

Family Support, School Environment, and Peer Influence Affecting Cognitive Growth among Junior High School Students: A Diagnostic Research Design

Laila L. Sarino*

lailalica.sarino@hcdc.edu.ph

*Holy Cross of Davao – Graduate School, Davao City, 8000, Philippines
Department of Education, Davao City Division, 8000, Philippines*

Abstract

Low cognitive growth remains a significant concern in education. This study examined the contribution of family support, school environment, and peer influence to cognitive growth among junior high school students. A diagnostic research design was employed. A total of 150 students were selected using quota sampling. Data were analyzed using descriptive statistics, Pearson correlation, and multiple linear regression. The results revealed that the combined variables significantly contributed to cognitive growth ($R^2 = 0.338$). The findings support Sociocultural Theory, emphasizing the importance of social interaction in learning. Future studies are encouraged to explore additional variables to explain the remaining variance in cognitive growth.

Keywords: Family support; school environment; peer influence; cognitive growth; junior high school students; diagnostic research design

1. Main text

1. Introduction

The Problem and Its Setting

Slow cognitive growth among junior high school students has emerged as a significant concern in the global educational landscape, as reflected in international assessments and large-scale studies that monitor students' learning progress across countries. This remains evident in national and international academic performance indicators. For instance, studies in the United States have shown that many middle school students perform below proficiency levels in key cognitive domains (Reardon, 2021). Similarly, research conducted in Indonesia revealed that a considerable number of junior high school learners exhibit limited cognitive advancement based on standardized academic measures (Suryadarma et al., 2020). These patterns suggest that slow cognitive growth is not confined to a single context but is observed across diverse educational systems.

In the Philippine context, slow cognitive growth among junior high school students is also a pressing issue, as reflected in both national assessments and international benchmarks. The country's performance in global assessments has consistently shown that many Filipino learners fall below minimum proficiency levels in cognitive domains such as reading and mathematics (Schleicher, 2019). Local studies further indicate that a significant number of junior high school students demonstrate limited progression in higher-order thinking skills, highlighting concerns regarding their cognitive development (Bernardo, 2020). This situation underscores the need to closely examine the state of cognitive growth among learners within the Philippine educational system.

The persistence of slow cognitive growth among junior high school students carries serious consequences for both individual learners and the broader educational system. Students with slow cognitive development may experience difficulties in academic achievement, reduced readiness for higher education, and challenges in engaging with complex learning tasks (Hanushek & Woessmann, 2020). At a systemic level, this condition may contribute to lower overall educational quality, decreased competitiveness in the global knowledge economy, and constraints on national development (Schleicher, 2019). These outcomes highlight the urgency of addressing slow cognitive growth as a critical educational concern.

Significance of the Study

This study examines the impact of family support, school environment, and peer influence on cognitive growth among junior high school students regarding memory, attention, flexibility, self-perception and thinking. Closely related to the United Nations' Sustainable Development Goal (SDG) 4: Quality Education, this research focuses on the need for inclusive and caring support educational ecosystems that promote high-order thinking and lifelong learning. This also goes with the vision and mission of Holy Cross of Davao College, which focuses on the development of a vibrant community of learners- learners aligned with the teachings of Christ. A socially and environmentally focused account of the students' cognitive learning helps Social Studies teachers to inclusive, values-based, teaching aimed at independent learning, as well as the resource for cognitive Social Studies scholars and researchers who will work on teaching interventions aimed at cognitive, moral, and academic development to support the research formation of the socially engaged individual who will work actively towards a just and humane society.

Statement of the Problem

The study determined the significance of the contribution of family support, school environment, peer influence on cognitive growth among Junior high school learners.

Specifically, it will address the following questions:

1. To determine the level of Family Support, School Environment, Peer Influence and Cognitive Growth of the respondents.
2. To determine the significant relationship of Family Support, School Environment, Peer Influence to the Cognitive Growth of the respondents.
3. To determine the degree of influence of Family Support, School Environment, Peer Influence to the Cognitive Growth of the respondents.

Hypotheses

The null hypotheses were tested at a 0.05 level of significance

H₀₁: Family Support, School Environment, and Peer Influence do not significantly correlate with Cognitive Growth of the respondents.

H₀₂ Family Support, School Environment, and Peer Influence do not significantly influence Cognitive Growth of the respondents.

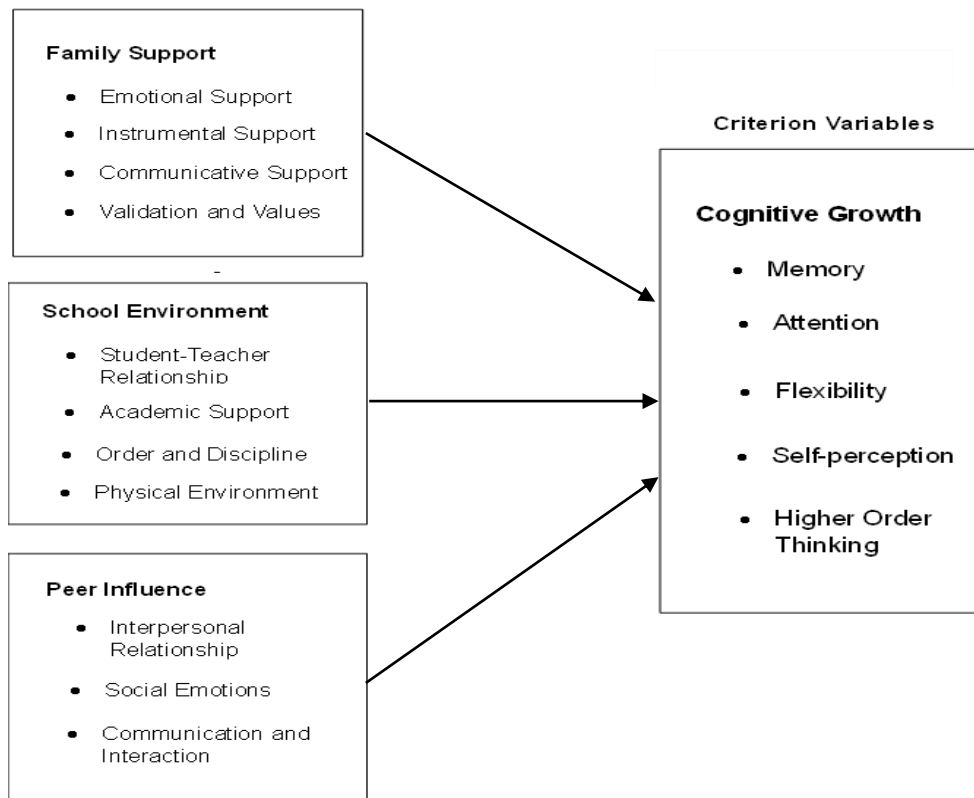
Theoretical Framework

Cognitive development is fundamentally shaped by social interaction and cultural context, and higher mental functions originate in social processes before becoming internalized by the individual. Vygotsky argued that learning is not an individual, isolated process, but is first experienced socially (interpsychological level) and then internalized individually (intrapsychological level). This means that interaction with more knowledgeable others and engagement in culturally mediated activities are essential to intellectual development (Vygotsky, L. S., 1978). (See Figure 1).

In this study, the family support variable indicated by emotional support, instrumental support, communicative support and validation and values (Julkunen and Greenglass, 1989) represents forms of culturally mediated support mentioned in the theory. Moreover, school environment variable indicated

by student-teacher relationship, academic support, order and discipline and physical environment (Zullig et al. 2015) relates to social interaction. Likewise, peer influence variable indicated by interpersonal relationship, social emotions and communication and interaction (Wei, 1998) is also associated with social interaction. Finally, cognitive growth variable indicated by memory, attention, flexibility, self-perception and higher order thinking (Indumathi and Ramakrishnan 2017) is linked with learning and intellectual development.

Figure 1. Conceptual Framework of the Study



2. Methodology

Presented in this chapter are the research design, locale of the study, sample and sampling technique, data gathering technique, data analysis technique and ethical standards.

Research Design

In this research, the diagnostic research design was used. It is a type of research that aims to identify and analyze the underlying causes of a specific problem by examining relationships among variables and providing a basis for solutions; it is applied when a problem has already been identified but its causes remain unclear, particularly in fields such as education, business, health, and social sciences where there is a need to develop appropriate interventions, and its advantages include identifying root causes, supporting evidence-based decision-making, enabling targeted solutions, improving problem-solving efficiency, and guiding policy and program improvement (Creswell & Creswell, 2018; Kothari, 2004; Sekaran & Bougie, R. 2016).

Research Locale

The study was conducted in three public junior high schools in Cluster 15, Davao City. These schools were chosen due to their geographic distribution and their representation of the city's educational landscape. They offered a diverse environment for investigating the cognitive growth of junior high school students. The study specifically examined how factors such as school environment, family support, and peer influence affected students' cognitive growth in these schools. The geographic diversity of the selected schools ensured that the findings captured a wide range of experiences and challenges within Davao City.

Sample and Sampling Technique

A total of 150 junior high school students from public secondary education institutions, specifically Cluster 15 schools in Davao City for School Year 2025–2026, were included in the study. The following inclusion criteria were used to make the sample as homogeneous as possible: First, the respondent must have been officially enrolled in a public secondary school during School Year 2025–2026. Second, the respondent must have been a junior high school student. The respondents were selected using quota sampling technique. It is a non-probability sampling technique in which participants were chosen to fill predetermined quotas based on specific characteristics, such as gender or age, ensuring that key subgroups were represented in the sample (Nikolopoulou, 2022).

Data Gathering Technique

The survey technique in gathering data was used in this study. The survey technique is a method of data gathering that involves collecting information from respondents through structured questionnaires or interviews to measure their attitudes, opinions, behaviors, or characteristics; it is applied when researchers need to obtain standardized and quantifiable data from a large population, particularly in fields such as education, social sciences, business, and health, and its advantages include efficiency in gathering data from many respondents, cost-effectiveness, ease of analysis, standardization of responses, and the ability to reach diverse or geographically dispersed groups (Creswell & Creswell, 2018; Fowler, 2014; Check & Schutt, 2012).

There were four adapted and modified survey questionnaires used in this study. The first questionnaire measured family support adapted from Julkunen and Greenglass (1989). It has 16 items. It obtained a Cronbach alpha value of 0.990. The second questionnaire measured school environment adapted from Zullig et al. (2015). It has 16 items. It obtained a Cronbach alpha of 0.927. The third questionnaire measured peer influence adapted from Wei (1998). It has 12 items. It obtained a Cronbach alpha of 0.908. The fourth questionnaire measured cognitive growth adapted from Indumathi and Ramakrishnan (2017). It has 20 items. It obtained a Cronbach alpha of 0.917.

The matrix displaying the scale, descriptive levels, and corresponding interpretations for each study variable specifically, family support, school environment, peer influence, and cognitive growth among junior school students.

Mean Range	Level	Family support	School Environment	Peer Influence	Cognitive Growth
4.20 – 5.00	Very high	Very strong	Excellent	Very strong	Excellent
3.40 – 4.19	High	Strong	Very good	Strong	Very good
2.60 – 3.39	Moderate	Moderately weak	Good	Moderately weak	Good
1.80 – 2.59	Low	Weak	Poor	Weak	Poor
1.00 – 1.79	Very Low	Very weak	Very poor	Very weak	Very poor

Table 2. Standard Deviation Value Ranges and Interpretation

Range	Description	Interpretation
SD $\leq$ 0.50	High consistent responses	Strong and uniform perception
SD = 0.51 - 1.00	Moderate consistent responses	Acceptable consistency
SD = 1.01 - 1.50	Low consistent responses	Differing views or experiences
SD > 1.50	Very low consistent responses	High variability and lack of consensus

In this study, the significance of the correlation is tested at a 0.05 confidence level. The following scheme is used as the standard for interpretation for the r-value:

Computed <i>r</i>	Descriptive Interpretation
+/- 1.00	Very High Correlation
Between +/- 0.75 - +/- 0.99	High Correlation
Between +/- 0.51 - +/- 0.74	Moderately High Correlation
Between +/- 0.31 - +/- 0.50	Moderately Low Correlation
Between +/- 0.01 - +/- 0.30	Low Correlation
0.00	No Correlation

Data Analysis Technique

There are three data analysis techniques used in this study. These are descriptive analysis, correlation analysis and multiple linear regression analysis.

Descriptive data analysis is the process of organizing, summarizing, and presenting data using statistical measures such as means and standard deviations to describe the characteristics of a dataset; it is applied when researchers need to clearly present patterns, trends, and distributions, particularly in the initial stage of quantitative research across fields like education, social sciences, business, and health, and its advantages include simplifying large data sets, identifying patterns and relationships, providing a clear basis for interpretation, supporting decision-making, and serving as a foundation for further statistical analysis (Creswell & Creswell, 2018; Field, 2018; Gravetter & Wallnau, 2017).

Correlational data analysis is a statistical method used to examine the strength and direction of the relationship between two or more variables without manipulating them; it is applied when researchers aim to determine whether variables are related, predict one variable from another, or study variables that cannot be ethically or practically manipulated, particularly in fields like education, psychology, business, and health, and its advantages include identifying the strength and direction of relationships, enabling prediction, allowing study of non-manipulable variables, providing a basis for further research, and being relatively easy to compute and interpret. The Pearson *r* is the statistical treatment used in determining the strength of the correlation (Creswell & Creswell, 2018; Field, 2018; Schober, Boer, & Schwarte, 2018).

Multiple linear regression analysis is a statistical method used to examine the relationship between one dependent variable and two or more independent variables, allowing researchers to predict outcomes and assess the relative contribution of each predictor; it is applied when there is a need to explain or predict a dependent variable using multiple quantitative factors, particularly in fields such as education, social sciences, health, business, and economics, and its advantages include enabling prediction, evaluating the influence of each independent variable, accounting for combined effects of predictors, supporting decision-making and policy planning, and providing a quantitative basis for understanding complex relationships. The Beta coefficient is used as statistical treatment (Cohen, Cohen, West, & Aiken, 2013; Field, 2018; Tabachnick & Fidell, 2019).

Ethical Considerations

Informed consent is the process of voluntarily agreeing to participate in a study after being fully informed of its details. The purpose and benefits of this research were clearly explained to the respondents. They were given the opportunity to ask questions and clarify any doubts. Likewise, they were assured that their participation was entirely voluntary and that they could withdraw from the study at any time without any negative consequences. The researcher obtained the respondents' consent through signed forms, and for minors, consent was secured from their parents or guardians. Similarly, confidentiality involves protecting respondents' personal information by using pseudonyms or codes, securely storing data, limiting access to authorized individuals, and reporting results without revealing identities. The identities of the respondents remain anonymous in any reports or publications resulting from the study. Moreover, respect protocol was ensured by obtaining permission from the Department of Education before conducting the study. Finally, this research obtained the approval of the Society for Moral Integrity and Legal Ethics (SMILE), the official ethics review body of the institution where this study was conducted.

3. Results and Discussion

Results indicated that all variables were rated at a high level. Correlation analysis showed significant positive relationships between family support, school environment, peer influence, and cognitive growth. Regression analysis revealed that family support and peer influence significantly predicted cognitive growth, while school environment was not a significant predictor. The model explained 33.8% of the variance in cognitive growth.

3.1 Table 1 is the descriptive table. It contains the variables involved in the study, namely: family support indicated by emotional support, instrumental support, communicative support, and validation and values; school environment indicated by student-teacher relationship, academic support, order and discipline and physical environment; peer influence indicated by interpersonal relationship, social emotions, communication and interaction; and cognitive growth indicated by memory, attention, cognitive flexibility, self-perception of cognitive ability, and higher order thinking. It also includes the number of respondents, computed means, standard deviations, and the corresponding descriptive interpretations.

Table 1. Descriptive Statistics of Variables

Variables	SD	Mean	Descriptive level
Family Support	0.60	3.10	High
Emotional Support	0.61	3.18	High
Instrumental Support	0.69	2.93	High
Communicative Support	0.74	3.00	High
Validation and Values	0.65	3.29	Very High
School Environment	0.49	3.15	High
Student-Teacher Relationship	0.57	3.07	High
Academic Support	0.61	3.18	High
Order and discipline	0.58	3.26	Very High
Physical Environment	0.51	3.08	High
Peer Influence	0.44	3.09	High
Interpersonal Relationship	0.65	3.18	High
Social Emotions	0.58	2.89	High
Communication And Interaction	0.56	3.13	High
Cognitive Growth	0.40	2.99	High
Memory	0.45	2.96	High
Attention	0.51	2.99	High
Cognitive Flexibility	0.48	3.03	High
Self-Perception of Cognitive Ability	0.60	2.91	High

1.00-1.75 Very Low, 1.76-2.50 Low, 2.51-3.25 High, 3.26-4.00 Very High

The table specifically shows that family support variable obtained a mean of 3.10, described as moderate level. It indicates that the family support of the respondents is moderately weak. One of its indicators is described as very high while the rest are described as high. The corresponding standard deviation of 0.60 indicates moderately consistent responses. Likewise, school environment variable obtained a mean of 3.15, described as moderate. It indicates that the school environment of the respondents is good. One of its indicators is described as very high while the rest are described as high. The corresponding standard deviation of 0.49 indicates high consistent response. Additionally, peer influence variable obtained a mean of 3.09, described as moderate. It indicates that the peer influence of the respondents is moderately weak. All its indicators are described as high. The corresponding standard deviation of 0.44 indicates high consistent response. Finally, the cognitive growth variable obtained a mean of 2.99, described as moderate. This indicates that the cognitive growth of the respondents is good. All its indicators are described as high. The corresponding standard deviation of 0.40 indicates high consistent response.

All variables namely family support, school environment, peer influence, and cognitive growth—are described at a moderate level, indicating generally favorable but not strong conditions among respondents. In comparison, school environment appears relatively stronger, while family support and peer influence are somewhat weaker, though responses across all variables remain consistently aligned.

3.2 Table 2 is the correlation table. It presents the determinants and criterion variables. Likewise, the table also shows the r-value to explain the strength of the correlation, the p-value to describe the level of significance based on the 0.05 degree of confidence, and the corresponding interpretation.

Table 2. Correlation Between Variables

Variables	Cognitive Growth		
	r-value	p-value	Interpretation
Family Support	0.406	0.000	Positive, Moderate and Significant Relationship
School Environment	0.511	0.000	Positive, Moderate and Significant Relationship
Peer Influence	0.532	0.000	Positive, Moderate and Significant Relationship

Significance level: 0.05

The table specifically shows that the correlation between family support and cognitive growth obtained a p-value of 0.000 which is less than 0.05 degree of confidence. Hence, the null hypothesis was rejected. It indicates that the correlation between family support and cognitive growth is significant. The corresponding r-value of 0.406 indicates that the correlation is positively moderate. This implies that for every unit change in family support there is a corresponding unit change in cognitive growth. Moreover, the correlation between school environment and cognitive growth obtained a p-value of 0.000 degree of confidence which is less than 0.05 degree of confidence. Hence, the null hypothesis was rejected. It indicates that the correlation between school environment and cognitive growth is significant. The corresponding r-value of 0.511 indicates that the correlation is positively moderate. This implies that for every unit change in school environment there is a corresponding unit change in cognitive growth. Lastly, the correlation between peer influence and cognitive growth obtained a p-value of 0.000 which is less than 0.05 degree of confidence. Hence, the null hypothesis was rejected. It indicates that the correlation between peer influence and cognitive growth is significant. The corresponding r-value of 0.532 indicates that the correlation is positively moderate. This implies that for every unit change in peer influence is a corresponding unit change in cognitive growth.

All three variables namely: family support, school environment, and peer influence show a significant positive relationship with cognitive growth, indicating that improvements in each are associated with corresponding increases in cognitive development. Among them, peer influence demonstrates the strongest relationship, followed by school environment, while family support shows the weakest, though still moderate, association.

3.3 Table 3 presents the regression analysis. It includes the unstandardized beta, beta coefficient, standard error, t-value, p-value, and the corresponding interpretation.

Table 3. Regression Analysis

Predictors	Cognitive Growth					Interpretation
	Estimate	Stand. Estimate	SE	t	sig.	
Intercept	1.221		0.207	5.89	0.000	
Family Support	0.133	0.197	0.052	2.57	0.011	Influence is Significant
School Environment	0.141	0.170	0.092	1.54	0.126	Influence is not Significant
Peer Influence	0.296	0.321	0.098	3.02	0.003	Influence is Significant
R= 0.581, R ² = 0.338, Adjusted R ² =0.324, F=24.8, Sig.=0.000						

The table specifically shows that the influence of family support on cognitive growth obtains a Beta coefficient of 0.133. The corresponding p-value of 0.011, which is less than 0.05 degree of confidence, hence the null hypothesis was rejected. It indicates that the influence of family support on cognitive growth is significant. The strength of the influence is weak. This implies that for every unit increase in family support, there is a corresponding 0.133 unit increase in cognitive growth.

Moreover, the influence of school environment on cognitive growth obtains a Beta coefficient of 0.141. The corresponding p-value of 0.126, which is less than 0.05 degree of confidence, hence the null hypothesis was rejected. It indicates that the influence of school environment on cognitive growth is significant. The strength of the influence is weak. This implies that for every unit increase in school environment, there is a corresponding 0.141 unit increase in cognitive growth

Finally, the influence of peer influence on cognitive growth obtains a beta coefficient of 0.296. The corresponding p-value of 0.003, which is less than 0.05 degree of confidence, hence the null hypothesis was rejected. It indicates that the influence of peer on cognitive growth is significant. The strength of the influence is weak. This implies that for every unit increase in peer influence, there is a corresponding 0.296 unit increase in cognitive growth.

The R-squared value of 0.338 indicates that the strength of the combined contribution of the determinant variables is moderate. All three variables show a significant but weak influence on cognitive growth. Among them, peer influence demonstrates the strongest effect, followed by school environment and family support, which exhibit relatively weaker contributions.

Summary of Findings

Based on statistical result, it was specifically found that:

1. Family Support, School Environment, and Peer Influence significantly correlate with Cognitive Growth of the respondents.
2. Family Support, School Environment, and Peer Influence significantly influence Cognitive Growth of the respondents.

4. Conclusion

The findings affirm that family support, school environment, and peer influence have a moderately significant contribution (33.8%) to cognitive growth, supporting the Sociocultural Theory that emphasizes the role of social interaction in intellectual development.

5. Recommendations

Future studies should explore additional variables through qualitative research to explain the remaining 66.2% of cognitive growth variance, while educational leaders are encouraged to implement programs that strengthen family support, school environment, and peer influence.

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