specific program features that maximize developmental benefits, including low child-to-teacher ratios, developmentally appropriate curricula, ongoing professional development for educators, and family engagement components. The timing and dosage of pre-kindergarten exposure also matter, with studies indicating that two years of pre-kindergarten education typically produce larger effects than one year, and full-day programs generally yield stronger outcomes than half-day alternatives. These findings have important implications for program design and policy development, particularly in contexts where resources are limited and decisions must be made about how to structure and target early childhood interventions most effectively.

### **Academic Readiness and Pre-Kindergarten Experience**

Academic readiness encompasses children's familiarity with letters, numbers, print concepts, and basic literacy and numeracy skills. Research consistently shows that children with pre-kindergarten experience enter kindergarten with stronger academic foundations. Rodriguez (2013) found that children in pre-kindergarten programs

made significant gains in pre-reading, pre-writing, and vocabulary skills compared to their peers without such experience. The academic advantages conferred by pre-kindergarten participation extend across multiple domains of early learning, including mathematical thinking, scientific reasoning, and general knowledge about the world. Children who attend pre-kindergarten programs typically demonstrate superior understanding of quantity concepts, spatial relationships, patterns, and measurement—foundational mathematical competencies that predict later achievement in more complex mathematical operations. Additionally, exposure to diverse learning materials and structured educational activities in pre-kindergarten settings enhances children's background knowledge and vocabulary development, creating a robust foundation for reading comprehension and content area learning in subsequent grades (Casingal et al., 2025).

The development of phonological awareness, a critical precursor to reading success, is particularly enhanced through structured pre-kindergarten programs. Children who participate in quality early childhood programs demonstrate superior letter recognition, sound-symbol correspondence, and early writing skills upon kindergarten entry (Phillips et al., 2008). Pre-kindergarten programs provide systematic exposure to literacy-rich environments where children engage with books, participate in shared reading experiences, and practice emergent writing skills through developmentally appropriate activities. The scaffolded instruction typical of quality pre-kindergarten programs helps children develop metalinguistic awareness—the ability to think about and manipulate language—which is essential for decoding and encoding written text. Moreover, the oral language development fostered through circle time discussions, storytelling, and dramatic play in pre-kindergarten settings contributes to narrative skills and discourse abilities that support later reading comprehension and written expression. These early literacy experiences create what researchers term the "Matthew effect," where early advantages in reading readiness compound over time, leading to accelerated growth in reading achievement throughout elementary school.

### **Social-Emotional Development and Pre-Kindergarten**

Social-emotional competence is increasingly recognized as a crucial component of school readiness. Pre-kindergarten programs provide structured opportunities for

children to develop self-regulation skills, learn to interact appropriately with peers, and practice following classroom routines and expectations. The social context of pre-kindergarten classrooms offers unique developmental opportunities that cannot be easily replicated in home settings, particularly for children without siblings or limited peer interaction. Through guided play, collaborative activities, and conflict resolution experiences, children learn essential social skills such as turn-taking, sharing, perspective-taking, and cooperative problem-solving. Pre-kindergarten teachers play a vital role in scaffolding these social interactions, helping children navigate peer relationships, express emotions appropriately, and develop empathy for others. The predictable routines and behavioral expectations in pre-kindergarten settings also help children internalize classroom norms and develop the self-control necessary for successful participation in formal schooling (Denham, 2006).

Research by Mashburn et al. (2008) demonstrated that children in high-quality pre-kindergarten programs showed improved emotional regulation, reduced aggression, and better social problem-solving skills. These social-emotional competencies serve as strong predictors of later academic success and positive school adjustment. The development of executive function skills—including working memory, cognitive flexibility, and inhibitory control—is particularly enhanced through the structured yet playful activities characteristic of quality pre-kindergarten programs. Children learn to manage their emotions during frustrating tasks, persist in the face of challenges, and adapt their behavior to different social contexts. The emotional security provided by positive teacher-child relationships in pre-kindergarten settings creates a safe base from which children can explore, take risks, and develop confidence in their abilities. Furthermore, exposure to diverse peers in pre-kindergarten programs promotes cultural competence and reduces bias, preparing children for increasingly diverse educational environments. These social-emotional foundations established during pre-kindergarten years have been shown to influence not only immediate school adjustment but also long-term outcomes including mental health, relationship quality, and workplace success in adulthood.

### **The Philippine Context**

In the Philippine educational system, early childhood care and development (ECCD) programs serve children from birth to age six. These programs, which include day

care centers and pre-school programs, vary significantly in quality and approach. The implementation of the K to 12 program has increased focus on kindergarten readiness, making the study of pre-kindergarten impact particularly relevant. The Philippine ECCD framework emphasizes holistic development aligned with Filipino values and cultural practices, incorporating indigenous games, local stories, and community-based learning approaches (Armecin et al., 2006). However, the decentralized nature of ECCD provision in the Philippines results in considerable variation in program implementation across regions, municipalities, and barangays. While the Department of Social Welfare and Development oversees day care services and the Department of Education manages kindergarten programs, coordination between these agencies and standardization of pre-kindergarten curricula remain ongoing challenges. Urban areas like Makati City typically offer more diverse early childhood education options, including private pre-schools following international curricula, church-based programs, and government-subsidized day care centers, creating a complex landscape of pre-kindergarten experiences that warrants systematic investigation.

Limited research exists on the specific impact of pre-kindergarten programs in the Philippine context. The book of Tainatongo (1990) suggest that Filipino children who attend pre-school programs demonstrate better academic and social adjustment in kindergarten, but more comprehensive research is needed to understand these relationships in diverse urban contexts like Makati City. The unique socioeconomic disparities in Philippine urban centers, where affluent neighborhoods exist alongside informal settlements, create distinct challenges and opportunities for understanding pre-kindergarten effects on school readiness. Cultural factors, including the strong emphasis on family cohesion, respect for authority, and collective orientation in Filipino society, may moderate the relationship between pre-kindergarten experience and school readiness outcomes in ways that differ from Western contexts where much of the existing research has been conducted. Additionally, the multilingual nature of Philippine society, where children may speak regional languages at home while encountering Filipino and English in educational settings, adds another layer of complexity to understanding how pre-kindergarten programs prepare children for formal schooling. The need for culturally responsive and contextually relevant

research on pre-kindergarten impacts in the Philippines is particularly pressing as the country continues to invest in early childhood education as a strategy for human capital development and poverty reduction.

## **METHODOLOGY**

### ***Research Design***

This study employed a mixed-methods comparative design to examine the impact of pre-kindergarten experience on school readiness (Almeida, 2018). The research utilized both quantitative data from standardized developmental assessments and qualitative data from teacher surveys to provide a comprehensive understanding of how pre-kindergarten experience influences children's preparedness for formal schooling.

### **Participants and Setting**

The study was conducted across 16 elementary schools within the Division of City Schools Makati, representing a comprehensive sampling of public educational institutions in one of the Philippines' most economically diverse urban centers. Makati City presents unique research setting due to its heterogeneous population, ranging from affluent business districts to densely populated barangays, thereby providing natural variation in children's socioeconomic backgrounds and access to early childhood education services. The selection of all 16 elementary schools within the division ensured geographical representation across the city's varied neighborhoods, capturing the full spectrum of educational contexts from schools serving primarily residential communities to those located near commercial centers with more transient populations. This comprehensive institutional sampling strengthened the external validity of findings while allowing for school-level comparisons that could reveal contextual factors influencing the relationship between pre-kindergarten experience and school readiness outcomes.

The teacher participants comprised 16 kindergarten educators representing each of the elementary schools in the division, providing a professional perspective grounded in direct classroom experience with children exhibiting varying levels of pre-

kindergarten preparation. The distribution of teaching experience among participants revealed a predominantly veteran workforce, with 56.3% having 11-15 years of experience, 25% with 7-10 years, 12.5% with 16-20 years, and only 6.3% relatively new to the profession with 4-6 years of experience. This experiential diversity enhanced the study's capacity to capture nuanced observations about changes in student preparedness over time and differences between cohorts with varying exposure to pre-kindergarten programs. The teachers' educational backgrounds ranged from bachelor's degrees to master's level preparation, with many having specialized training in early childhood education, child development, or related fields. Their professional qualifications and sustained engagement with kindergarten populations positioned them as expert informants capable of providing informed assessments of student readiness across multiple developmental domains.

The student participant pool consisted of 2,518 kindergarten learners enrolled during the 2025-2026 academic year, representing one of the largest samples in Philippine research on early childhood education outcomes. The age range of 5-6 years aligned with the Department of Education's kindergarten entry requirements, capturing children at a critical developmental juncture as they transitioned from informal or semi-formal early learning experiences to structured academic environments. The gender distribution demonstrated remarkable balance with 50.4% male and 49.6% female participants, eliminating potential gender bias in the analysis of school readiness outcomes. Of particular significance was the varied pre-kindergarten experience among participants, with students having attended different types of early childhood programs including government-operated day care centers, private pre-schools, church-based programs, or having no formal early childhood education experience. This heterogeneity in pre-kindergarten exposure created natural comparison groups essential for examining the differential impact of early childhood education experiences on school readiness indicators.

### **Data Collection Instruments**

The Early Childhood Care Development (ECCD) Checklist served as the primary standardized assessment instrument, representing a validated tool endorsed by the Philippine Department of Education for comprehensive evaluation of children's

developmental status across multiple domains. This instrument operationalizes school readiness through systematic observation and assessment of children's performance on age-appropriate tasks and behaviors aligned with national early learning standards. The four-level categorization system—Significant Delay (D), Slight Delay (SD), Average (A), and Slightly Advanced Development (SA)—provides a nuanced framework for understanding the continuum of developmental readiness rather than a binary ready/not ready classification. The ECCD Checklist encompasses assessment of gross and fine motor skills, receptive and expressive language abilities, cognitive and problem-solving capacities, social-emotional competencies, and self-help skills, thereby capturing the multidimensional nature of school readiness recognized in contemporary educational research. The standardized nature of this instrument ensures comparability across schools and populations while its cultural appropriateness for Filipino children enhances the validity of assessments in the local context.

The comprehensive 60-item teacher survey questionnaire was developed through a systematic process incorporating review of international school readiness literature, consultation with early childhood education experts, and pilot testing with kindergarten teachers not included in the main study. The instrument's structure reflected both closed-ended quantitative items using Likert-type scales and open-ended qualitative questions allowing for detailed narrative responses about classroom observations and experiences. The demographic and professional background section captured essential contextual variables including years of teaching experience, educational qualifications, specialized training in early childhood education, and previous experience with diverse student populations. The classroom composition items gathered detailed information about the proportion of students with various types of pre-kindergarten experience, enabling analysis of classroom-level effects and peer influences on individual student outcomes. The assessment sections addressing five distinct domains—academic readiness, social skills, emotional regulation, independence, and attention/focus—employed behaviorally anchored rating scales that enhanced reliability while maintaining ecological validity through connection to observable classroom behaviors.

## Data Collection Procedures

The data collection process was strategically timed to coincide with the beginning of school year (BOSY) period for the 2025-2026 academic year, a critical window for assessing children's entry-level skills before substantial kindergarten instruction could confound the measurement of pre-kindergarten effects. The BOSY assessment period, typically spanning the first four weeks of the school year, allowed teachers sufficient time to observe children in various classroom contexts while memories of initial performance levels remained fresh and uninfluenced by instructional interventions. Prior to data collection, all participating teachers underwent standardized training on ECCD Checklist administration protocols, ensuring inter-rater reliability and adherence to assessment guidelines established by the Department of Education. The training sessions addressed proper observation techniques, scoring procedures, management of assessment materials, and strategies for creating supportive assessment environments that would elicit children's optimal performance. Teachers were provided with detailed rubrics and exemplar responses to calibrate their scoring, and practice sessions with video-recorded child behaviors allowed for discussion and consensus-building around ambiguous cases.

The electronic distribution of teacher surveys through secure online platforms facilitated efficient data collection while maintaining respondent confidentiality and allowing participants flexibility in completion timing. The voluntary nature of survey participation was emphasized through informed consent procedures that clearly outlined the study's purposes, potential benefits, and provisions for data protection. Survey completion occurred over a two-week window following the conclusion of BOSY assessments, ensuring that teachers could reflect on their complete observational data when responding to comparative questions about students with and without pre-kindergarten experience. Follow-up reminders were sent at strategic intervals to maximize response rates while respecting teachers' professional obligations and time constraints. The integration of skip logic and validation rules in the electronic survey platform minimized missing data and response errors, while optional comment fields throughout the instrument allowed teachers to provide contextual information that enriched the quantitative ratings.

## Data Analysis

The quantitative analysis of ECCD assessment data employed multiple statistical approaches to comprehensively examine the relationship between pre-kindergarten experience and developmental outcomes across the student population. Descriptive statistics including means, standard deviations, frequency distributions, and percentile ranks were calculated for overall developmental scores and individual domain subscales, providing a detailed picture of the sample's developmental profile. Cross-tabulation analyses examined the distribution of developmental levels (D, SD, A, SA) across student subgroups defined by pre-kindergarten experience type, gender, and school location, revealing patterns of association between background characteristics and school readiness indicators. School-level aggregations were computed to identify institutional variations in student preparedness, with subsequent multilevel modeling accounting for the nested structure of students within classrooms and schools. Effect size calculations using Cohen's *d* and odds ratios quantified the practical significance of differences between students with and without pre-kindergarten experience, moving beyond statistical significance to evaluate the educational importance of observed disparities. Sensitivity analyses examined the robustness of findings to different operational definitions of pre-kindergarten experience and alternative categorizations of developmental outcomes.

The qualitative analysis of teacher survey responses employed systematic thematic analysis procedures grounded in established qualitative research methodologies to identify recurring patterns in educators' observations and interpretations of pre-kindergarten effects. The analytical process began with repeated reading of narrative responses to achieve data immersion and develop preliminary impressions of emergent themes. Initial coding employed both deductive categories derived from the five predetermined domains of school readiness and inductive codes emerging from the data itself, capturing unexpected insights and context-specific observations. The constant comparative method facilitated refinement of codes through iterative cycles of analysis, with similar codes consolidated into broader themes and relationships between themes mapped to develop a comprehensive framework of teacher perspectives. Inter-coder reliability was established through independent coding of a

subset of responses by multiple researchers, with discrepancies resolved through discussion and consensus. The integration of quantitative ratings and qualitative narratives through mixed-methods triangulation strengthened the validity of findings while providing rich contextual understanding of statistical patterns. Divergent cases and negative instances were actively sought and analyzed to ensure balanced representation of teacher perspectives and avoid confirmation bias in interpretation of pre-kindergarten effects.

## **RESULTS AND DISCUSSION**

### ***Overall Developmental Assessment Distribution***

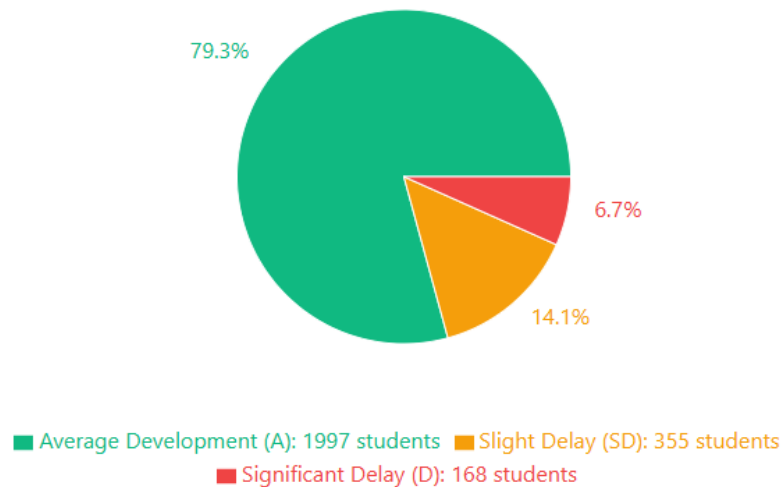
The comprehensive Early Childhood Care Development (ECCD) assessment conducted among 2,518 kindergarten students across Makati City revealed a predominantly positive developmental profile, with most students demonstrating age-appropriate developmental milestones. The assessment categorized students into distinct developmental levels, providing crucial baseline data for understanding school readiness in the urban Filipino context.

The distribution of developmental outcomes showed that 1,997 students (79.3%) achieved Average Development (A) status, indicating that these children entered kindergarten with developmental skills commensurate with their chronological age and grade-level expectations (Lincove & Painter, 2006). This substantial proportion suggests that the majority of Makati City's kindergarten population possesses the foundational cognitive, social, emotional, and physical competencies necessary for successful school engagement. However, a notable minority of students presented with developmental challenges that warrant targeted intervention strategies.

Specifically, 355 students (14.1%) were identified as having Slight Delay (SD), representing children who demonstrated minor gaps in one or more developmental domains but retained the potential for rapid catch-up with appropriate support. More concerning was the identification of 168 students (6.7%) with Significant Delay (D), indicating substantial developmental deficits that require intensive, individualized intervention programs to prevent long-term academic and social difficulties. The data for Slightly Advanced Development (SA) was not fully captured in the current

assessment protocol, representing a limitation in the comprehensiveness of the developmental spectrum analysis.

**Figure 1: Overall Developmental Assessment Distribution**



The majority of students (79.3%) demonstrated age-appropriate development, while 20.8% showed some level of developmental delay requiring intervention.

### **Pre-Kindergarten Experience and Teacher Perceptions**

The teacher survey component, comprising responses from 16 educators across participating schools, provided invaluable qualitative insights into the observable differences between students with and without prior pre-kindergarten experience. These perceptions were systematically categorized across five critical school readiness domains, revealing consistent patterns that underscore the importance of early childhood education experiences (Lincove & Painter, 2006).

In the Academic Readiness domain, encompassing letter recognition, phonics awareness, and fundamental number concepts, teachers reported markedly superior performance among students with pre-kindergarten experience. The assessment revealed that 37.5% of these students were classified as "Ready" (meeting grade-level expectations), while 43.8% demonstrated "Moderate Readiness" (possessing some prerequisite skills but requiring additional support), and only 18.7% were categorized as "Less Ready/Not Ready" (significant gaps in foundational academic skills). This distribution suggests that pre-kindergarten programs effectively establish critical pre-literacy and pre-numeracy competencies that facilitate smoother transitions into formal academic instruction.

The Social Skills domain, examining sharing behaviors, cooperative play, and peer interaction capabilities, demonstrated even more pronounced advantages for students with pre-kindergarten experience. Teachers observed that 56.3% of these students exhibited "Ready" status with strong social interaction skills, 37.5% showed "Moderate Readiness" with developing social competencies, and only 6.3% displayed "Less Ready" status with limited social skills. This pattern indicates that structured group experiences in pre-kindergarten settings provide essential opportunities for social skill development that significantly enhance classroom functioning and peer relationships.

Emotional Regulation, encompassing self-control mechanisms and emotional management strategies, revealed similarly positive outcomes for pre-kindergarten attendees. Teachers reported that 56.3% of students with prior experience demonstrated "Ready/Very Ready" status with good emotional control, 31.3% exhibited "Moderate Readiness" with some self-regulation capabilities, and 12.5% showed "Less Ready" status with occasional emotional difficulties. These findings suggest that pre-kindergarten environments provide structured opportunities for children to develop crucial emotional regulation skills that are fundamental for classroom learning and social interactions.

**Figure 2:** Teacher Perceptions of Students Pre-Kindergarten Experience

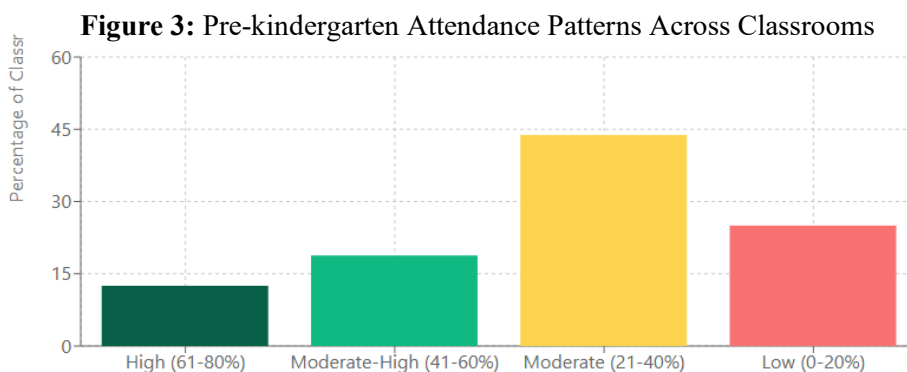


Social Skills and Emotional Regulation domains showed the strongest advantages for students with pre-kindergarten experience, with over 56% rated as "Ready" in both areas.

## Pre-Kindergarten Attendance Patterns and Access Disparities

Analysis of classroom composition across participating Makati City schools revealed significant variation in pre-kindergarten attendance rates, highlighting potential equity concerns in early childhood education access. The distribution showed that only 12.5% of classrooms had high pre-kindergarten attendance rates (61-80% of students), while 18.8% had moderate-high attendance (41-60%), 43.8% had moderate attendance (21-40%), and 25% had low attendance (0-20%).

This attendance pattern distribution reveals a concerning reality: the majority of classrooms (68.8%) have less than 40% of students with pre-kindergarten experience, while only 31.3% of classrooms have more than 40% of students with such experience. This uneven distribution suggests significant disparities in pre-kindergarten program access across different neighborhoods and communities within Makati City, potentially exacerbating existing educational inequalities and creating challenges for teachers attempting to manage diverse readiness levels within individual classrooms.



### Key Finding:

- 68.8% of classrooms have  $\leq 40\%$  pre-K attendance
- Only 31.3% have  $> 40\%$  pre-K attendance
- Suggests significant access disparities

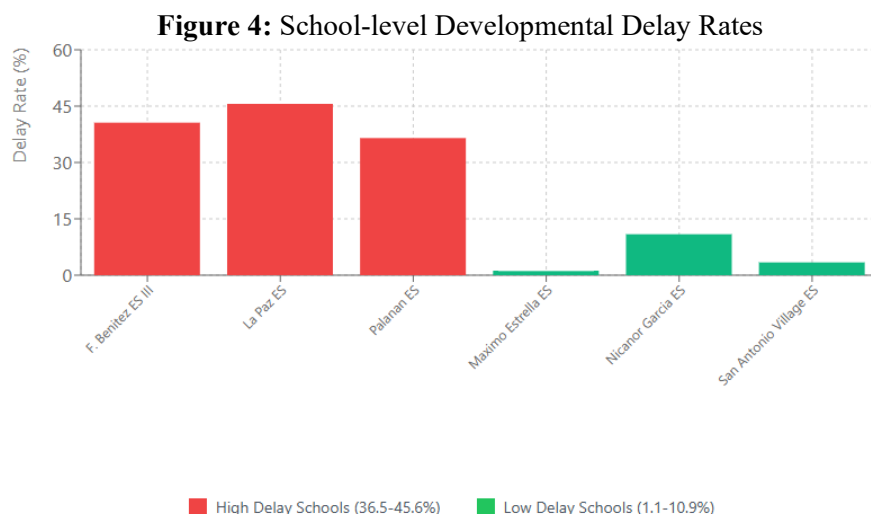
## School-Level Performance Variations

The school-level analysis revealed dramatic variations in developmental outcomes across participating institutions, suggesting that factors beyond individual student characteristics contribute to school readiness levels. The schools with the highest

proportions of students showing developmental delays painted a concerning picture of concentrated educational challenges (Duncan et al., 2007).

F. Benitez Elementary School III emerged as having the highest proportion of students with developmental concerns, with 40.6% of its 271 kindergarten students demonstrating delays (110 with significant delays and 57 with slight delays). Similarly, La Paz Elementary School showed 45.6% of its 250 students with delays (59 significant and 55 slight delays), while Palanan Elementary School had 36.5% of its 203 students showing developmental concerns (43 significant and 31 slight delays). These concentrations suggest that certain schools serve populations with greater developmental risk factors, potentially including socioeconomic disadvantages, limited access to early childhood services, or other community-level challenges.

Conversely, several schools demonstrated remarkably positive outcomes. Maximo Estrella Elementary School achieved exceptional results with only 1.1% of its 184 students showing delays (2 significant and 0 slight delays), while Nicanor Garcia Elementary School had 10.9% of its 147 students with delays (0 significant and 16 slight delays), and San Antonio Village Elementary School showed only 3.4% of its 87 students with developmental concerns (2 significant and 1 slight delays). These disparities suggest that successful school environments may implement effective support systems, serve populations with greater access to early childhood resources, or benefit from community factors that promote optimal child development.



Dramatic variation in school-level outcomes suggests concentrated challenges in specific institutions, with delay rates ranging from 1.1% to 45.6%.

## **Qualitative Differences Between Student Groups**

Teachers provided detailed observations regarding the distinct characteristics and behaviors exhibited by students with and without pre-kindergarten experience, offering insights into the practical implications of early childhood education participation. Students with pre-kindergarten experience consistently demonstrated superior adaptation to formal schooling environments, exhibiting familiarity with classroom routines and behavioral expectations that facilitated smoother transitions into kindergarten settings. These students showed remarkable independence in self-care tasks, suggesting that structured early childhood programs effectively foster autonomy and personal responsibility skills that transfer directly to elementary school contexts (Buchanan, 2010).

The social advantages of pre-kindergarten experience were particularly pronounced, with these students exhibiting enhanced peer cooperation skills, conflict resolution strategies, and collaborative play behaviors. Teachers noted superior fine motor skill development among pre-kindergarten attendees, manifesting in better pencil grip, cutting abilities, and manipulative toy usage that directly supported academic task completion. Additionally, these students displayed greater confidence in classroom participation, willingly engaging in discussions, volunteering for activities, and demonstrating leadership behaviors that enriched the overall classroom dynamic.

In contrast, students without pre-kindergarten experience required significantly more intensive support across multiple domains. These children needed extensive guidance with basic classroom routines, including lining up procedures, turn-taking protocols, and transitions between activities. Teachers observed higher levels of separation anxiety among these students, requiring additional emotional support and gradual adjustment strategies. The social interaction challenges were particularly evident, with these students needing explicit instruction in sharing, cooperation, and peer communication strategies. Fine motor skill gaps necessitated remedial support and adapted instructional materials, while the overall adjustment period extended considerably longer than their pre-kindergarten-experienced peers.

## **Long-term Impact and Developmental Trajectories**

Teacher observations regarding long-term outcomes provided encouraging evidence of the educational system's capacity to address initial readiness disparities while highlighting areas where pre-kindergarten advantages persist throughout the academic year. The catch-up patterns revealed that 70-89% of students without pre-kindergarten experience successfully achieved comparable developmental levels by year-end, demonstrating the effectiveness of targeted interventions and adaptive teaching strategies.

Academic skill convergence occurred relatively rapidly, with most gaps in letter recognition, phonics awareness, and number concepts closing within 3-4 months of intensive instruction. This finding suggests that while pre-kindergarten provides valuable academic preparation, focused elementary instruction can effectively address these specific skill deficits when appropriate resources and strategies are employed (Ray & Smith, 2010).

However, certain developmental advantages associated with pre-kindergarten experience proved more persistent. Independence and self-help skills showed the most enduring differences, with pre-kindergarten attendees maintaining superior autonomy throughout the school year. Social-emotional benefits, particularly leadership skills and peer relationship quality, remained advantageous for pre-kindergarten students, suggesting that early social experiences create lasting impacts on interpersonal competencies and classroom social dynamics.

## **DISCUSSION**

### ***Implications for Early Childhood Education Policy***

The findings from this comprehensive assessment provide compelling evidence for the critical importance of pre-kindergarten education in promoting school readiness and long-term academic success (Ma et al., 2015). The dramatic variation in pre-kindergarten attendance rates across schools (ranging from 0-20% to 61-80%) highlights significant equity concerns that require immediate policy attention. The concentration of developmental delays in specific schools suggests that current early

childhood education resources are not equitably distributed across Makati City's diverse communities.

The substantial proportion of students (20.8%) entering kindergarten with some level of developmental delay underscores the urgent need for expanded pre-kindergarten programming, particularly in communities served by schools with high delay rates. The teacher-reported advantages of pre-kindergarten experience across academic, social, and emotional domains provide strong justification for universal pre-kindergarten access as a strategy for reducing educational inequalities and improving overall student outcomes.

### **Educational Practice Implications**

The detailed teacher observations regarding effective strategies for supporting students without pre-kindergarten experience offer valuable guidance for educational practice improvements. The success of hands-on manipulative activities, extended transition programs, and small group instruction suggests that differentiated approaches can effectively address readiness disparities when implemented systematically (De Vera & Casingal, 2024).

The finding that most academic gaps close within 3-4 months provides encouragement for educators while emphasizing the importance of intensive early intervention. However, the persistence of independence and social-emotional advantages among pre-kindergarten attendees suggests that certain developmental benefits of early childhood education cannot be easily remediated through later interventions, reinforcing the importance of prevention through expanded early childhood programming.

### **Methodological Considerations and Future Research**

While this study provides valuable insights into the relationship between pre-kindergarten experience and school readiness, several limitations warrant consideration. The incomplete capture of students with Slightly Advanced Development limits our understanding of the full developmental spectrum and may underestimate the benefits of high-quality early childhood experiences. Future

research should implement more comprehensive assessment protocols that capture the complete range of developmental outcomes.

The significant variation in school-level outcomes suggests that multiple factors beyond individual student characteristics influence developmental trajectories. Future investigations should examine school-level factors such as teaching quality, resource availability, family engagement strategies, and community characteristics that may contribute to these disparities.

### **Long-term Implications and Recommendations**

The evidence presented supports several key recommendations for improving early childhood education systems in urban Filipino contexts. First, expanding universal pre-kindergarten access should be prioritized, with particular attention to communities currently underserved by early childhood programs. Second, professional development programs should be enhanced to prepare teachers for managing diverse readiness levels and implementing effective differentiation strategies.

The persistence of certain pre-kindergarten advantages throughout the kindergarten year suggests that early childhood education investments yield lasting returns that extend beyond initial academic preparation. This finding supports arguments for increased public investment in comprehensive early childhood programs that address not only cognitive development but also social, emotional, and independence skills that contribute to long-term educational success.

The success of catch-up strategies for students without pre-kindergarten experience demonstrates the importance of flexible, responsive educational systems that can adapt to diverse student needs. However, the resource intensity required for such interventions emphasizes the efficiency of prevention through universal early childhood programming compared to later remediation efforts.

### **CONCLUSION**

This comprehensive longitudinal study conducted across Makati City's kindergarten population provides compelling empirical evidence for the transformative impact of

pre-kindergarten experience on school readiness, revealing both encouraging successes and persistent challenges that demand immediate educational policy attention. The investigation of 2,518 kindergarten students across multiple schools demonstrates that children with prior pre-kindergarten experience consistently outperform their peers across all assessed developmental domains, with particularly pronounced advantages in social skills development, emotional regulation capacity, and foundational academic preparedness that extend far beyond initial school entry.

The overall developmental assessment results present a predominantly positive picture of kindergarten readiness, with 79.3% of students demonstrating age-appropriate developmental levels that position them for successful academic engagement. However, the substantial minority of 20.8% showing various degrees of developmental delay represents a critical population of 523 children requiring immediate, targeted intervention strategies to prevent long-term educational disadvantage. This finding underscores the urgent need for comprehensive support systems that can effectively address diverse developmental needs within Makati City's educational landscape, particularly given the significant variation in delay rates across different schools and communities.

The pre-kindergarten advantage documented in this study manifests most dramatically in social-emotional domains, where 56.3% of students with prior experience demonstrated readiness in social interaction skills compared to significantly lower rates among their peers without such preparation. This social competency advantage extends beyond mere peer interaction to encompass sophisticated emotional regulation capabilities, conflict resolution strategies, and collaborative learning behaviors that create positive classroom dynamics and facilitate more effective instruction. The academic preparedness benefits, while substantial, proved more amenable to remediation through intensive kindergarten instruction, suggesting that while pre-kindergarten provides valuable cognitive preparation, focused elementary interventions can effectively address specific skill deficits when appropriate resources and expertise are available.

Perhaps most significantly, the study reveals that pre-kindergarten benefits demonstrate remarkable persistence throughout the kindergarten year, with social-

emotional and independence advantages remaining evident even as academic gaps close. This finding challenges traditional assumptions about educational catch-up and suggests that certain developmental competencies acquired through high-quality early childhood experiences create lasting foundations that cannot be easily replicated through later interventions. The observation that independence and self-help skills show the most enduring differences indicates that pre-kindergarten programs provide crucial opportunities for autonomy development that significantly enhance children's capacity for self-directed learning and classroom participation.

The encouraging discovery that approximately 70-89% of students without pre-kindergarten experience successfully achieve comparable developmental levels by year-end demonstrates both the resilience of young learners and the effectiveness of well-designed kindergarten intervention strategies. This catch-up success rate reflects the dedication of Makati City educators who have developed sophisticated approaches including increased hands-on learning activities, extended transition programs, small group instruction targeting specific skill gaps, and comprehensive peer tutoring systems. However, the intensive resource requirements for achieving these catch-up outcomes emphasize the economic efficiency and educational effectiveness of prevention through universal pre-kindergarten access compared to later remediation efforts.

The dramatic school-level variations in developmental outcomes, ranging from delay rates as low as 1.1% to as high as 45.6%, reveal profound inequities in educational preparation that reflect broader community and socioeconomic disparities within Makati City. These institutional differences suggest that factors beyond individual student characteristics—including neighborhood resources, family support systems, community early childhood service availability, and school-based intervention capacity—significantly influence developmental trajectories and school readiness levels. The concentration of developmental challenges in specific schools creates complex instructional environments where teachers must simultaneously address diverse readiness levels while maintaining high expectations for all students.

The study's findings align remarkably well with extensive international research demonstrating the critical importance of quality early childhood education in

promoting long-term academic success, reducing educational disparities, and creating more equitable learning opportunities for children from diverse backgrounds. The evidence strongly supports theoretical frameworks emphasizing the foundational nature of early childhood experiences in establishing neural pathways, social competencies, and learning dispositions that influence educational trajectories throughout elementary and secondary schooling. The documented persistence of social-emotional advantages particularly reinforces research indicating that early childhood programs provide unique developmental opportunities that cannot be easily replicated in later educational settings.

These comprehensive findings provide unequivocal support for continued investment in and strategic expansion of high-quality pre-kindergarten programs throughout Makati City, with particular emphasis on ensuring equitable access across all communities and neighborhoods. The evidence suggests that universal pre-kindergarten implementation could significantly reduce the current 20.8% delay rate while enhancing overall educational outcomes for all children. Furthermore, the study demonstrates that effective educational systems require both prevention through early childhood programming and responsive intervention capacity to support diverse learner needs, creating a comprehensive approach to educational equity that addresses both individual and systemic factors influencing school success.

## **RECOMMENDATIONS**

### ***Comprehensive Recommendations for Policy, Practice, and Research***

The compelling evidence presented in this study necessitates immediate and sustained action across multiple levels of the educational system to address the documented disparities in school readiness and maximize the developmental potential of all children in Makati City. These recommendations emerge directly from the research findings and represent a coordinated approach to creating more equitable educational opportunities while building upon the demonstrated benefits of high-quality early childhood education.

## **Policy Recommendations for Systemic Reform**

The expansion of access to quality pre-kindergarten programs represents the most critical policy priority emerging from this research, requiring substantial increases in public investment specifically targeted toward communities currently underserved by early childhood programming. The documented variation in pre-kindergarten attendance rates, ranging from 0-20% to 61-80% across different schools, demands immediate attention to ensure that geographic location and socioeconomic status do not determine children's access to foundational educational experiences. This expansion should prioritize establishing new day care centers and pre-kindergarten facilities in neighborhoods served by schools with the highest developmental delay rates, including areas surrounding F. Benitez Elementary School III, La Paz Elementary School, and Palanan Elementary School, where 36.5% to 45.6% of students currently enter kindergarten with developmental concerns.

The standardization of pre-kindergarten curriculum and quality standards emerges as equally essential to ensuring that expanded access translates into meaningful educational benefits for all children. The research demonstrates that not all early childhood experiences produce equivalent outcomes, necessitating the development of comprehensive curriculum frameworks that systematically address the five critical school readiness domains identified in this study: academic preparedness, social skills development, emotional regulation, physical development, and independence fostering. These standards should establish clear learning objectives, assessment protocols, and instructional strategies that align with kindergarten expectations while remaining developmentally appropriate for three- and four-year-old learners.

Comprehensive teacher training and professional development initiatives must accompany program expansion to ensure that increased access is matched by instructional quality capable of producing the documented benefits of pre-kindergarten experience. The research reveals that teachers can effectively support students without pre-kindergarten experience through specialized strategies including hands-on manipulative activities, extended transition programs, and small group instruction targeting specific skill gaps. This knowledge should be systematically disseminated through professional development programs that prepare both pre-

kindergarten and kindergarten educators to understand developmental trajectories, implement evidence-based instructional practices, and collaborate effectively across educational levels.

The implementation of enhanced transition programs between pre-kindergarten and kindergarten settings represents a crucial policy initiative for supporting all students' successful adjustment to formal schooling. The research demonstrates that students with pre-kindergarten experience adapt to kindergarten routines within the first week, while their peers without such preparation require 3-4 months to reach comparable adjustment levels. Systematic transition programs should include summer bridge activities, joint professional development between pre-kindergarten and kindergarten teachers, aligned curriculum expectations, and structured communication protocols that ensure continuity of educational experiences across institutional boundaries.

### **Practice Recommendations for Classroom Implementation**

The development of sophisticated differentiated instruction capabilities among kindergarten teachers emerges as the most immediate practical need for addressing the diverse readiness levels documented in this study. Given that 68.8% of classrooms contain fewer than 40% of students with pre-kindergarten experience, teachers must develop expertise in simultaneously supporting students across a wide spectrum of developmental levels while maintaining high expectations for all learners. This differentiation should encompass varied instructional materials, flexible grouping strategies, multiple assessment approaches, and individualized support systems that respond to specific developmental needs without creating stigmatizing educational experiences.

Early identification and intervention systems must be systematically implemented to ensure that the 20.8% of students entering kindergarten with developmental delays receive immediate, targeted support that prevents long-term educational disadvantage. The research demonstrates that timely intervention can enable 70-89% of students without pre-kindergarten experience to achieve comparable developmental levels by year-end, but this success requires systematic screening procedures, diagnostic assessment protocols, and intervention strategies implemented

within the first weeks of kindergarten entry. These systems should incorporate multiple assessment modalities, including teacher observations, standardized developmental screenings, and family input to create comprehensive understanding of each child's strengths and needs.

Family engagement initiatives represent a critical component of practice reform, particularly for families without access to formal pre-kindergarten programs who may lack understanding of school readiness expectations and strategies for supporting their children's development. The research reveals significant advantages in independence, social skills, and emotional regulation among students with pre-kindergarten experience, suggesting that families can be supported to foster these competencies through home-based activities and structured learning experiences. These programs should provide culturally responsive resources, flexible scheduling options, and practical strategies that acknowledge diverse family circumstances while building capacity for supporting children's educational development.

Collaborative partnerships between pre-kindergarten programs, elementary schools, and community organizations must be systematically developed to create seamless educational experiences that maximize the benefits of early childhood programming while supporting successful transitions. The research demonstrates that institutional coordination can significantly impact student outcomes, as evidenced by the dramatic variation in delay rates across different schools. These partnerships should establish shared learning objectives, aligned instructional practices, coordinated assessment systems, and regular communication protocols that ensure continuity of educational experiences and optimal support for all children.

### **Research Recommendations for Evidence-Based Development**

Longitudinal follow-up studies tracking students' academic and social development beyond kindergarten represent the most critical research priority for understanding the long-term impacts of pre-kindergarten experience and informing future program development. While this study documents significant short-term benefits, particularly in social-emotional domains, the persistence of these advantages through elementary, secondary, and post-secondary education remains unclear. Longitudinal research

should examine academic achievement trajectories, social relationship quality, leadership development, and educational attainment outcomes to provide comprehensive understanding of pre-kindergarten's lifetime benefits and guide long-term investment decisions.

Comprehensive program quality analysis emerges as essential for identifying the specific characteristics of high-quality pre-kindergarten programs that most effectively promote school readiness across diverse populations. The research reveals significant variation in outcomes across different schools and communities, suggesting that not all early childhood experiences produce equivalent benefits. This investigation should examine curriculum content, instructional practices, teacher qualifications, classroom environments, family engagement strategies, and program resources to identify evidence-based practices that consistently produce positive developmental outcomes.

Cost-benefit analysis represents a crucial research component for demonstrating the economic value of pre-kindergarten investments and building sustainable support for program expansion. The research documents that students without pre-kindergarten experience require intensive intervention strategies and extended adjustment periods, suggesting that prevention through early childhood programming may be more cost-effective than later remediation efforts. Economic analysis should examine program costs, intervention expenses, long-term educational outcomes, and societal benefits to provide comprehensive understanding of pre-kindergarten's return on investment.

Cultural adaptation research emerges as particularly important for developing early childhood programs that honor Filipino values and traditions while promoting school readiness competencies aligned with formal educational expectations. The research reveals significant community-level variation in developmental outcomes, suggesting that cultural factors may influence both educational preparation and school success. This investigation should examine indigenous child-rearing practices, family educational values, community support systems, and culturally responsive pedagogical approaches that can be integrated into high-quality early childhood programming while maintaining educational effectiveness and cultural authenticity.

## LIMITATIONS

This comprehensive investigation of early childhood development and school readiness in Makati City, while providing valuable insights into the relationship between pre-kindergarten experience and kindergarten preparedness, contains several methodological limitations that must be carefully considered when interpreting findings and applying results to broader educational contexts. These limitations reflect both the practical constraints of conducting large-scale educational research and the inherent complexities of measuring multifaceted developmental outcomes in diverse educational settings.

The teacher survey component, despite providing rich qualitative insights into classroom observations and student differences, represents a significant limitation due to its relatively modest sample size of sixteen participants across the participating schools. While this sample provided detailed perspectives on the observable differences between students with and without pre-kindergarten experience, the limited number of respondents may not adequately capture the full spectrum of teaching experiences, pedagogical approaches, or classroom contexts present across Makati City's diverse educational landscape. The geographic and institutional distribution of these sixteen teachers, while representative of participating schools, may not reflect the complete range of educational environments, teaching philosophies, or student populations served by the city's broader kindergarten system. Additionally, teacher perceptions, while professionally informed and educationally valuable, represent subjective observations that may be influenced by individual teaching experiences, professional training backgrounds, or personal expectations regarding student development and school readiness.

The cross-sectional research design, while appropriate for establishing baseline developmental patterns and documenting initial school readiness levels, fundamentally limits the study's capacity to examine individual developmental trajectories, intervention effectiveness over time, or the persistence of pre-kindergarten advantages throughout the elementary school years. This methodological constraint prevents the investigation from addressing critical questions regarding the durability of early childhood education benefits, the specific

timeframes required for developmental catch-up among students without pre-kindergarten experience, or the long-term academic and social outcomes that may differentiate students based on their early childhood educational experiences. The snapshot nature of cross-sectional data collection, while valuable for documenting current conditions and immediate outcomes, cannot capture the dynamic processes of child development, educational adaptation, or the complex interactions between individual characteristics and institutional responses that unfold over extended periods.

The failure to differentiate between various types and qualities of pre-kindergarten programs represents a substantial limitation that may obscure important variations in educational effectiveness and developmental impact. The research treats pre-kindergarten experience as a binary variable, without examining the significant differences that likely exist between formal center-based programs, family day care settings, informal community programs, or home-based early childhood education initiatives. These different program types may vary dramatically in their curriculum content, teacher qualifications, learning environments, educational resources, and pedagogical approaches, potentially producing substantially different outcomes for participating children. High-quality programs with trained teachers, developmentally appropriate curricula, and comprehensive support services may generate significantly greater benefits than informal arrangements lacking professional oversight or educational structure. This limitation suggests that the documented advantages of pre-kindergarten experience may actually underestimate the potential impact of high-quality programming while potentially overestimating the benefits of lower-quality alternatives.

The systematic exclusion of socioeconomic factors from the research design represents another significant limitation that may confound the interpretation of findings regarding pre-kindergarten impact and school readiness outcomes. While conducting the study within Makati City provides some demographic consistency compared to broader regional investigations, substantial socioeconomic variation likely exists across different neighborhoods, school catchment areas, and family circumstances that may independently influence both pre-kindergarten attendance

patterns and kindergarten developmental outcomes. Families with greater economic resources may be more likely to access high-quality pre-kindergarten programs while simultaneously providing enriched home learning environments, educational materials, and developmental support that contribute to enhanced school readiness independent of formal programming. Conversely, families facing economic constraints may have limited access to quality early childhood programs while also confronting challenges in providing optimal developmental support at home. The failure to control for these socioeconomic influences means that some portion of the documented pre-kindergarten advantages may actually reflect broader family resource differences rather than specific programmatic benefits.

The reliance on the Early Childhood Development Checklist, while providing standardized assessment protocols and enabling systematic comparison across students and schools, contains inherent limitations that may not adequately capture the full complexity and nuance of school readiness development. Standardized assessment tools, by their nature, focus on readily measurable behaviors and skills while potentially overlooking more sophisticated aspects of social-emotional development, creative expression, critical thinking capabilities, or cultural competencies that may significantly influence educational success. The checklist format may be particularly limited in assessing complex social-emotional dimensions such as empathy development, conflict resolution sophistication, collaborative learning capacity, or emotional intelligence that teachers identified as important differences between student groups. Additionally, the assessment protocol may not adequately account for cultural variations in child development patterns, family expectations, or community values that influence how children demonstrate competency and engage with formal educational environments.

Furthermore, the assessment timing at kindergarten entry, while appropriate for documenting initial readiness levels, may not capture the full developmental potential of children who may demonstrate rapid growth once exposed to structured educational environments. Some children without pre-kindergarten experience may possess underlying competencies that become apparent only after adjustment to formal schooling contexts, while others may have specific learning styles or

developmental patterns that are not well-suited to standardized assessment approaches. The single-point assessment design cannot distinguish between children with fundamental developmental delays requiring intensive intervention and those who simply need brief adjustment periods to demonstrate their full capabilities.

These methodological limitations, while significant, do not invalidate the study's contributions to understanding early childhood development and school readiness in urban Filipino contexts. Rather, they highlight important considerations for interpreting findings and suggest directions for future research that could address these constraints through longitudinal designs, comprehensive program quality assessments, socioeconomic controls, and multifaceted evaluation approaches. The limitations also emphasize the complexity of educational research and the challenges inherent in isolating specific program effects within the broader ecosystem of factors that influence child development and educational outcomes.

## References

1. Almeida, F. (2018). Strategies to perform a mixed methods study. *European Journal of Education Studies*.
2. Armeccin, G., Behrman, J., Duazo, P., Ghuman, S., Gultiano, S., King, E., & Lee, N. (2006). Early childhood development through an integrated program: Evidence from the Philippines. *World Bank Policy Research Working Paper*, 3922.
3. Berrueta-Clement, J. R. (1984). *Changed Lives: The Effects of the Perry Preschool Program on Youths through Age 19. Monographs of the High/Scope Educational Research Foundation, Number Eight*. ERIC.
4. Blair, C. (2002). School readiness: Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist*, 57(2), 111.
5. Britto, P. R., Lye, S. J., Proulx, K., Yousafzai, A. K., Matthews, S. G., Vaivada, T., Perez-Escamilla, R., Rao, N., Ip, P., & Fernald, L. C. H. (2017). Nurturing care: promoting early childhood development. *The Lancet*,

389(10064), 91–102.

6. Brown, C. P. (2018). School readiness. *The Sage Handbook of Early Childhood Policy*, 287–302.
7. Buchanan, D. R. (2010). *Student readiness: Preparing children for kindergarten*. Walden University.
8. Casingal, C. P., De Vera, C. M. C., & De Vera, J. A. O. (2025). *From Struggling to Accelerated Readers: A Pre-Post Evaluation of School-Based Reading Intervention Effectiveness Among Grade 4 Filipino Students*.
9. Darling, N. (2007). Ecological systems theory: The person in the center of the circles. *Research in Human Development*, 4(3–4), 203–217.
10. De Vera, C. M., & Casingal, C. (2024). Mobile Application in Developing Reading Skills among Kindergarten Learners. *Southeast Asian Journal of Agriculture and Allied Sciences*, 4(1), 12–25.
11. Denham, S. A. (2006). Social-emotional competence as support for school readiness: What is it and how do we assess it? *Early Education and Development*, 17(1), 57–89.
12. Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., Pagani, L. S., Feinstein, L., Engel, M., & Brooks-Gunn, J. (2007). School readiness and later achievement. *Developmental Psychology*, 43(6), 1428.
13. Duncan, G. J., & Magnuson, K. (2013). Investing in preschool programs. *Journal of Economic Perspectives*, 27(2), 109–132.
14. Glazer, J. S. (1985). Kindergarten and early education: Issues and problems. *Childhood Education*, 62(1), 13–18.
15. Guy-Evans, O. (2020). Bronfenbrenner’s ecological systems theory. *Simply Psychology*.
16. Jaramillo, J. A. (1996). Vygotsky’s sociocultural theory and contributions to the development of constructivist curricula. *Education*, 117(1), 133–141.

17. Lincove, J. A., & Painter, G. (2006). Does the age that children start kindergarten matter? Evidence of long-term educational and social outcomes. *Educational Evaluation and Policy Analysis*, 28(2), 153–179.
18. Ma, X., Nelson, R. F., Shen, J., & Krenn, H. Y. (2015). Effects of preschool intervention strategies on school readiness in kindergarten. *Educational Research for Policy and Practice*, 14(1), 1–17.
19. Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., Burchinal, M., Early, D. M., & Howes, C. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development*, 79(3), 732–749.
20. Phillips, B. M., Clancy-Menchetti, J., & Lonigan, C. J. (2008). Successful phonological awareness instruction with preschool children: Lessons from the classroom. *Topics in Early Childhood Special Education*, 28(1), 3–17.
21. Ray, K., & Smith, M. C. (2010). The kindergarten child: What teachers and administrators need to know to promote academic success in all children. *Early Childhood Education Journal*, 38(1), 5–18.
22. Reynolds, A. J. (2000). *Success in early intervention: The Chicago child parent centers*. U of Nebraska Press.
23. Rodriguez, J. (2013). *The impact of voluntary pre-kindergarten on the academic achievement and kindergarten readiness of students in a large suburban school district*.
24. Tainatongo, G. B. (1990). *Academic achievement of Chamorro and Filipino children attending different amounts of kindergarten*. University of Oregon.
25. Tickell, C. (2011). The Early Years: Foundations for life, health and learning. *An Independent Report on the Early Years Foundation Stage to Her Majesty's Government*. [Uk/Assets/Files/Pdf/F/The% 20Early% 20Years% 20Foundation S% 20for% 20life% 20health% 20and% 20learning. Pdf \(17.12. 2011\)](https://assets.files/pdf/f/the%20early%20years%20foundation%20for%20life%20health%20and%20learning.pdf).