

Assessing the Role of Parental Involvement in the Development of Executive Function Skills of First Grade Students

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Abstract:

Executive function skills are critical determinants of early academic achievement; however, a notable deficiency persists in empirical investigation concerning the specific influence of parental involvement on these cognitive processes within the context of Philippine public schools. This research examined the association between parental engagement and the executive function competencies of Grade One students in designated public elementary schools. Utilizing a quantitative descriptive-correlational design, data were gathered from parents of Grade One students through the administration of a validated survey instrument. Statistical methods, such as weighted mean, Pearson correlation coefficient, and standard deviation, were employed to evaluate the degree of engagement and cognitive abilities, as well as to determine the magnitude of the relationship between the variables. The results indicated that parents demonstrated a significant degree of involvement ($M = 4.42$, $SD = 0.99$), which was distinguished by substantial engagement in communication and the implementation of structured routines within the home environment. Similarly, learners exhibited a proficient level of executive function ($M = 4.14$, $SD = 0.87$), demonstrating high competency in areas such as organizing materials, problem-solving, and remembering, although self-control was identified as a developmental domain for further improvement. Correlation analysis indicated a statistically significant moderate positive association between parental involvement and executive function skills ($r = 0.559$, $p = .005$), resulting in the rejection of the null hypothesis. These findings indicate that active parental involvement functions as a vital external support, promoting children's cognitive regulation during the transition to formal education.

Keywords: Early Childhood Education, Executive Function, Parental Engagement, Grade One Students, Descriptive-Correlational Study, Cebu, Philippines.

INTRODUCTION

Executive function (EF) skills encompass a fundamental suite of higher-order cognitive processes that are critical to children's academic performance, self-regulation, and long-term developmental trajectories. These skills, which typically include working memory, cognitive flexibility, and inhibitory control,

facilitate children's ability to manage attention, modulate behavior, solve problems, and participate in purposeful, goal-oriented learning activities (Howard et al., 2020; Karr et al., 2020). In the initial primary school years, especially during first grade, executive function skills experience accelerated development and have demonstrated a strong correlation with classroom engagement, learning persistence, and early academic achievement across various domains (Spiegel et al., 2021; Ten Braak et al., 2022). Therefore, enhancing executive functioning during this pivotal developmental period is progressively acknowledged as a fundamental element of effective education and enduring achievement.

The development of executive functions is significantly influenced by experience and is molded by children's immediate surroundings, with the family environment exerting a particularly strong impact. Current research in developmental psychology underscores the enhancement of children's executive function through the provision of consistent routines, emotionally supportive relationships, and cognitively stimulating interactions facilitated by caregivers (Blair, 2021; Vasileva et al., 2023). These experiences enable children to repeatedly develop skills in regulation, planning, and sustained attention within meaningful contexts. Effective executive function capabilities during childhood are not solely correlated with enhanced academic achievement but are also interconnected with adaptive decision-making, social proficiency, and efficacious engagement in adult responsibilities including employment, parenthood, and civic involvement (Howard et al., 2020). Within this ecological paradigm, parents constitute pivotal agents in establishing the parameters conducive to the development of executive function skills.

Parental involvement has consistently been recognized as a crucial factor in determining children's academic achievement. Recent empirical evidence consistently indicates that active parental involvement is positively correlated with children's academic performance, motivation, and socioemotional growth (Boonk et al., 2021; Jaynes, 2022). Parental involvement encompasses more than just participation in school activities; it also includes home-based practices such as overseeing learning tasks, establishing organized routines, offering emotional support, and engaging children in cognitively stimulating interactions. However, despite extensive research establishing a connection between parental involvement and academic performance, comparatively less emphasis has been placed on its influence in developing children's executive function skills, especially among students in the early primary grades. This disparity is significant given that executive function skills constitute the cognitive processes by which familial support can be converted into enduring learning behaviors and academic achievement.

Emerging research further suggests that the quality and efficacy of parental involvement are affected by parents' inherent cognitive abilities and self-regulatory skills. Deater-Deckard et al. (2021) illustrated that parents possessing more robust executive functioning are more proficient in arranging effective learning environments, adhering to educational guidance, and sustaining consistent involvement in their children's educational activities. In a similar vein, Grolnick et al. (2021) underscored that successful parental involvement necessitates planning, monitoring, and affective regulation, all of which are capacities

intimately linked to executive function. The current results indicate that parental involvement extends beyond behavioral aspects and is cognitively mediated, thereby directly influencing children's development of self-control, organizational abilities, and problem-solving skills through processes of modeling and scaffolding.

Within the Philippine context, empirical investigations exploring the correlation between parental engagement and the development of executive functions remain scarce, especially in public elementary school environments. Recent local studies suggest that Filipino parents significantly contribute to early learning by providing home-based supervision, demonstrating emotional responsiveness, and establishing consistent routines (Alampay & Rothenberg, 2021; Oblina & Alampay, 2020). These results are consistent with international research indicating that parental involvement in early childhood substantially fosters children's self-regulation and cognitive growth. Despite this, a limited body of research has systematically investigated the relationship between parental involvement and specific facets of executive function in the context of Grade One students within the Philippine educational system.

In addition to demonstrating an association, this research contributes to the existing literature by reconceptualizing parental involvement as a developmental process that actively fosters the cultivation of executive function skills during the transition to formal education. This research reframes the relationship between executive function and parental involvement, conceptualizing it as dynamic, multidimensional, and context-dependent, rather than viewing executive function as an immutable learner characteristic or parental involvement as a uniform construct. This approach reflects the complexities of early-grade learning within public school systems. Through the disaggregation of executive function into specific, educationally relevant domains; including homework completion, organizational skills, long-term task management, memory, problem-solving abilities, and self-control, this research provides a detailed understanding of how parental involvement influences daily learning behaviors. This methodology addresses recent recommendations within developmental and educational research for ecologically valid models that integrate cognitive theory with practical classroom applications (Distefano et al., 2024). This study thus provides a contextually informed, practice-focused framework, thereby enhancing the explanatory capacity of executive function research. Furthermore, it highlights the critical role of families in fostering early cognitive development, particularly in environments where structural limitations amplify the significance of familial support.

Given the central role of executive function skills in early academic success, this study seeks to assess the parents' involvement and executive function skills of Grade One learners in selected public elementary schools during the School Year 2023–2024. Specifically, the study aims to determine the profile of the respondents in terms of age and gender, highest educational attainment, number of children, and combined family monthly income; the level of parents' involvement toward the school activities of the learners; and, as perceived by the respondents, the level of executive function skills of the learners in terms of doing homework, organizing materials, dealing with long-term projects, remembering, problem-solving, and

self-control. Furthermore, it seeks to develop an evidence-based action plan grounded in the findings of the study.

By empirically examining these relationships, the present study contributes to the growing body of literature on early childhood executive function by foregrounding the role of parental involvement within a developing-country context. The findings are expected to provide theoretically grounded and contextually relevant insights that can inform family-centered interventions, strengthen school-home partnerships, and guide educational policies aimed at enhancing executive function development in the early grades. Ultimately, this research advances the perspective that fostering executive function is not solely a classroom responsibility but a shared endeavor that requires intentional, informed, and sustained parental engagement to support children's cognitive readiness and long-term academic success.

REVIEW OF RELATED LITERATURE

Executive function (EF) skills are broadly acknowledged as a collection of advanced cognitive processes that enable individuals to regulate behavior, direct attention, process information effectively, and engage in goal-oriented activities. Contemporary research characterizes executive function as a multifaceted construct encompassing working memory, cognitive flexibility, and inhibitory control, collectively facilitating adaptive performance in academic and daily environments (Howard et al., 2020; Karr et al., 2020).

This conceptualization aligns with Barkley's Executive Function Theory, which identifies behavioral inhibition as the core mechanism underlying executive functioning. According to Barkley, the ability to inhibit immediate responses allows individuals to engage working memory, regulate emotion and motivation, internalize rules, and organize behavior across time; capacities that are indispensable for successful classroom learning. During early childhood and the elementary school years, these competencies become increasingly salient as children are expected to move from externally regulated behavior toward greater self-control and autonomy. In Grade One, learners are required to follow instructions, manage learning materials, complete tasks independently, and regulate emotional responses within structured classroom environments, positioning executive function as a key determinant of early academic success.

Recent empirical findings indicate that executive function abilities are robust predictors of early academic achievement. Gasteiger et al. (2022) demonstrated that executive function components assessed in early childhood significantly predicted later literacy and numeracy outcomes, even after controlling for socioeconomic status and prior academic attainment. Similarly, Spiegel et al. (2021) documented that children with stronger executive function skills exhibited higher levels of classroom engagement, greater task persistence, and superior academic performance across subject areas. These findings are reinforced by subsequent research showing that executive function uniquely predicts learning outcomes beyond general intelligence and content knowledge (Camerota et al., 2020; McClelland et al., 2023). Within Barkley's framework, these outcomes reflect children's developing capacity to inhibit impulsive behavior,

sustain attention, and organize actions toward future goals—abilities that are essential for formal schooling.

In addition to academic performance, executive function skills are closely linked to children's socioemotional competence and long-term developmental outcomes. Meta-analytic evidence indicates that early self-regulation and executive functioning predict later adaptive behavior, social competence, and reduced behavioral difficulties (Howard et al., 2020). Robson et al. (2020) further emphasized that executive function skills developed in early childhood serve as protective factors that support resilience, self-efficacy, and adaptive functioning across the lifespan. These findings correspond with Jean Piaget's Social Development Theory, which emphasizes that children's cognitive and moral development is shaped through social interaction, cooperation, and rule-based engagement with others. Piaget argued that as children interact with peers and adults, they gradually move from egocentric thinking toward decentration, enabling them to consider multiple perspectives, follow social rules, and regulate behavior; processes that closely parallel the development of executive function.

The development of executive function is highly malleable and influenced by children's interactions within their immediate environments. Contemporary developmental research underscores that executive function skills are strengthened through consistent practice within emotionally supportive, structured, and cognitively stimulating contexts (Blair, 2021; Vasileva et al., 2023). From a Piagetian social-developmental perspective, such environments provide opportunities for children to engage in cooperative activities, shared problem-solving, and rule-governed interactions, all of which promote cognitive decentration and self-regulation. The home environment, in particular, plays a significant role, as it offers daily opportunities for children to participate in routines, negotiate expectations, resolve conflicts, and engage in guided learning experiences that require planning, self-control, and sustained attention. Research indicates that children whose parents provide consistent routines, emotional responsiveness, and structured guidance exhibit stronger executive function skills upon school entry (Tarullo et al., 2020; Valcan et al., 2022).

Parental involvement has long been recognized as a vital factor influencing children's academic achievement and socioemotional development. Recent systematic reviews and meta-analyses reaffirm that parental involvement is positively associated with academic success, learning motivation, and behavioral adjustment (Boonk et al., 2021; Jeynes, 2022). Barkley's theory helps explain this relationship by framing parental involvement as a form of external behavioral regulation that supports children whose executive functions are still developing. At the same time, Piaget's Social Development Theory explains how parent-child interactions—particularly those involving discussion, cooperation, and shared rule-setting—support the internalization of norms and the gradual development of self-regulation. Home-based parental involvement, including homework supervision, establishment of routines, monitoring academic progress, and engagement in educational dialogue, creates social contexts in which children actively construct understanding and practice executive control (Boonk et al., 2021; Wilder, 2023).

Park et al. (2022) emphasized that parental involvement supports children's socioemotional development by fostering autonomy, persistence, and emotional regulation—competencies that align with both Barkley's executive function domains and Piaget's view of socialized cognition. More recent studies

demonstrate that parental engagement promotes children's self-regulated learning behaviors, including goal-setting, task monitoring, and sustained attention (Park et al., 2022; Grolnick et al., 2021). From a Piagetian perspective, these behaviors reflect children's increasing ability to coordinate internal cognitive processes with socially derived rules and expectations. During the early primary years, when children are expected to manage assignments, organize materials, and complete tasks independently, parental involvement functions as both a regulatory support and a social context for cognitive growth.

Recent research has also examined how parents' own executive functioning capacities influence the quality and effectiveness of their involvement in children's education. Deater-Deckard et al. (2021) found that parents with stronger executive function skills were more consistent in monitoring schoolwork, organizing learning routines, and implementing educational recommendations. These findings underscore Barkley's assertion that executive function governs an individual's capacity to structure behavior over time. Supporting this view, Fong et al. (2023) demonstrated that parental stress and executive function difficulties negatively affect engagement consistency and instructional quality in the home. From Piaget's social-developmental lens, such disruptions may limit opportunities for constructive interaction, cooperative problem-solving, and rule-based engagement that are essential for children's cognitive and social regulation.

Grolnick et al. (2021) highlighted that effective parental involvement requires the provision of structure, characterized by clear expectations, consistent routines, and supportive guidance. Such behaviors rely heavily on executive processes including planning, working memory, and inhibitory control. When parents model these skills in everyday interactions, children are exposed to concrete examples of self-regulation and goal-directed behavior. Piaget emphasized that through repeated social interaction and rule-governed activity, children internalize regulatory structures, gradually shifting from externally imposed rules toward autonomous self-regulation.

Although executive function and parental involvement have each been extensively studied, research explicitly examining their interrelationship remains limited, particularly in early elementary contexts. Emerging evidence indicates that parental involvement significantly influences executive function-related behaviors such as effortful control, organization, and self-regulation. Liew et al. (2022) reported that children whose parents demonstrated higher levels of engagement and monitoring exhibited stronger effortful control and academic self-regulation. Similarly, Berthelsen et al. (2021) found that supportive and structured parenting practices were positively associated with executive function development. Recent studies increasingly emphasize the importance of examining executive function through school-relevant behaviors rather than abstract cognitive tasks alone. Korucu et al. (2023) demonstrated that parental support for learning routines was directly associated with children's organizational skills, task persistence, and behavioral regulation in early grades, illustrating how executive function manifests in everyday classroom demands.

Within the Philippine context, empirical research examining executive function development in relation to parental involvement remains limited but is gradually emerging. Recent local studies indicate that Filipino parents actively support early learning through home-based supervision, emotional support, and routine establishment, particularly in public elementary school settings (Alampay & Rothenberg, 2021;

Oblina & Alampay, 2020). These practices align with both Barkley's emphasis on external regulation and Piaget's assertion that social interaction and structured environments are essential for the development of self-regulation and cognitive autonomy. However, most Philippine studies continue to focus primarily on academic performance as the primary outcome, with relatively little attention given to executive function as a distinct cognitive construct.

In synthesis, the reviewed literature establishes executive function as a foundational determinant of early academic success and identifies parental involvement as a critical social and environmental mechanism supporting its development. Integrating Barkley's Executive Function Theory and Jean Piaget's Social Development Theory provides a robust theoretical framework for understanding how children's self-regulatory capacities emerge through behavioral inhibition, social interaction, and structured parental engagement. Addressing this gap, the present study investigates the relationship between parental involvement and executive function skills among Grade One learners in selected public elementary schools, contributing empirical evidence that bridges cognitive regulation, social development, and educational practice.

METHODOLOGY

Research Method

This study employed a quantitative descriptive–correlational research design to examine the relationship between parents' involvement and the executive function skills of Grade One learners. This design was deemed appropriate as it allows for the determination of the levels of the study variables and the analysis of their relationship as they naturally occur in the educational setting, without manipulation or intervention. The descriptive component enabled the assessment of parents' involvement and learners' executive function skills, while the correlational component facilitated the examination of the association between these variables. The methodological orientation of the study was guided by the frameworks of Dawson and Guare (2010) and Hashim et al. (2018). Dawson and Guare emphasized the importance of developmentally appropriate and structured assessment of executive function domains—such as organization, attention, emotional regulation, and self-control—using behavior rating scales and parent-report instruments. Hashim et al. highlighted the significant role of parental involvement in shaping primary learners' academic and behavioral outcomes, supporting the use of correlational approaches to examine relationships between family engagement and learner competencies. Grounded in these perspectives, the research design ensured objectivity, statistical rigor, and relevance for informing practice and the development of an evidence-based action plan.

Participants

The participants of the study were parents of Grade One learners enrolled in selected public elementary schools in the Cebu City and Lapu-Lapu City Divisions during the School Year 2023–2024. Parents were chosen as respondents because of their direct involvement in their children's home-based learning activities and school-related responsibilities, and because they are in a reliable position to observe and report on their children's executive function behaviors in everyday contexts. A purposive sampling technique was employed to ensure that respondents had direct, consistent, and active involvement in their

children's education. The demographic characteristics of the respondents included age, gender, highest educational attainment, number of children, and combined family monthly income. These variables were gathered to provide contextual information that may influence patterns of parental involvement and perceptions of learners' executive function skills.

Data Collection Tools

Data were collected using a researcher-developed structured questionnaire aligned with the objectives and variables of the study and informed by the executive function domains described by Dawson and Guare (2010). The instrument consisted of three major parts:

Part I: Profile of the Respondents

This section gathered demographic information such as age, gender, highest educational attainment, number of children, and combined family monthly income.

Part II: Parents' Involvement

This section measured the level of parents' involvement in their children's learning and school activities. Items focused on home-based and school-related involvement, including learning support at home, communication with teachers, supervision of academic tasks, and participation in school activities.

Part III: Executive Function Skills of the Learners

This section assessed the executive function skills of Grade One learners as perceived by the parents, covering the following domains: doing homework, organizing materials, dealing with long-term projects, remembering, problem solving, and self-control.

The questionnaire utilized a five-point Likert scale, with higher scores indicating higher levels of parental involvement and executive function skills. The instrument underwent content validation by experts in education and child development to ensure clarity, relevance, and alignment with the study objectives. Reliability was established through pilot testing and the computation of Cronbach's alpha to confirm internal consistency of the scales.

Data Collection Procedure

Prior to data gathering, formal approvals were secured from the concerned school authorities and administrators. The researcher coordinated with school heads and Grade One teachers to explain the objectives, significance, and procedures of the study. Informed consent was obtained from all parent respondents, and participation was strictly voluntary. Questionnaires were distributed to the respondents with clear instructions for completion and were retrieved after completion. All responses were checked for completeness, systematically coded, and organized for data analysis. Throughout the data collection process, confidentiality and anonymity of the respondents were strictly maintained in compliance with the Data Privacy Act of 2012 (Republic Act No. 10173).

Data Analysis

Data analysis employed both descriptive and inferential statistical techniques aligned with the research questions. Frequency counts and percentages were used to describe the demographic profile of the respondents. Weighted means and standard deviations were computed to determine the levels of parents' involvement and executive function skills of the learners. To determine whether a significant relationship existed between parents' involvement and learners' executive function skills, the Pearson Product-

Moment Correlation Coefficient was utilized at a 0.05 level of significance. A trained statistician assisted in the statistical analysis to ensure accuracy in computation and appropriateness in the interpretation of results.

RESULTS

Table 1

Profile of the Respondents

Variable	Category	f	%
Age and Gender	22–28 years	16	21.92
	29–35 years	23	31.51
	36–42 years	24	32.88
	43 years and above	10	13.69
	Female	70	95.89
	Male	3	4.11
Highest Educational Attainment	College Graduate	7	9.59
	College Level	7	9.59
	High School Graduate	44	60.27
	High School Level	6	8.22
	Elementary Graduate	4	5.48
	Elementary Level	5	6.85
Number of Children	1–2 children	34	46.57
	3–4 children	29	39.74
	5 and above	10	13.69
Combined Family Monthly Income	₱10,000 and below	27	62.50
	₱10,001–15,000	23	16.67
	₱15,001–20,000	7	12.50
	₱20,001–25,000	3	0.00
	₱25,001–30,000	13	8.33

Table 1 displays the demographic features of the respondents. In terms of age, the largest proportion of respondents belonged to the 36–42 age group (32.88%), followed closely by those aged 29–35 years (31.51%). Respondents aged 22 to 28 years constituted 21.92%, while those aged 43 years and older represented 13.69%. The sample comprised predominately female participants, numbering seventy respondents (95.89%), whereas only three respondents (4.11%) identified as male. Concerning educational attainment, the predominant proportion of respondents possessed a high school diploma, accounting for

60.27% of the total population. Graduates of higher education institutions and respondents with college-level education each represented 9.59%, whereas individuals possessing a high school diploma constituted 8.22%. Elementary graduates and respondents at the elementary level comprised 5.48% and 6.85%, respectively. Regarding family size, the majority of respondents had one to two children (46.57%), followed by those with three to four children (39.74%), while respondents with five or more children accounted for 13.69%. For combined family monthly income, the majority reported an income of ₱10,000 and below (62.50%). Those earning ₱10,001–15,000 accounted for 16.67%, followed by ₱15,001–20,000 at 12.50%. Respondents earning ₱25,001–30,000 comprised 8.33%, while no respondents were recorded in the ₱20,001–25,000 income bracket.

Table 2

Level of Parent's Involvement towards the School Activities of the Learners

S/ N	Indicators	WM	SD	Verbal Description
1	I make sure that my child acts in accordance with his/her study schedule and study at home.	4.74	0.55	Highly Involved
2	I make sure that my child has a comfortable space for learning.	4.73	0.61	Highly Involved
3	I always talk to my child about his/her daily activities.	4.78	0.73	Highly Involved
4	I guide my child when performing household chores.	4.75	0.52	Highly Involved
5	I examined my child's homework.	4.69	0.72	Highly Involved
6	I make sure that my child has enough reference books, stationery, and other educational necessities.	4.63	0.63	Highly Involved
7	I make sure that a learning environment with less noise from the television/radio when my child studies his/her lessons.	4.04	0.29	Involved
8	I send my children to extra classes held at school.	4.36	1.04	Highly Involved
9	I send my son to paid tuition.	2.82	0.21	Moderately Involved
10	I always talk with my child about his/her problems.	4.66	0.79	Highly Involved
Aggregate Mean		4.42		
Aggregate Standard Deviation			0.99	Highly Involved

Legend: 4.21-5.00-Highly Involved; 3.41-4.20- Involved 2.61-3.40-Moderately Involved ; 1.81-2.60-Less Involved ;1.00-1.80-Not Involved

Table 2 illustrates the extent of parental involvement in the learners' school activities. The data indicates an overall mean of 4.42, which corresponds to the qualitative classification of Highly Involved. The aggregate standard deviation of 0.99, which is relatively low, suggests that the responses exhibit a strong degree of central tendency, thereby indicating a consistent level of high participant involvement. Among the particular indicators, the highest average score was recorded for Indicator 3, titled "I consistently discuss with my child their daily activities," with a weighted mean of 4.78 (SD = 0.73). This is

subsequently succeeded by Indicator 4, “I provide guidance to my child during the execution of household tasks” (WM=4.75, SD=0.52), and Indicator 1, “I ensure that my child adheres to their study schedule” (WM=4.74, SD=0.55). These findings suggest that parents place significant importance on effective communication and the development of routines within the home environment. In contrast, the minimum average score was obtained for Indicator 9, “I send my son to paid tuition,” with a weighted mean of 2.82 (SD=0.21), categorized as Moderately Involved. Furthermore, Indicator 7, pertaining to the establishment of a learning environment characterized by reduced disturbance from television or radio, attained an average score of 4.04 (SD=0.29), which is qualitatively categorized as Involved.

Table 3
Summary on the level of executive function skills of the learners

Components	WM	SD	Verbal Description
Doing Homework	4.34	0.83	Highly Skilled
Organizing Materials	4.60	0.99	Highly Skilled
Dealing with Long-term Projects	4.51	0.68	Highly Skilled
Remembering	4.36	0.84	Highly Skilled
Problem Solving	4.44	0.73	Highly Skilled
Self-control	2.62	1.16	Moderately Skilled
Grand Mean	4.14		
Grand Standard Deviation		0.87	Skilled

Table 3 provides a synopsis of executive function skill levels observed in Grade One learners across six primary components. The data indicates a grand mean of 4.14, thereby categorizing the learners as proficient in overall executive functioning. The overall standard deviation of 0.87 signifies a relatively narrow variation of scores, implying that the executive function capabilities are comparatively stable throughout the respondent cohort. Within the designated components, Organizing Materials achieved the highest average score of 4.60 (SD=0.99), succeeded by Dealing with Long-term Projects at 4.51 (SD=0.68), and Problem Solving at 4.44 (SD=0.73); all of which are qualitatively characterized as Highly Skilled. Participants also demonstrated considerable proficiency in Remembering (WM = 4.36, SD = 0.84) and Homework Completion (WM = 4.34, SD = 0.83). Conversely, the aspect of Self-control received the minimum evaluation with a weighted mean of 2.62 (SD=1.16), categorizing it as Moderately Skilled. This specific score is considerably less than those observed in the other domains and exhibits the greatest standard deviation, thereby reflecting substantial variability in the learners' capacity for impulse and emotional regulation relative to their cognitive task management proficiency.

Table 4- Test of significant relationship between the parents' involvement and executive function skills of the learners

Variables	r-value	Strength of Correlation	p - value	Decision	Result
Parents' Involvement and Executive Function Skills	0.559*	Moderate Positive	0.005	Reject Ho	Significant

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

Table 4 demonstrates the statistical analysis of the significant association between parental involvement and the executive function skills of the learners, employing the Pearson Product–Moment Correlation Coefficient. The analysis produced an r-value of 0.559, suggesting a moderate positive correlation between parental involvement and executive function abilities. The calculated p-value of 0.005 is below the 0.05 significance threshold, resulting in the rejection of the null hypothesis. The findings indicate a statistically significant association between parental involvement and the executive function abilities of the learners. The results indicate that increased parental involvement correlates with enhanced executive function abilities in first-grade students.

DISCUSSION

The demographic characteristics of the respondents establish a crucial contextual basis for interpreting patterns of parental involvement and their prospective impact on the executive function skills of first-grade students. The majority of respondents, aged 29–42, indicates that the participants were primarily in their prime parental and professional years, a developmental phase typically characterized by increased responsibility for children's educational support and the establishment of daily routines. Prior research suggests that parents within this demographic demonstrate a greater propensity to regularly participate in home-based educational practices. These practices, including homework supervision, the structuring of daily routines, and the reinforcement of behavioral standards, are considered essential for the cultivation of executive function skills during the early childhood years (Boonk et al., 2021; Howard et al., 2020). The significant proportion of female respondents corroborates the established pattern in educational research, wherein mothers typically assume the principal responsibility for children's early learning and school involvement, especially within public elementary school settings (Jeynes, 2022). Maternal predominance holds considerable significance, given that consistent caregiver involvement has been demonstrated to foster the development of children's self-regulation, emotional control, and goal-directed behavior; essential elements of executive function (Blair, 2021). Regarding educational attainment, the significant percentage of respondents who had completed high school underscores a setting where formal educational qualifications may be modest, while parental involvement persists. Empirical evidence indicates that parental educational attainment does not invariably limit their capacity to foster the development of executive functions in their children, particularly when parental engagement encompasses the

establishment of routines, vigilant monitoring, and the provision of emotional support, as opposed to direct academic tutoring (Valcan et al., 2022). This finding is especially pertinent in developing-country contexts, where experiential knowledge and everyday parental practices frequently serve as substitutes for limited formal education (Alampay & Rothenberg, 2021). The observed distribution of family size, characterized by a majority of respondents reporting one to four children, could potentially enhance parental engagement. This may be achieved through the more efficient allocation of parental time and cognitive resources, subsequently fostering children's organizational skills, task persistence, and behavioral regulation (Karr et al., 2020). In contrast, greater family sizes have been linked to heightened demands on parental executive functioning, which may affect the uniformity of engagement and the organization maintained within the household (Deater-Deckard et al., 2021). The income profile of respondents, marked by a significant proportion of low-income households, emphasizes the importance of investigating parental engagement within settings of economic hardship. Although low socioeconomic status frequently correlates with heightened stress levels and diminished access to educational opportunities, recent research underscores the protective influence of structured routines, predictable expectations, and emotionally supportive parenting in fostering executive function development, even in the context of financial constraints (Blair & Raver, 2021; Vasileva et al., 2023). Within the Philippine context, where numerous families contend with economic difficulties, parental engagement rooted in the development of routines and behavioral regulation may be especially significant in promoting executive function competencies in young learners (Alampay & Rothenberg, 2021; Oblina & Alampay, 2020). The demographic profile observed in this study collectively suggests a population of parents who, irrespective of educational attainment and socioeconomic status, are poised to significantly influence their children's executive function development. These contextual factors underscore the necessity of investigating parental involvement not solely as a correlate of socioeconomic status, but as a multifaceted constellation of behaviors influenced by parental roles, familial configurations, and lived experiences, all of which exert significant influence on early cognitive and self-regulatory development.

The observation that parents exhibit a high degree of involvement is consistent with current research, which indicates that home-based participation continues to be a fundamental aspect of early childhood education. The elevated scores in engaging children in discussions about daily routines and supervising study timetables indicate that parents are proactively offering "scaffolding" support to their children. Barkley's Executive Function Theory posits that this form of external structure is essential for first-grade students, as it facilitates the behavioral regulation that children have not yet completely assimilated. This focus on communication and problem-solving aligns with Jeynes' (2022) assertion that the most impactful form of parental involvement extends beyond direct academic instruction, encompassing more nuanced aspects such as parenting style and the establishment of high expectations. In the Philippine context, this aligns with the observations of Alampay and Rothenberg (2021), who found that Filipino parents highly value "pag-gabay" (guidance) and prioritize open communication to foster their child's moral and educational growth. The elevated average in adhering to study routines and establishing conducive learning environments directly underpins the advancement of executive function. Tarullo et al. (2020) and Valcan et al. (2022) highlight that household routines and the configuration of the physical environment

serve as environmental determinants of a child's inhibitory control and working memory. By implementing a structured schedule, parents fundamentally exemplify the organizational abilities and perseverance in task completion that constitute essential elements of executive function. The relatively limited financial commitment to tuition fees may be explained by the income characteristics of the survey participants, a significant proportion of whom are from low-income families. This finding is consistent with the perspective of Blair and Raver (2021), who posit that financial limitations may restrict access to fee-based educational materials while not inherently impeding a parent's capacity to offer emotional support and behavioral guidance. Moreover, Bartolome et al. (2017) observed that within Philippine public schools, parental engagement is substantially stronger in home-based oversight compared to financial contributions or participation in school-organized activities. The findings indicate that, despite potential economic constraints, these parents may mitigate these challenges by offering substantial cognitive and behavioral support through the establishment of routines and effective communication strategies. This constitutes a vital protective factor that, as posited by Vasileva et al. (2023), facilitates self-regulation in children notwithstanding socioeconomic adversities.

The results suggest that, although learners demonstrate proficiency in cognitive-managerial tasks such as material organization and problem-solving, they encounter comparatively greater difficulty in the area of self-regulation. This disparity aligns with developmental neuroscience, which indicates that cognitive functions in emotionally neutral contexts typically progress at a divergent rate from those pertaining to emotional regulation. According to Karr et al. (2020), executive function constitutes a multifaceted construct in which inhibitory control, the foundation of self-regulation, frequently represents the most variable element during the process of transitioning to formal education. The observed high levels of proficiency in materials organization, long-term project management, and homework completion are directly correlated with the degree of parental involvement documented in this study. This finding corroborates the observations of Howard et al. (2020), who determined that structured home environments and parental scaffolding demonstrably enhance a child's capacity to navigate academic expectations. Moreover, Spiegel et al. (2021) observed that children exhibiting robust organizational capabilities generally demonstrate enhanced classroom engagement, a pattern also evident within this Grade One cohort. The observed efficacy in Remembering underscores the resilience of the learners' working memory capacity. Karr et al. (2020) recognize working memory as one of the three fundamental pillars of executive function, enabling learners to maintain instructions in their cognition while executing tasks. In the Philippine context, Alampay and Rothenberg (2021) propose that cultural parental values, which prioritize adherence to adult guidance, may strengthen a child's focus on verbal instructions. Problem-solving proficiency underscores the learners' capacity to utilize logical reasoning and cognitive adaptability to attain objectives. Within Piaget's theoretical model, this signifies the progression into the concrete operational stage, wherein children initiate the application of systematic reasoning to resolve challenges. McClelland et al. (2023) underscore that effective problem-solving necessitates the integration of working memory and mental flexibility; a high score in this domain suggests that these learners possess the cognitive capacity to successfully navigate the intellectual demands of the curriculum when presented with explicit, goal-directed objectives. The comparatively lower score in self-control represents a

noteworthy observation, aligning with Barkley's Executive Function Theory. This theory proposes that behavioral inhibition constitutes the most challenging skill for young children to acquire, as it necessitates the internal deferral of immediate rewards. In the Philippine setting, Oblina and Alampay (2020) emphasized that self-regulation among Filipino children is a dynamic process influenced by familial risk factors and parenting approaches. The observed moderate skill level may be indicative of a developmental maturation gap, wherein Grade One student continues to depend significantly on external regulation provided by adults. Furthermore, McClelland et al. (2023) underscored that although children may demonstrate proficiency in academic problem-solving, the capacity to exercise self-regulation within social or stressful contexts represents a distinct developmental achievement. This indicates that although the learners possess the cognitive capabilities necessary for academic achievement, their emotional regulation remains at a moderately developed stage.

The notable correlation identified between parental involvement and executive function abilities affirms that the home setting is a key factor in cognitive development during the transition to formal education. The moderate positive correlation indicates that parental behaviors; such as setting routines and sustaining communication: offer the external framework essential for children to develop and reinforce their internal cognitive regulation. This corresponds with Barkley's Executive Function Theory, which considers external environmental supports as vital "prosthetics" for a child's developing brain; as parents engage in school-related activities, they effectively serve as models of self-regulation for the child to internalize. The present results align with recent meta-analytic findings reported by Valcan et al. (2022), which demonstrated that the quality of the home learning environment and parental scaffolding are significant predictors of executive function development during early childhood. Moreover, Grolnick et al. (2021) underscored that parental engagement is not solely a behavioral action but an inherently cognitively mediated process; through involvement, parents establish a consistent environment that alleviates cognitive burden for the child, thereby facilitating enhanced concentration and improved task execution. Within the context of the Philippines, this prominent correlation is attributable to the research conducted by Alampay and Rothenberg (2021), who emphasized that Filipino parental guidance constitutes a vital social instrument that promotes children's self-discipline and preparedness for academic pursuits. The proficiency demonstrated in problem solving, memorization, and organization of materials in the preceding tables can be attributed to this substantial connection. As guardians oversee assignments and establish daily routines, they facilitate the "proximal processes" delineated within Bronfenbrenner's Bioecological Model, thereby activating the prefrontal cortex and fostering the maturation of goal-oriented behaviors (Howard et al., 2020). However, although the correlation is statistically significant, the moderate magnitude of the association indicates that additional factors; such as school-based interventions and the child's inherent biological maturation, also contribute to the comprehensive development of executive function skills.

The collective results of this study emphasize that the development of executive function skills in Grade one learners is not an isolated cognitive process confined to the classroom but a socially embedded and environmentally supported phenomenon fundamentally rooted in parental engagement. Grounded in Barkley's theory of executive function, these findings substantiate that young learners remain significantly

dependent upon external regulatory mechanisms; such as established routines, parental oversight, and consistent direction as fundamental supports for their developing self-regulatory abilities. Additionally, when examined through the framework of Jean Piaget's theory of Social Development, the observed advancements in organization, problem-solving, and working memory demonstrate children's increasing capacity to internalize regulations and develop cognitive control via consistent social engagement and mentored practice within the familial setting. The observed moderate level of self-control underscores the developmental fact that behavioral inhibition represents one of the final executive functions to achieve complete consolidation. Furthermore, it identifies a crucial period necessitating deliberate collaboration between parents and educators. Significantly, the existence of a notable association between parental involvement and executive function abilities, even in circumstances characterized by economic limitations, indicates that efficacious parenting strategies may serve as potent protective factors that alleviate structural disadvantages. This research consequently contributes to the existing literature by reconceptualizing parental involvement not solely as a supplementary educational practice, but as a primary developmental influence that actively cultivates children's cognitive preparedness for formal education. By presenting empirical data derived from a Philippine public school setting, this research augments the international body of literature on the development of executive functions and furnishes practical guidance for educators, policymakers, and families aiming to enhance early cognitive development through family-oriented, culturally sensitive, and developmentally appropriate interventions.

CONCLUSION AND RECOMMENDATIONS

The results of this research indicate that parental engagement exerts a significant influence on the development of executive function skills among Grade One learners during their transition to formal education. Parents demonstrated a substantial degree of engagement through home-oriented practices such as routine establishment, supervision of learning activities, and sustained communication, all of which were positively associated with learners' performance in key executive function domains, including organization, problem-solving, memory, and task completion. However, the relatively modest level of self-control observed among learners highlights a critical developmental consideration: behavioral inhibition and emotional regulation represent the most complex components of executive function and typically require sustained external scaffolding during early childhood. Interpreted through Barkley's Executive Function Theory, these findings suggest that young learners continue to rely on adult-provided regulatory structures while internal self-regulation is still consolidating. From a Piagetian social development perspective, the results further indicate that executive function emerges through repeated social interaction, rule-governed activities, and guided participation within the family context. The presence of a significant yet moderate relationship between parental involvement and executive function skills underscores that while parental engagement is a crucial developmental catalyst, it is not the sole determinant of executive function development. Rather, executive function evolves through the dynamic interaction of cognitive maturation, social experience, and environmental scaffolding. By empirically demonstrating the protective and facilitative role of parental involvement even in the presence of socioeconomic and educational constraints, this study advances a more nuanced and developmentally

grounded understanding of early learning readiness and reinforces the view that executive function development in the early grades is a shared responsibility between families and educational institutions. Based on these findings, it is recommended that efforts to enhance executive function development be operationalized through a coordinated, family-centered, and developmentally responsive action plan that bridges home and school contexts. The proposed action plan emphasizes structured parent capacity-building initiatives that focus on evidence-based strategies for strengthening self-control, emotional regulation, sustained attention, and goal-directed behavior within the home environment. These initiatives should move beyond general appeals for parental involvement and instead provide parents with concrete, practical guidance on establishing consistent routines, modeling self-regulatory behaviors, using positive behavior supports, and gradually fostering learner autonomy. At the classroom level, teachers should integrate executive function-supportive practices into daily instruction, such as predictable schedules, clear task expectations, visual organizers, and scaffolded problem-solving activities, ensuring alignment between home-based and school-based routines. School administrators are encouraged to institutionalize regular parent-teacher dialogues, workshops, and feedback mechanisms that focus specifically on children's self-regulatory development, thereby promoting consistency in expectations and practices across environments. At the institutional and policy levels, executive function development should be explicitly embedded within early-grade education frameworks, parent engagement policies, and school readiness programs, supported by clear implementation guidelines, monitoring mechanisms, and sustained professional development for educators. As part of the action plan, continuous evaluation should be conducted to assess the effectiveness of parent-focused interventions and classroom strategies, allowing for iterative refinement based on learner outcomes. Furthermore, future research is recommended to adopt longitudinal and mixed-methods designs to examine how executive function skills develop over time and how parental involvement interacts with instructional practices, peer contexts, and individual learner characteristics. Advancing research, practice, and policy that deliberately foreground executive function as a foundational learning competency will support the development of holistic, equitable, and developmentally appropriate early education systems that promote learners' long-term academic success and adaptive functioning.

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