

Influence of Cognitive, Environmental and Behavioral Factors as Determinants of Academic Performance among Senior High School Learners in Evening Class Schedule

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Abstract

Low academic performance is a critical concern in education. This study examined the contribution of Cognitive, Environmental and Behavioral Factors as determinants of Academic Performance among 223 evening Senior High School learners. Diagnostic research design, total enumeration sampling, survey technique, and multiple regression analysis were applied. The finding showed that only cognitive and behavioral factors significantly contribute on the criterion, partially supporting Social Cognitive Theory. Future research may explore additional variables to account for the unexplained 38.4% variance, while educational leaders may implement teacher training programs that promote self-regulated learning, cognitive skills, metacognitive awareness, and positive behavioral engagement to enhance the academic performance of students in evening classes.

Keywords: Cognitive, environmental, behavioral factors, determinants of academic performance, senior high school learners, evening class schedule

1. Introduction

1.1 The Problem and Its Scope

Students' worst academic performance among evening senior high school learners is increasingly recognized as a problematic situation in the global context. Across educational systems, academic underperformance is documented as a persistent concern that reflects gaps in learning outcomes and educational attainment standards. International assessment and comparative education studies have consistently highlighted disparities in student achievement levels, particularly among non-traditional or flexible learning groups such as evening students, whose academic outcomes often fall below expected benchmarks (UNESCO, 2020). In the United States, students in the alternative and evening schooling programs have reported lower academic achievement levels compared to those in traditional day programs (Darling-Hammond et al., 2019). Similarly, studies in India indicated that students enrolled in non-regular or evening education programs demonstrate comparatively weaker academic performance (Kingdon, 2020). In South Africa, evening secondary education learners have also been observed to experience lower academic attainment levels reflecting broader educational challenges within flexible learning system (Spaull, 2018).

Within the Philippine context, students' poor academic performance among evening Senior High School 164 learners remains a pressing educational concern. The implementation of the K to 12 programs has expanded access to SHS education, including evening classes designed for education; however, concern about academic performance persist. National and local studies have noted that students in alternative delivery modes, including evening program, often register lower academic achievement levels compared to those in regular daytime classes (Bernardo, 2020).

The consequences of students' poor academic performance among evening Senior High School learners are multifaceted and significant. Poor academic outcomes are associated with reduced academic progression, limited access to higher education opportunities, and challenges in workforce readiness (Hanushek et al., 2017). Additionally, persistent underperformance can lead to decreased student engagement and increased likelihood of school discontinuation (Rumberger, 2011).

Related literatures about low academic performance of Senior High School (SHS) students are limited since most of the researchers focused only on the low academic performance of the student who are the class schedule is in a morning session in general. For this reason, this study was conducted.

1.2 Significance of the study

This study deeply connects to the essence of Sustainable Development Goal (SDG) 4: Quality Education, which champions inclusive, equitable, and lifelong learning opportunities. Academic performance is crucial in maintaining the excellence and stability of every educational setting, particularly in academic discussions and learning processes. Prioritizing the early identification of factors contributing to low academic performance, implementing innovative teaching approaches and methods, and increasing students' participation in classroom activities can help promote consistent and interactive student engagement.

This study is vital to understanding how academic performance can be a factor on upholding and enhancing SDG 4 in a rapidly changing world. For educational institutions, this research provides valuable insights that may guide policies and frameworks that support in raising cognitive, environmental and behavioral factors to the academic performance of students. Teachers may benefit by providing practical guidance for designing lessons and managing classrooms in ways that actively engage students' cognitive, emotional and behavioral investment. Lastly, for future researchers, this study may be a foundational resource for examining related topics in student engagement, as this research promotes empowering educational experiences, academic success and better-prepared graduates.

1.3 Statement of the Problem

This study determined the contribution of Cognitive, Environmental and Behavioral Factors as determinants of Academic Performance. Specifically, the study intended to achieve the following objectives:

1. To determine the levels of cognitive factors in terms of motivation and learning strategies; 165 environmental factors in terms of classroom positive, diversity values, personal negative, and persistence in major; behavioral factors in terms of student learning behavior in class, student motivation, and student social interaction outside the class; and academic performance in terms of students' individual Performance and students' group performance among evening SHS learners.
2. To determine the significant relationship between cognitive, environmental, and behavioral factors, and the academic performance among evening SHS learners.
3. To determine the degree of influence of cognitive, environmental, behavioral factors on academic performance among evening SHS learners.

1.4 Null Hypotheses

The following hypotheses were tested at a 0.05 level of significant:

H01: Cognitive, environmental, and behavioral factors do not have significant relationship with the academic performance of evening SHS learners.

H02: Cognitive, environmental, and behavioral factors do not significantly influence the academic performance among evening SHS learners.

2.Methodology

2.1 Research Design

This study employed a diagnostic research design. According to Kumar (2022), diagnostic research design is used to identify and analyze the causes of a particular problem or phenomenon by examining relationships among variables and proposing possible solutions. The method is best suited for this study because it will be able to effectively examine the relationship between a dependent variable and an independent variable. The goal of the study is to determine the influence between cognitive, environmental, behavioral factors and academic performance among evening SHS learners.

2.2 Locale of the Study

This study was conducted in a private school located in Davao City. The institution has three campuses situated across the city, namely; the Jacinto, Tugbok, and Cabantian campuses. The research focuses on a diverse group of SHS learners across various campuses, with the Cabantian Campus selected as the respondent group for this study. This campus was chosen due to its class schedule, which runs from 3:30 PM until 8:30 PM in the evening, providing a suitable timeframe for the research. These characteristics of the private school make it an appropriate setting for examining how cognitive, environmental, and behavioral factors influence the academic performance of SHS learners.

2.3 Sample and Sampling Technique

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The respondents of this study consisted of 223 Grade 12 Senior High School learners enrolled in the private school's Senior High School program during School Year 2025–2026. According to Sharma (2014), total enumeration sampling, also known as total population sampling, is a sampling technique in which all members of the population who meet the specific criteria are included in the study, particularly when the population is small and accessible. In this study, the researcher did not utilize any specific technique to determine the exact number of respondents from the target population. Instead, the number of respondents was pre-determined based on the total population size.

2.4 Data Gathering Technique

In this study, a survey was employed to collect data. Taherdoost (2021) defined a survey as a research method used to collect information from a group of respondents via structured questionnaires to understand their opinions, experiences, or behaviors. Additionally, surveys, administered through structured questionnaires, offered an efficient way to collect standardized information while capturing students' perspective in a systematic manner (Creswell, 2018).

The study employed four adapted questionnaires to gather data, with each instrument utilizing a 5point Likert scale. The first questionnaire, which measured cognitive factors, was adapted from Pintrich and consisted of 22 items. The instrument demonstrated good reliability with a Cronbach's alpha coefficient of 0.890. The second questionnaire, which assessed environmental factors, was adapted from the study of McGhee et al. (2007) and consisted of 24 items. It also showed good reliability, with a Cronbach's alpha of 0.871. The third questionnaire, which measured behavioral factors, was adapted from the study of Wati et al. (2025) and contained 18 items. The instrument demonstrated acceptable reliability, with a Cronbach's alpha coefficient of 0.717. Lastly, the Academic Performance Questionnaire, adapted from Jabir and Farooq (2022), consisted of 13 items and obtained a Cronbach's alpha coefficient of 0.752, indicating acceptable reliability. These instruments were selected because of their established reliability and suitability in assessing cognitive, environmental, and behavioral factors related to the academic performance of evening Senior High School learners.

2.5 Data Analysis Technique

This study used descriptive statistics, correlation analysis, and multiple linear regression.

Descriptive statistics, is a statistical approach used to summarize, organize, and describe the main features of a dataset can be used to summarize large data sets, making it easier for researchers to understand key characteristics of the data (Alabi and Bukola, 2023). In this study, mean and standard deviation statistical tools were used.

Moreover, correlation analysis a statistical method used to measure the strength and direction of the relationship between two or more variables and assesses the relationship between two variables, showing their changes in

one variable are associated with changes in the other (Wisniewski & Brannan, 2024); thus, the Pearson Product-Moment Correlation statistical tool was used.

Lastly, multiple linear regression analysis a statistical technique used to examine the relationship between one dependent variable and two or more independent variables, allowing researchers to predict outcomes based on several predictors was used to test the combined influence cognitive, environmental and behavioral factors, allowing the analysis of multiple independent variables on a single dependent variable (Bevans, 2023). Further, unstandardized and standardized Beta (β) coefficients were used to determine the strength and direction of each predictor (Hair et al., 2023).

2.6 Ethical Consideration

The researcher strictly adheres to ethical standards in conducting the study. Informed consent was secured from all respondents, who were assured of voluntary participation, anonymity, and confidentiality. Data collected was used solely for academic purposes, and respondents were given the right to withdraw from the study at any time without penalty. Approval from relevant school authorities was sought prior to data collection. Furthermore, the study complied with the Data Privacy Act of 2012, guaranteeing anonymity, confidentiality, and proper handling of personal information. The research was reviewed and approved by the Society of Moral Integrity and Legal Ethics (SMILE) to ensure compliance with ethical and legal research principles.

3. Results

This chapter presents the descriptive, correlation, and regression analysis, along with the corresponding interpretation of the statistical result. It concludes with a summary of the findings.

3.1 Descriptive Analysis

Table 1 is the descriptive table. It contains the predictive and criterion variables involved in the study. It also includes the number of respondents, standard deviations, computed means and the corresponding descriptive interpretations.

Table 1. Descriptive Table				
Variables	n	SD	Mean	Interpretation
Cognitive Factors	223	0.49	4.34	Very High
Motivation		0.54	4.38	Very High
Learning Strategies		0.52	4.31	Very High
Environmental Factors	223	0.53	4.06	High
Classroom positive		0.53	4.36	Very High

Diversity values	0.59	4.34	Very High	168
Personal negative	1.32	2.82	Moderate	
Persistence in major	0.67	4.37	Very High	
Behavioral Factors	223	0.52	4.37	Very High
Student learning behavior in class	0.54	4.38	Very High	
Student motivation	0.53	4.53	Very High	
Student social interaction outside the class	0.73	4.21	Very High	
Academic performance	223	0.60	4.24	Very High
Student individual performance	0.67	4.24	Very High	
Student group performance	0.67	4.25	Very High	
1.00-1.79 Very Low, 1.80-2.59 Low, 2.60-3.39 Moderate, 3.40-4.19 High, 4.20-5.00 Very High				

Specifically, the table shows that the cognitive factor variable obtained a mean of 4.37, described as very high. This indicates that SHS learners demonstrate very strong cognitive ability. All of the indicators registered a very high. The corresponding standard deviation of 0.49, shows that the variability is very consistent.

The second variable, environmental factor, obtained a mean of 4.06, described as high. It indicated the learning environment of SHS learners is good. Only one indicator was described as moderate, others are very high. The standard deviation of 0.53, described as the variability are relatively consistent.

The third variable, behavioral factor, obtained a mean of 4.37, described as very high. It indicates that behavioral factor of SHS learners has a very good behavior in a class. All of the indicators registered a very high. The standard deviation of 0.52, this means variability are relatively consistent.

Finally, the academic performance variable obtained a mean of 4.24, described as very high. This indicates that SHS learners demonstrate outstanding academic performance. All its indicators are described as very high. The standard deviation of 0.60, this means variability are relatively consistent.

The results revealed that both cognitive and behavioral factors were rated very high among SHS learners. Between the two, behavioral factors appeared to reflect student strongest characteristics in relation to their academic performance. Environmental factors, although rated slightly lower.

3.2 Correlation Analysis

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Table 2 is the correlation table. It presents the predictive 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 Table

	Academic Performance Variables		
	r-value	p-value	Interpretation
Cognitive Factors	0.670	0.000	Positive, Moderate and Significant Relationship
Environmental Factors	0.481	0.000	Positive, Moderate and Significant Relationship
Behavioral Factors	0.771	0.000	Positive, Strong and Significant Relationship

Specifically, the table shows that the correlation between cognitive factors and academic performance variables, 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 is statistically significant. The corresponding r-value of 0.670, indicates moderately high correlation. This implies as cognitive factors increases, their academic performance also tends to increase.

Moreover, the correlation between environmental factors and academic performance variables, yielded 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 is statistically significant. The corresponding r-value of 0.481, shows a moderately low correlation. This implies as environmental factors increases, their academic performance also tends to increase.

Lastly, the correlation between behavioral factors and academic performance variables obtained a p-value of 0.000, which is less than 0.05 degree of confidence. Thus, the null hypothesis was rejected. It indicates that the correlation is statistically significant. The corresponding r-value of 0.771. Indicates a high correlation between the variables mentioned. This implies that as behavioral factors increases, their academic performance also tends to increase.

The finding revealed that among the variables the behavioral factors have a more substantial impact than 170 cognitive and environmental factors. Behavioral factors highlight its key role in the academic performance among evening Senior High School learners.

3.3 Regression Analysis

Table 3 presents the regression analysis. It examined the influence of the predictive variables and criterion variables. Furthermore, the table showed the unstandardized beta, beta coefficient, t-value, p-value, and the corresponding interpretation.

Table 3. Regression Analysis Results

Predictors	Academic Performance					Interpretation
	Estimate	Stand. Estimate	SE	t	p	
Intercept	-0.102		0.248	-0.410	0.682	
Cognitive Factors	0.240	0.196	0.079	3.041	0.003	Influence is Significant
Environmental Factors	0.069	0.061	0.058	1.204	0.230	Influence is not Significant
Behavioral Factors	0.691	0.591	0.078	8.888	0.000	Influence is Significant

R= 0.785, R²= 0.616, Adjusted R²=0.611, F=117.0, Sig.=0.000

Level of Significant: 0.05

Decision Rule: Reject H if $p < 0.05$

The table specifically shows that the influence of cognitive factors on academic performance acquired a standardized beta coefficient of 0.196. It indicates that the strength of the influence of cognitive factors on the criterion is weak. With a corresponding p-value of 0.003, which is less than the 0.05 level of significance, the null hypothesis was rejected. It signifies that the influence of cognitive factors on academic performance is statistically significant. Consequently, this implies that every unit increase in cognitive factors corresponds to a 0.196 unit increase in academic performance.

On the other hand, the influence of environmental factors on academic performance acquired a

standardized beta coefficient of 0.061. It indicates that the strength of the influence of environmental factors on the criterion is very weak. With a corresponding p-value of 0.230, which is greater than the 0.05 level of significance, the null hypothesis was accepted. It signifies that the influence of environmental factors on academic performance is not statistically significant. Consequently, this implies that every unit increase in environmental factors corresponds to a 0.061 unit increase in academic performance.

Additionally, the influence of behavioral factors on academic performance acquired a standardized beta coefficient of 0.591. It indicates that the strength of the influence of behavioral factors on the criterion is strong. The corresponding p-value is 0.000, which is less than the 0.05 level of significance; thus, the null hypothesis was rejected. It signifies that the influence of behavioral factors on academic performance is statistically significant. Consequently, this implies that every unit increase in cognitive factors corresponds to a 0.591 unit increase in academic performance.

The table also shows the R-squared value of 0.616, indicating strong combined influence of determinants on the criterion variable, with a corresponding p-value of 0.000, which is less than 0.05 level of significance. Hence, the null hypothesis was rejected. It indicated that the combined influence of cognitive, environmental and behavioral factors on academic performance is significant. This implies that for every unit change in the combined influence of the determinant variables, there is corresponding 0.23 unit change in the criterion variable.

The results revealed that among the three determinant variables, behavioral factors had the strongest influence on academic performance, indicating that students' behaviors greatly contribute to their academic success. cognitive factors also showed a significant influence on academic performance. however, their effect was weaker compared to behavioral factors. In contrast, environmental factors demonstrated the weakest influence and were found to have no significant effect on academic performance.

3.4 Summary of Findings

Based on statistical results, it specifically found that:

1. Cognitive factors, environmental factors, and behavioral factors significantly correlate with the academic performance.
2. Cognitive and behavioral factors, not the environmental factors, significantly influence academic performance.

4. Discussion

This chapter presents the discussion and the study's results. Specifically, it includes the reviews of previously published studies that either supported or denied the results of this study.

4.1 Correlation between Cognitive Factors and Academic Performance

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The present study found a significant correlation between cognitive factors and academic performance. This current finding affirms the study of Zhang et al. (2023), explaining that cognitive abilities such as working memory, attention control, and processing speed play a critical role in predicting students' academic success across various subjects. Likewise, the current finding affirms Garcia and Lee (2024), who found that student with stronger executive functioning skills tend to demonstrate higher academic achievement due to better problem-solving abilities and effective learning strategies.

However, the present finding contradicts the study of Mayer (2024), which argued that cognitive factors alone do not strongly determine academic achievement, emphasizing that environmental, emotional, and social influences may have a greater impact on students' performance.

4.2 Correlation between Environmental Factors and Academic Performance

The current study found a significant correlation between environmental factors and academic performance. This result affirms the findings of Wang et al. (2023), stating that supportive learning environments such as access to educational resources, positive classroom climate, and family support significantly enhance student academic outcomes. Likewise, this current study's findings are corroborated with Martinez and Cruz (2024), who found that students exposed to conducive physical and social environments, including low noise levels and strong teacher support, demonstrate improved concentration and higher academic achievement. The current finding agrees with the claim of Hammond et. al. (2024), asserting that conducive school environments, adequate facilities, and effective educational support systems significantly influence academic achievement among learners.

On the other hand, the finding that environmental factors and academic performance are significantly correlated contradicts the claim of Okeke et al. (2022), explaining that no significant relationship between certain environmental variables and student performance is that measured environmental factors in a limited way, focusing mainly on physical infrastructure, whereas the current study considered a broader range of variables, including socio emotional support and home learning conditions.

4.3 Correlation between Behavioral Factors and Academic Performance

The present study found a significant correlation between behavioral factors and academic performance. This finding agrees with Kim et al. (2023), who found that positive student behaviors such as consistent study habits, class participation, and self-discipline are strongly associated with higher academic achievement among secondary school students. This evidence highlights that students' day-to-day behaviors play a crucial role in shaping their learning outcomes and overall academic success. Similarly, the present finding supports the claim of Lopez and Ramirez (2024), stating that students who demonstrate effective time management and active

engagement in learning activities tend to perform better academically due to improved focus and retention of 173 information.

However, the finding that behavioral factors and academic performance are significantly correlated contradicts Brown et al.'s (2022), claiming that certain behavioral factors, such as classroom participation alone, may not always significantly predict academic outcomes. this difference is the variation in the range of behavioral variables examined that focused on limited observable behaviors, included a broader set of behavioral factors such as self-regulation, motivation, and study routines.

4.4 Academic Performance as Influence of Cognitive, Environmental and Behavioral Factors

The current findings shows that cognitive and behavioral factors significantly influence on student academic performance; whereas environmental factors variable do not significant effects on academic outcomes. The current finding supports the claim of Wang and Chen (2025), stating study has consistently shown that cognitive abilities such as motivation, self-efficacy, and cognitive engagement are strong predictors of academic achievement, as students with higher cognitive engagement and clearer learning goals tend to perform better academically. Similarly, the present finding supports the claim of Delfino (2020), who stating the behavioral factors, including students' disciplined study habits, participation, and engagement in learning tasks, have been found to significantly predict academic performance across different learner groups.

In contrast, some studies have reported non-significant influenced between environmental factors and academic outcomes. This finding agrees with Gaisiey (2025), who examined environmental variables and student achievement and found that the physical, social, and psychological components of the learning environment did not significantly predict students' academic performance. This suggests that environmental conditions may not directly influence students' academic success.

Conclusion

Based on the findings, it was concluded that cognitive and behavioral factors significantly influence academic performance, while environmental factors do not. This result partially affirms the Social Cognitive Theory, which explains that human functioning is the result of the dynamic interaction between personal, behavioral, and environmental influences that emphasizes how people learn by observing others.

Recommendations

Based on the conclusion, the following are recommended:

1. Further research may explore other variables not included in the present study to explain the remaining 38.4 % of the variance in academic performance. Qualitative approaches may identify emerging

themes which may be consider as potential variables, and subthemes which may be utilized as 174 indicators.

2. Educational leaders may focus on improving environmental factors including classroom positive, diversity values, personal negative and persistence in major in order to acquired the optimal outcome in academic performance both individual and group performance. They may reallocate other resources intended to cognitive factors and behavior factors rather to environmental factors in order to achieved the goal.

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References

- Alabi, A., & Bukola, B. (2023). Descriptive statistics and data analysis in research. *Journal of Educational Research and Statistics*, 5(2), 15–27.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Bernardo, A. B. I. (2020). Socioeconomic status moderates the relationship between growth mindset and learning outcomes in Filipino students. **Journal of Educational Psychology*, 112*(6), 1202–1215.
- Bevans, R. (2023). Multiple linear regression | A quick guide with examples. Scribbr. Scribbr Official Website
- Brown, T. J., Smith, A. L., & Carter, R. (2022). Classroom behavior and academic outcomes: Revisiting the role of participation. *Educational Psychology Review*, 34(2), 567–583. <https://doi.org/10.1007/s10648-021-09645-3>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.

- Darling-Hammond et al. (2019). Implications for educational practice of the science of learning and development. *175*
Applied Developmental Science, 24(2), 97–140.
- Delfino, A. P. (2019). Student engagement and academic performance of students of Partido State University. *Asian Journal of University Education*, 15(1), n1.
- Gaisiey, I. K. (2025). The impact of the learning environment on students' academic performance in integrated science courses. *Canadian Journal of Education and Social Science*, 3(1). Retrieved from <https://www.cjess.ca/index.php/home/article/view/306>
- Garcia, M. L., & Lee, J. H. (2024). Executive functioning and academic success among secondary students: A correlational study. *Learning and Individual Differences*, 102, 102243. <https://doi.org/10.1016/j.lindif.2024.102243>
- Guilford (1956). *Fundamental statistics in psychology and education*. McGraw-Hill.
- Hair et al. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24.
- Hair et al. (2023) *Multivariate data analysis* (9th ed.). Cengage Learning.
- Hammond et al. (2024). Effective practice in EAL education: Enacting distributed school leadership. *Journal of Educational Administration and History*, 56(4), 335–364. <https://doi.org/10.1080/02671522.2024.2394034>
- Hanushek, E. A., Schwerdt, G., Wiederhold, S., & Woessmann, L. (2017). Coping with change: International differences in the returns to skills. *Economics Letters*, 150, 1–4.
- Jabir, M. S., & Farooq, M. S. (2022). Development and Validation of Students' Academic Performance Scale FOR Higher Secondary School Level. *Global Social Sciences Review*, VII(II), 447–462. [https://doi.org/10.31703/gssr.2022\(VII-II\).44](https://doi.org/10.31703/gssr.2022(VII-II).44)
- Kim, S. Y., Park, J. H., & Lee, K. (2023). The relationship between student behavior and academic achievement: The role of self-regulation and engagement. *Journal of Educational Psychology*, 115(4), 789–804. <https://doi.org/10.1037/edu0000789>
- Kingdon, G. G. (2020). The private schooling phenomenon in India: A review. *IZA World of Labor*.
- Kumar, M. (2022). *Classification of research design: Descriptive, diagnostic, exploratory and experimental*. Management Education & Research Institute.
- Lopez, M. A., & Ramirez, E. J. (2024). Behavioral factors and academic success: Evidence from a longitudinal study of high school students. *Learning and Individual Differences*, 103, 102267.
- Martinez, R. P., & Cruz, J. D. (2024). School and home environmental factors as predictors of academic performance among high school students. *Journal of Educational Research and Practice*, 14(1), 45–60. <https://doi.org/10.5590/JERAP.2024.14.1.04>

- Mayer, R. E. (2024). Cognitive factors and student learning outcomes: Limitations of cognition-centered approaches. 176
Journal of Educational Psychology, 116(3), 411–425. <https://doi.org/10.1037/edu0000814>
- McGhee, D. E., Lowell, N., & Lemire, S. (2007). The classroom learning environment (CLE) questionnaire: Preliminary development. University of Washington Office of Educational Assessment.
- Okeke, N. E., Adeyemi, T. O., & Yusuf, A. B. (2022). Environmental determinants and students' academic achievement: Evidence from secondary schools in Nigeria. *African Journal of Educational Studies*, 10(2), 112–125.
- Pintrich, P.R. (1988). A process-oriented view of student motivation and cognition. In J. Stark & L. Mets (Eds.), *Improving teaching and learning through research: New directions for institutional research* (Vol. 57, pp. 6579). San Francisco: Jossey-Bass.
- Rumberger, R. W. (2011). *Dropping out: Why students drop out of high school and what can be done about it*. Harvard University Press.
- Sharma, S. (2014). *Nursing research and statistics*. Elsevier Health Sciences.
- Spaull, N. (2018). Equity: A price too high to pay? In *South African schooling: The enigma of inequality*. Springer.
- Taherdoost, H. (2021). Data collection methods and tools for research; A step-by-step guide to choose data collection technique for academic and business research projects. *International Journal of Academic Research in Management (IJARM)*, 10(1), 10–38.
- UNESCO. (2020). *Global education monitoring report 2020: Inclusion and education—All means all*. UNESCO Publishing.
- Wang, L., & Chen, C. J. (2025). Factors affecting student academic performance: A systematic review. *International Journal on Studies in Education*, 7(1), 1-47. <https://doi.org/10.46328/ijonse.276>
- Wang, L., Zhang, Q., & Li, X. (2023). The impact of learning environment on academic achievement: A multilevel analysis of student outcomes. *Learning Environments Research*, 26(3), 789–805.
- Wati et al. (2025). Validity of Student Learning Behavior Questionnaire. SAGE Open. 15. 10.1177/21582440251351441.
- Wisniewski, K., & Brannan, L. (2024). Correlation analysis and interpretation in quantitative research. *International Journal of Statistical Methods*, 12(1), 45–58.
- Zhang, Y., Chen, X., & Liu, H. (2023). The role of cognitive processes in predicting academic performance: Evidence from a longitudinal study. *Contemporary Educational Psychology*, 72, 102145. <https://doi.org/10.1016/j.cedpsych.2023.102145>