



COGNITIVE PROCESSES, ENVIRONMENTAL FACTORS, AND SOCIAL INTERACTIONS AS DETERMINANTS OF LEARNING BEHAVIOR OF STUDENTS FROM BROKEN HOMES

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Abstract:

Poor learning behavior among students from broken homes is a global concern. This study aimed to determine the significance of cognitive processes, environmental factors, and social interactions as determinants of learning behavior among junior high school students from broken homes. Using a diagnostic research design, 150 samples were collected through quota sampling. Findings reveal that only environmental factors influence the criterion, partially supporting Social Learning Theory. Future studies may explore other variables generated from exploratory research and promote supportive learning environments.

Keywords: cognitive processes, environmental factors, social interactions, determinants of learning behavior, students from broken homes

1. Introduction

Poor learning behavior among students from broken homes has emerged as a concerning issue in the global educational landscape. In many parts of the world, students who come from disrupted family structures are frequently observed to demonstrate poor learning behavior within school settings (Bernardi & Boertien, 2023). International educational studies likewise emphasize that students' learning behavior is an important indicator of their overall educational outcomes, making the situation of students from broken homes a matter of global concern (Gu *et al.*, 2024).

In Nigeria, research findings reveal that students from separated or disrupted families often display poor learning behavior (Lawal *et al.*, 2024). Similarly, studies conducted in China highlight disparities in students' learning behaviors (Gu *et al.*, 2024). In Sri Lanka, educational research also reports that learners from disrupted families

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commonly exhibit lower levels of learning behavior in school-based learning tasks (Perera & Abeysinghe, 2023).

Within the Philippine context, poor learning behavior among students from broken homes has also gained attention in educational research. Filipino students from disrupted family backgrounds have been observed to demonstrate poor learning behavior in classroom activities (Pamisa & Cabigas, 2025).

Poor learning behavior among junior high school students can lead to several negative academic and developmental outcomes. Studies indicate that weak learning behaviors such as low engagement, limited participation in learning tasks, and ineffective study habits are associated with lower academic achievement and reduced academic satisfaction among students (Patierrez, 2024). Furthermore, poor learning behavior may result in reduced learning engagement, weak academic persistence, and difficulties in maintaining consistent academic progress, which can negatively affect students' overall educational development (An *et al.*, 2024). These consequences triggered the conduct of the study.

2. Significance of the Study

This study seeks to provide deeper insights into strategies that can support students from broken homes in improving their learning behavior and academic engagement. Anchored on Sustainable Development Goal 4 (Quality Education), the study highlights the importance of inclusive and supportive learning environments where all students can succeed regardless of their family background. The findings may benefit the respondents by helping them recognize factors that influence their learning behavior and develop resilience in school. For Social Studies teachers, the study offers insights that can guide the development of responsive teaching strategies. Moreover, the study supports the vision and mission of Holy Cross of Davao College by contributing to the formation of competent, compassionate, and socially responsible learners through research that promotes inclusive and meaningful education. It may also serve as a reference for future studies and for the development of interventions addressing the academic challenges of students from broken homes.

3. Statement of the Problem

This study aimed to determine the significance of cognitive processes, environmental factors, and social interactions as determinants of the learning behavior of students from broken homes. Specifically, it achieved the following objectives:

- 1) To describe the levels of students' cognitive processes in terms of teacher-student relationships, peer support for learning, future goals and aspirations, and family support for learning; environmental factors in terms of school environment, classroom environment, playground environment, home environment, and society environment; and social interactions in terms of student-teacher

interaction, student-students` interaction, and student-parent interaction; as determinants of learning behavior in terms of goal-setting, responsibility, motivation, and self-discipline among the respondents.

- 2) To determine the significance of the correlation of cognitive processes, environmental factors, and social interactions, on the learning behavior of the respondents.
- 3) To determine the significance of the individual and combined degree of influence of cognitive processes, environmental factors, and social interactions as determinants of the learning behavior.

3.1 Hypotheses

The following null hypothesis were tested at a significance level of 0.05:

H₀₁: Cognitive processes, environmental factors, social interactions, and learning behavior are not correlated.

H₀₂: Cognitive processes, environmental factors, and social interactions as individual and combined determinants, do not significantly influence the learning behavior.

4. Theoretical and Conceptual Framework

Social learning theory, developed by Albert Bandura (1977), posits that people learn from one another through observation, imitation, and modeling. This theory emphasizes the importance of cognitive processes, environmental factors and social interactions in shaping behavior. Social learning theory is increasingly cited as an essential component of the promotion of desirable behavioral change. It considers how environmental and cognitive factors interact to influence human learning. In this study, all the variables highlighted in the SLT Theory were utilised.

In this study, both the factors of shaping the behavior, and the behavior per se highlighted in the theory are all considered.

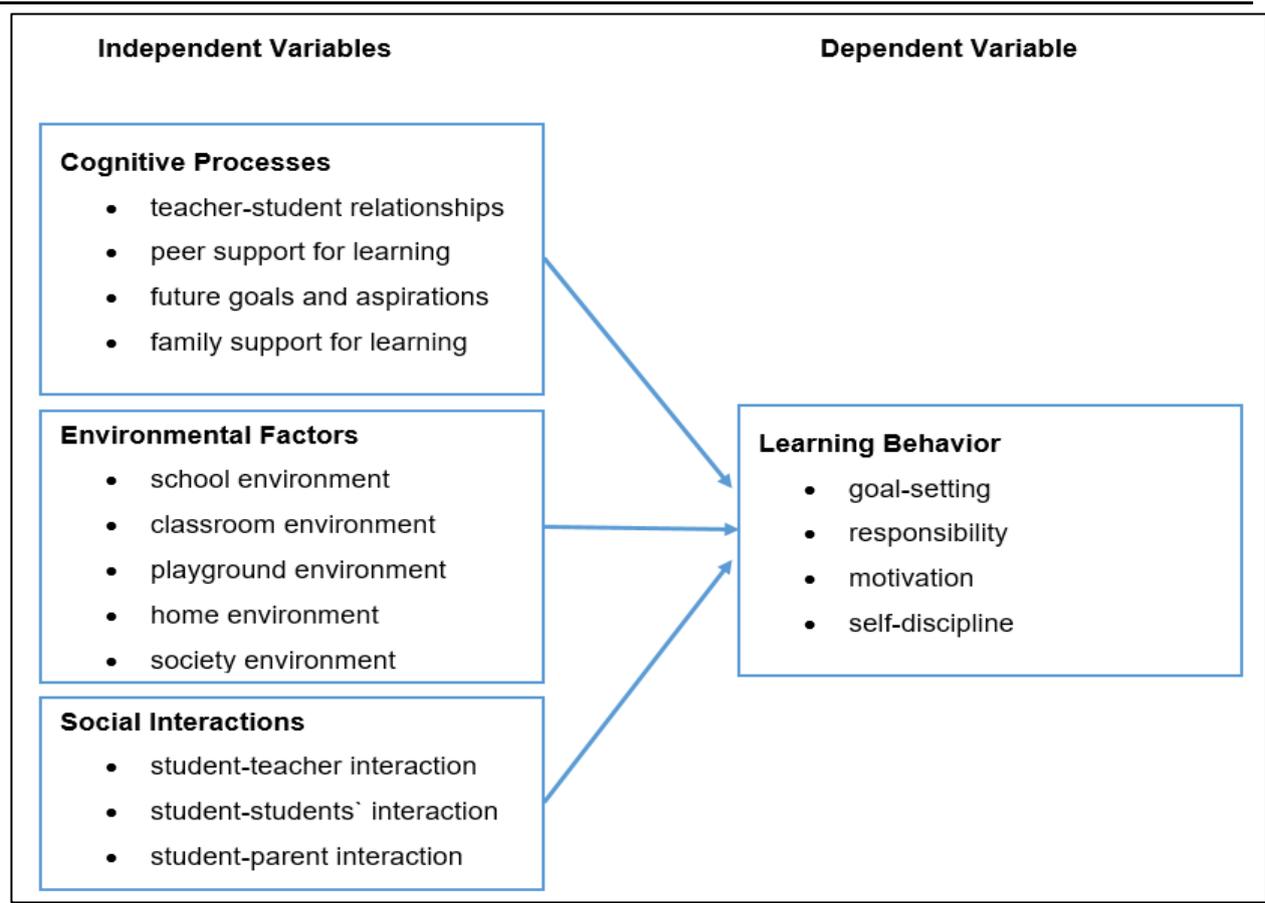


Figure 1: Conceptual Framework of the Study

5. Methodology

In this chapter presents the research design, locale of the study, sample and sampling technique, data gathering technique, data analysis technique, and the ethical considerations.

5.1 Research Design

The study utilized the diagnostic research design. Diagnostic research design is a type of research that aims to identify, analyze, and understand the nature of a specific problem in order to determine possible solutions or improvements. It focuses on examining existing conditions, patterns, or situations to provide a clear understanding of a particular issue within a specific context (Kumar, 2023). Diagnostic research is applied when a researcher intends to investigate an existing problem and understand its characteristics before recommending appropriate actions or interventions (Creswell & Creswell, 2023).

5.2 Locale of the Study

The study was conducted in selected junior high schools in the municipality of Sulop, Davao del Sur, Philippines. The choice of municipality is strategic, aiming to provide a localized understanding of the academic performance challenges faced by junior high school students from broken homes. The selected schools were chosen due to the increasing number of students from broken homes displayed poor academic performances. Sulop, Davao del Sur, is a municipality where education plays an important role in community development, particularly through the implementation of the Junior High School program under the Department of Education (Philippines). Public secondary schools in the area offer Grades 7 to 10 following the K to 12 curriculum, which focuses on strengthening students' knowledge, skills, values, and critical thinking to prepare them for Senior High School and future career pathways. The schools promote learner-centered instruction, inclusive learning environments, and community-based educational practices that support the holistic development and academic engagement of junior high school students.

5.3 Sample and Sampling Technique

The respondents of the study were the 150 junior high school students who came from broken homes. Some of these numbers are minors, and others are adults. The researcher employed *quota sampling*, a non-probability sampling technique used in research to ensure that the final sample reflects the characteristics of the population in specific proportions. This method ensures that important subgroups of the population are represented in the sample, although the selection of respondents within each group is not random (Wang, 2024). Hence, a total of 150 students served as the respondents, as this number is considered sufficient to represent the group and provide reliable data for statistical analysis.

5.4 Data Gathering Technique

This study utilized survey questionnaire technique. The survey questionnaire technique is a data-gathering method in which a structured set of questions is administered to respondents to systematically collect information about their characteristics, opinions, behaviors, or experiences for analysis in research studies (BetterEvaluation, 2026).

The study utilized four adapted and modified questionnaires to gather data. The first instrument was adapted from the Cognitive Processes Questionnaire developed by Appleton *et al.* (2006), consisting of twenty-two items. Its Cronbach's alpha result is 0.852. The second instrument was adapted from Iqbal *et al.* (2024), consisting of twenty-four items assessing the environmental factors. Its Cronbach's alpha result is 0.910. The third instrument was the adapted social interactions questionnaire (SIQ) of Chukwu, M. A. (2025), consisting of fifteen items. Its Cronbach's alpha result is 0.781. Lastly, the learning behavior instrument was adapted from Bhise *et al.* (2024), consisting of sixteen items. Its Cronbach's alpha result is 0.773. No items were deleted, as they all met the acceptable reliability standards.

5.5 Data Analysis Technique

In this research, descriptive analysis, correlation analysis, and multiple regression analyses were utilized to examine and interpret data.

Descriptive analysis is used to summarize and describe the main features of a dataset, providing an overview of trends and patterns in the data (Trochim & Donnelly, 2021). The mean and standard deviation are statistical tools utilized under descriptive analysis. Correlation analysis is a statistical technique used to determine the strength and direction of the relationship between two or more variables, helping to understand whether changes in one variable are associated with changes in another variable, indicating whether the relationship is positive, negative, or nonexistent (Kim, 2024) under correlation analysis, the Pearson R correlation is the statistical tool used in this analysis. Lastly, multiple regression analysis is a statistical technique used to examine the relationship between one dependent variable and two or more independent variables. It allows researchers to determine how each predictor variable influences the outcome variable and to estimate the extent to which the independent variables collectively explain variations in the dependent variable (Kim, 2024). It highlights the beta value range as a statistical tool to describe the strength of the influence.

The matrix below details the mean range, descriptive levels, and the corresponding interpretations assigned to each variable included in this study. The table is the basis for describing the levels of cognitive processes, environmental factors, social interactions and the learning behavior.

Scale	Descriptive Level	Cognitive Processes	Environmental Factors	Social Interactions	Learning Behavior
3.26-4.00	Very High	Very Good	Very Strong	Very Good	Very Good
2.51-3.25	High	Good	Strong	Good	Good
1.76-2.50	Low	Poor	Weak	Poor	Poor
1.00-1.75	Very Low	Very Poor	Very Weak	Very Poor	Very Poor

The following is the Standard Deviation Value Interpretation:

Range	Level of Variability	Interpretation
1.50 and above	High	Widely spread, varied perceptions
1.00-1.49	Moderate	Moderate differences
0.50-0.99	Low	Relatively consistent with minimal differences
0.00-0.49	Very Low	Highly consistent with a tight clustering around the mean

Moreover, the correlation analysis utilized the Pearson Product-Moment Correlation Coefficient to assess the link between cognitive processes, environmental factors, social interactions, and learning behavior of students from broken homes. To interpret the r-value, this study used the scale proposed by Guilford (1956), as outlined below:

Computed r	Descriptive Interpretation
+/- 1.00	Perfect 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

Lastly, multiple linear regression was utilized to test the significance of cognitive processes, environmental factors, and social interactions on the learning behavior of students from broken homes. To interpret the Beta coefficient strength, the Cohen (1988) and Hair *et al.* (2019) scale was used.

β Values Range	Strength of Influence
+/- 0.00 - +/- 0.09	Very Weak
+/- 0.10 - +/- 0.29	Weak
+/- 0.30 - +/- 0.49	Moderate
+/- 0.50 - +/- 0.69	Strong
+/- 0.70 and above	Very Strong

5.6 Ethical Considerations

The study adhered to strict ethical standards throughout its conduct. Permission to conduct the research was obtained from the Department of Education (Philippines), and the researcher coordinated with the students' teachers to facilitate the study. Since the participants were junior high school students, many of whom were minors, assent was obtained from the students, and informed consent was secured from their parents or legal guardians. The purpose and procedures of the study were clearly explained to both the guardians and the student participants to ensure voluntary participation. Teachers also assisted in explaining the study to students coming from broken homes. Confidentiality was maintained by anonymizing responses and safeguarding all data. The research instrument was subjected to expert validation and reliability testing. Finally, the research proposal was approved by the Society for Moral Integrity and Legal Ethics (SMILE), demonstrating full compliance with ethical, legal, and moral principles in conducting research involving minors.

6. Results

The descriptive, correlation, and regression analysis results are presented. Likewise, the summary of the findings is also presented.

6.1 Descriptive Results

Table 1 is the descriptive table. It contains the variables involved in the study, namely: cognitive processes, environmental factors, social interactions, and learning behavior, and their corresponding indicators. It also includes the number of respondents, standard deviation, mean, and the corresponding descriptive interpretations.

Table 1: Descriptive Analysis (N = 150)

Variables	SD	Mean	Descriptive Level
Cognitive Processes	0.33	3.25	Very High
Teacher-student relationships	0.44	3.21	High
Peer support for learning	0.48	3.07	High
Future goals and aspirations	0.40	3.56	Very High
Family support for learning	0.55	3.16	High
Environmental Factors	0.34	3.24	High
School environment	0.40	3.40	Very High
Classroom environment	0.40	3.20	Very High
Playground environment	0.42	3.27	High
Home environment	0.54	3.18	High
Society environment	0.45	3.13	Very High
Social Interactions	0.42	2.91	High
Student-teacher interaction	0.42	3.15	High
Student-students interaction	0.47	3.04	High
Student-parent interaction	0.73	2.55	High
Learning Behavior	0.34	3.08	High
Goal-setting	0.47	3.12	High
Responsibility	0.40	2.90	High
Motivation	0.44	3.23	High
Self-discipline	0.44	3.06	High

Table 1 specifically shows that the cognitive processes variable obtained a mean of 3.25, described as very high. It indicates that the cognitive processes of students from broken homes were good. One of its indicators is described as very high, and the rest are described as high. The standard deviation obtained is 0.33, which indicates that the variability of the responses is very low. It denotes that the responses are highly consistent with a tight clustering around the mean. Likewise, the environmental factors variable obtained a mean of 3.24, described as high. It indicates that the environmental factors were strong. Three of its indicators are described as very high, and the rest are described as high. The standard deviation obtained, 0.34, indicates that the variability of the responses is very low. It signifies that the responses are highly consistent with a tight clustering around the mean. Moreover, the social interactions variable obtained a mean of 2.91, described as high. It indicates that the social interactions were good. All its indicators are described as high. The standard deviation obtained is 0.42, which indicates that the variability of the responses is very low. It denotes that the responses are highly consistent with a tight clustering around the mean. It denotes that the responses are highly consistent with a tight clustering around the mean. Lastly, the learning behavior

variable obtained a mean of 3.08, described as high. It indicates that learning behavior was good. All its indicators are described as high. The standard deviation obtained is 0.34, which indicates that the variability of the responses is very low. It denotes that the responses are highly consistent with a tight clustering around the mean.

The findings show that cognitive processes obtained the highest descriptive level and were interpreted as very strong, while environmental factors, social interactions, and learning behavior were interpreted as strong or good, indicating positive conditions among the students.

6.2 Correlation Analysis

Table 2 is the correlation table. It contains the predictive and criterion variables. Likewise, the table also shows the r-value, the p-value, the decision on the null hypothesis, and the corresponding interpretation.

Table 2: Correlation Level

Variables				Learning Behavior Interpretation
	r-value	p-value	Decision on Ho	
Cognitive Processes	0.396	0.000	Reject	Positive, Moderate and Significant
Environmental Factors	0.535	0.000	Reject	Positive, Moderate and Significant
Social Interactions	0.424	0.000	Reject	Positive, Moderate and Significant

Table 2 specifically presents that the correlation between cognitive processes and learning behavior obtained a p-value of 0.000, which is less than a 0.05 degree of confidence, hence the null hypothesis was rejected. It indicates that the correlation between cognitive processes and learning behavior is significant. With an r-value of 0.396, it is indicated that the correlation of these variables is moderately low. Moreover, the correlation between environmental factors and learning behavior obtained a p-value of 0.000, which is less than a 0.05 degree of confidence, hence the null hypothesis was rejected. It indicates that the correlation between environmental factors and learning behavior is significant. An r-value of 0.535 indicates that the correlation of these variables is moderately positive and moderately high. Lastly, the correlation between social interactions and learning behavior obtained a p-value of 0.000, which is less than a 0.05 degree of confidence, hence the null hypothesis was rejected. It indicates that the correlation between social interactions and learning behavior is significant. With an r-value of 0.424, it is signified that the correlation of these variables is moderately low.

The findings show that cognitive processes, environmental factors, and social interactions are all significantly related to learning behavior, indicating that each variable has a meaningful association with how students demonstrate their learning behavior. Among these variables, environmental factors show a stronger relationship with learning behavior, while cognitive processes and social interactions demonstrate comparatively lower but still positive relationships.

6.3 Regression Analysis

Table 3 presents the regression analysis. It examined the influence of the predictive variables on the criterion variable. Likewise, it also contains the unstandardized beta coefficient, standard error, standardized beta coefficient, including t-value, p-value, decision on H_0 , and the corresponding interpretation. Finally, it shows the R, the R-squared, the Adjusted R-squared, F value.

Table 3: Regression Table

Determinant Variables	Learning Behavior						Decision on H_0	Interpretation
	Estimate	Stand. Estimate	SE	t	p			
Intercept	1.238		0.249	4.981	0.000			
Cognitive Processes	0.056	0.055	0.094	0.594	0.554	Fail to Reject H_0	Not Significant	
Environmental Factors	0.410	0.412	0.100	4.112	0.000	Reject H_0	Significant	
Social Interactions	0.114	0.142	0.072	1.585	0.115	Fail to Reject H_0	Not Significant	

Note: R= 0.550, R²= 0.303, Adjusted R²=0.288, F=21.1, Sig.=0.000

Table 3 specifically shows that the cognitive processes variable obtained a standardized beta coefficient of .055, indicating its influence on the learning behavior as a criterion. With the p-value of 0.554 which is greater than 0.05 degree of confidence hence the hypothesis was accepted. It indicates that the influence of the cognitive processes variable is not significant. This implies that for every unit increase in cognitive processes, there is no corresponding unit change in learning behavior. Moreover, the environmental factors variable obtained a standardized beta coefficient of .412, indicating its influence on the learning behavior as a criterion. With a p-value of 0.000, which is less than 0.05 degree of confidence, the null hypothesis was rejected. It indicates that the influence of environmental factors is significant. This implies that for every unit increase in environmental factors, there is a corresponding 0.412 unit increase in the criterion. Lastly, the social interactions obtained a standardized beta coefficient of 0.142, indicating their influence on the learning behavior. With a p-value of 0.115, which is greater than 0.05 degree of confidence, the hypothesis was accepted. It indicates that the influence of social interactions is not significant. This implies that for every unit increase in social interactions, there is no corresponding unit change in the criterion.

With an extracted R-squared value of 0.303, with a corresponding p-value of 0.000, this indicates that cognitive processes, environmental factors, and social interaction variables combined significantly explains 30.3% variance in the learning behavior.

The findings show that environmental factors demonstrate the strongest and most meaningful influence on learning behavior. In contrast, cognitive processes and social interactions show comparatively weaker influences, suggesting that these variables do not substantially predict students' learning behavior when examined alongside environmental factors.

6.4 Summary of Findings

Based on the analyses conducted, the study established that:

- 1) Cognitive processes, environmental factors, and social interactions significantly correlate with learning behavior.
- 2) Cognitive processes, environmental factors, and social interactions together significantly influence learning behavior; individually, the second factor significantly affects the criterion, while the latter does not.

7. Discussion

This chapter presents the correlation and regression analysis results, conclusion and recommendations of the study, highlighting previous assertions which either support or deny the given findings.

7.1 Correlation between Cognitive Processes and Learning Behavior

The results show a significant correlation between cognitive processes and learning behavior among students from broken homes. This finding supports the claim of Sukor *et al.* (2021), stating that cognitive processes were found to be positively correlated with learning behavior in a fairly significant way. Similarly, this current finding affirms the study of Sirunyan *et al.* (2020), asserting that students who exhibit high levels of cognitive processes at school are more likely to achieve academic success, have a greater sense of connection with their school, and have a more favourable sense of social-emotional wellbeing.

On the contrary, this current finding contradicts Gao *et al.* (2020), stating that learning behavior is a multidimensional construct influenced by emotional, social, and environmental components, suggesting that cognitive processes alone may not strongly determine students' learning behavior. The study conducted by Gao *et al.* (2020) involved 29 samples, while the samples included in this current study are 150.

7.2 Correlation between Environmental Factors and Learning Behavior

The results show a significant correlation between environmental factors and learning behavior. This finding supports the study of Hinkey *et al.* (2020), stating that the environment plays a pivotal role in shaping children's attitudes, influencing their thoughts, feelings, and learning behaviors. It emphasized that high-quality learning environments are strongly associated with academic achievement and positive student behavior. Likewise, this current finding agrees with the study of Sousa *et al.* (2021), which mentioned that environmental factors positively impacted students' environmental knowledge, attitudes, and behaviors.

However, the current findings stating that environmental factors and learning behavior significantly correlated disagree with the study of Liu *et al.* (2024), mentioned that children adopt socially desirable environmental values by observing "essential others" like parents. If this observation is inconsistent due to household transitions,

children are less likely to internalize environmental norms. The study conducted by Liu *et al.* (2024) involved 25 samples, while the current study involved 150.

7.3 Correlation between Social Interactions and Learning Behavior

The results show a significant correlation between social interactions and learning behavior. This finding agrees with the claim of Johnson and Johnson (2019), asserting that students in cooperative learning groups performed significantly better academically, showed increased motivation, demonstrated better learning behavior, and information retention. Likewise, this current finding supports the claim of Spadofora *et al.* (2019), asserting that by associating with friends who have positive attitudes towards school, youth may enhance their own satisfaction with school.

On the other hand, this current finding stating that social interactions and learning behavior significantly correlated, opposes Quansah *et al.* (2023), stating that students facing household instability may experience heightened anxiety, which is negatively correlated with the capacity to engage in proactive social behaviors. The study conducted by Quansah *et al.* (2023) involved 8 samples, while the samples included in this study are 150.

7.4 Cognitive Processes Influence Learning Behavior

The results show that cognitive processes do not significantly influence learning behavior. This finding affirms the study of Lei *et al.* (2018), stating that the relationship between cognitive engagement and academic outcomes can sometimes be weak or inconsistent, indicating that cognitive processes alone may not strongly influence students' behavioral participation in learning activities. Similarly, this current finding agrees with the study of Ricks *et al.* (2022), mentioned that, cognitive engagement was not a significant direct predictor of academic performance, while behavioral engagement demonstrated a stronger predictive relationship with student outcomes.

Conversely, this current finding, stating that cognitive processes do not significantly influence learning behavior, refutes the study of Barlow & Brown (2020), stating that students' cognitive involvement in learning activities is strongly connected with meaningful learning experiences and behavioral participation in classroom tasks, highlighting the important role of cognitive processes in shaping learning behavior. The study conducted by Barlow & Brown (2020), involved 19 samples, while the current study included 150 respondents.

7.5 Environmental Factors Influence Learning Behavior

The results show that environmental factors significantly influence learning behavior. This finding supports the claim of Hinduja & Patchin (2021), stating that a conducive and supportive environment positively affects students' learning behaviors. Likewise, this current finding affirms the study of Molina-Solana *et al.* (2023), stated that classroom environmental factors such as physical conditions, learning resources, and overall school climate influence students' learning behavior.

In contrast, the findings stating that environmental factors significantly influence learning behavior, disagrees with the study of Muñoz-Garcia & Villene-Martinez (2021), stating that behavioral participation in learning may depend more on internal learning processes rather than environmental conditions. The study conducted by Muñoz-Garcia & Villene-Martinez (2021) involved 87 samples, while the respondents included in this current study are 150.

7.6 Social Interactions Influence Learning Behavior

The results show that social interactions do not significantly influence learning behavior. This finding supports the study of Korkmaz & Toraman (2023), who mentioned that interaction alone may not directly influence students' learning outcomes or behaviors. Likewise, this finding supports Cho & Kim's (2022) claim that interaction may affect learning only indirectly, through other mediating factors such as social presence or self-regulation.

On the other hand, the current findings stating that social interactions do not significantly influence learning behavior, oppose the study of Lu *et al.* (2024), which states that collaborative communication and peer relationships contribute to active learning behaviors. The study conducted by Lu *et al.* (2024) involved 121 samples, while the current study involves 150 respondents.

8. Conclusion

Based on the findings, it was concluded that Environmental Factors significantly influence learning behavior, while cognitive processes and social interactions do not. Together, the two factors moderately contributed 30.3% in the variance of learning behavior. Hence, Social Learning Theory, states that behavior is learned through observation, imitation, and modeling. Which the theory emphasizes the importance of cognitive processes, environmental factors and social interactions in shaping behavior, is partially affirmed.

9. Recommendations

Based on the conclusion, future studies may be pursued to utilize other variables that may explain the remaining 69.7% of the variance in learning behavior. An exploratory study may generate emerging themes that can be used as factors to influence learning behavior. In addition, school leaders may prioritize learning programs that promote positive interactions and create a supportive learning environment.

Conflict of Interest Statement

The author declares no conflicts of interest.

About the Author(s)

Ms. Sarah Mae C. Zamora is a licensed professional teacher and educator based in Davao, currently associated with Southeastern College of Padada, Incorporated. Her study explores the learning behavior of students from broken homes to help Social Studies educators foster more supportive and inclusive learning environments.

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