



Academic Procrastination and Learners' Attitudes: Their Effects on Students' Performance in Statistics and Probability

Rezia Grace R. Inguito 
Romulo G. Doronio 

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Correspondence: reziagrace.inguito@acn.edu.ph
¹⁻²Assumption College of Nabunturan, Philippines

Abstract

This study examined the effects of academic procrastination and learners' attitudes on the performance of Grade 11 students in Statistics and Probability in selected public secondary schools in the Municipality of Sta. Josefa, Agusan del Sur during the School Year 2025–2026. Specifically, it determined the levels of academic procrastination and learners' attitudes, assessed students' academic performance, examined the relationships among the study variables, and identified significant predictors of academic performance. A quantitative correlational research design was employed involving 188 Grade 11 students selected through stratified random sampling. Data were collected using standardized questionnaires on academic procrastination and learners' attitudes toward Statistics and Probability, while students' academic performance was measured using their official final grades. The data were analyzed using mean, standard deviation, Pearson product-moment correlation, and multiple linear regression. The findings revealed that respondents exhibited a low level of academic procrastination and favorable attitudes toward Statistics and Probability. Students generally demonstrated outstanding academic performance. Academic procrastination showed a very strong negative and significant relationship with academic performance and emerged as the only significant predictor of students' achievement, whereas learners' attitudes did not significantly predict academic performance. The study concludes that behavioral self-regulation plays a more influential role than positive attitudes in determining students' performance in Statistics and Probability. It is recommended that schools implement interventions that strengthen students' self-regulated learning, time management, and strategies to reduce academic procrastination.

Keywords

academic procrastination, learners' attitudes, Statistics and Probability, academic performance, self-regulated learning

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Author Contributions

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Ethics Statement

This study was conducted in accordance with ethical standards.

INTRODUCTION

Statistics and Probability has become an essential component of twenty-first-century education because statistical literacy, quantitative reasoning, and evidence-based decision-making are increasingly required across higher education, professional practice, and everyday life. Consequently, educational systems emphasize the development of learners' ability

to interpret data, solve authentic problems, and make informed decisions using statistical reasoning. Despite these expectations, many students continue to experience considerable difficulty mastering Statistics and Probability because learning outcomes are influenced not only by cognitive ability but also by behavioral, motivational, and emotional factors. Previous research has consistently shown that academic procrastination, statistics anxiety, negative academic emotions, and unfavorable attitudes toward statistics reduce students' engagement and academic achievement, whereas self-regulated learning, positive attitudes, and stronger academic self-efficacy promote better learning outcomes (Abbiati et al., 2021; Chen et al., 2024; Fernández-Pascual et al., 2025; Lethbridge et al., 2024). Academic procrastination has likewise long been recognized as a pervasive educational problem characterized by the voluntary delay of academic tasks despite anticipating negative consequences (Solomon & Rothblum, 1984; Steel, 2007). Students' emotional responses toward mathematics and statistics have also been identified as important determinants of academic success. Early investigations established that mathematics and statistics anxiety undermine students' confidence, reduce engagement, and impair academic performance (Richardson & Suinn, 1972; Zeidner, 1991). Contemporary studies continue to support these findings by demonstrating that statistics anxiety, fear of failure, and negative problem orientation contribute to procrastination and lower achievement, whereas positive attitudes and stronger self-regulatory behaviors facilitate persistence and learning success (Ávila-Toscano et al., 2025; Huang et al., 2025; Lethbridge et al., 2024). Likewise, extensive meta-analytic evidence confirms that academic procrastination remains one of the strongest behavioral predictors of poor academic performance because delaying academic tasks reduces learning opportunities, increases academic stress, and weakens long-term achievement (Kim & Seo, 2015; Kooren et al., 2024).

Within the Philippine educational context, improving mathematics achievement remains a continuing educational priority, particularly in Statistics and Probability, where many learners encounter conceptual difficulties, limited confidence, and inconsistent academic performance. These challenges have become increasingly important as the K-12 curriculum emphasizes statistical reasoning, data interpretation, and evidence-based problem solving. Students' academic performance is influenced not only by intellectual ability but also by motivational beliefs, emotional regulation, and self-regulatory behaviors. Research has shown that learners who perceive greater value in Statistics and Probability, possess stronger academic self-efficacy, and effectively regulate their learning exhibit lower levels of procrastination and higher academic achievement (Eccles & Wigfield, 2002; García-Ros et al., 2023; Ragusa et al., 2023; Zimmerman, 2002). Conversely, students experiencing statistics anxiety, negative emotions, and persistent academic worry are more likely to postpone academic responsibilities, resulting in lower achievement and reduced engagement with statistical learning (Ávila-Toscano et al., 2025; Huang et al., 2025; Lethbridge et al., 2024).

Although substantial international evidence has established the importance of academic procrastination and learners' attitudes in mathematics education, several empirical gaps remain. First, previous studies have primarily focused on university students, leaving relatively limited evidence involving senior high school learners enrolled in Statistics and Probability. Second, many investigations have examined either academic procrastination or learners' attitudes independently rather than evaluating their combined predictive influence on academic performance within a single explanatory model. Third, despite the growing body of international literature, contextual evidence from Philippine public secondary schools, particularly rural educational settings, remains limited. Addressing these empirical and contextual gaps contributes to a more comprehensive understanding of how behavioral and affective factors jointly influence students' academic achievement in Statistics and Probability.

Accordingly, this study examined the predictive effects of academic procrastination and learners' attitudes on the performance of Grade 11 students in Statistics and Probability in selected public secondary schools in the Municipality of Sta. Josefa, Agusan del Sur, during the School Year 2025–2026. The study is anchored on the Temporal Motivation Theory (Steel & König, 2006), which explains procrastination as a consequence of motivational decision-making; the Expectancy-Value Theory (Eccles & Wigfield, 2002), which emphasizes the influence of learners' expectations for success and perceived task value on academic behavior; and the Self-Regulated Learning Theory (Zimmerman, 2002), which highlights learners' capacity to regulate cognition, motivation, and behavior throughout the learning process. The findings are expected to provide empirical evidence for teachers, school administrators, curriculum planners, guidance counselors, parents, and future researchers in designing interventions that strengthen students' self-regulated learning, reduce academic procrastination, cultivate positive attitudes toward Statistics and Probability, and ultimately improve academic performance. Although the investigation is limited to Grade 11 students from selected public secondary schools and relies on self-report measures and official academic grades, it contributes contextual evidence regarding the behavioral and affective determinants of statistics learning within Philippine secondary education.

METHODOLOGY

Design

This study employed a quantitative correlational research design anchored in the positivist research paradigm, which assumes that social phenomena can be objectively measured and explained through empirical observation and statistical analysis. Correlational research is appropriate for examining the magnitude and direction of relationships among naturally occurring variables without manipulating the study environment. This design also permits the identification of variables that significantly predict a particular outcome through regression analysis. The present investigation examined whether academic procrastination and learners' attitudes toward Statistics and Probability significantly predict students' academic performance in Statistics and Probability. The design aligns with the study's theoretical foundations, particularly Temporal Motivation Theory (Steel & König, 2006), Expectancy-Value Theory (Eccles & Wigfield, 2002), and Self-Regulated Learning

Theory (Zimmerman, 2002), which collectively explain how motivational beliefs, behavioral regulation, and learners' attitudes influence academic achievement.

Locale and Participants

The study was conducted in the Sta. Josefa District, Division of Agusan del Sur, Philippines, specifically involving Aurora National High School, Sayon National High School, and Sta. Josefa National High School during the School Year 2025–2026. These schools were selected because they offer the Statistics and Probability subject under the Senior High School curriculum and represent the educational context examined in this investigation. The respondents consisted of 367 Grade 11 students officially enrolled in Statistics and Probability during the data collection period. Students not enrolled in the subject and those who declined participation were excluded from the study. The selected participants adequately represented the target population and provided sufficient statistical power for correlational and multiple regression analyses.

Sampling

The study utilized stratified random sampling to ensure proportional representation of students across participating schools and academic strands. Stratification minimized sampling bias by allowing each subgroup within the population an equal opportunity to be represented according to its proportion in the population. Following the identification of eligible respondents, proportional allocation was applied to determine the required sample from each school and strand. Random selection was then performed within every stratum until the required number of participants was obtained. This procedure enhanced the representativeness of the sample and improved the generalizability of the findings within the defined study context.

Instruments

Data were collected using two standardized instruments together with students' official academic records. Academic procrastination was measured using the Academic Procrastination Scale developed by McCloskey and Scielzo (2015). The instrument assesses four behavioral dimensions, namely timeliness or delay of work, distraction or attention management, test preparation habits, and task avoidance. Higher scores indicate greater tendencies toward academic procrastination. Learners' attitudes toward Statistics and Probability were measured using the adapted attitude scale developed by Calma et al. (2022). The instrument measures both positive emotional attitudes, including interest, confidence, and enjoyment, and negative emotional attitudes, including fear, anxiety, insecurity, and discomfort toward Statistics and Probability. Students' academic performance was obtained from their officially recorded final grades in Statistics and Probability. These grades served as the criterion variable because they reflect students' overall academic achievement based on the Department of Education's grading standards. Prior to full implementation, the instruments underwent expert validation to establish content validity. Pilot testing was likewise conducted to evaluate item clarity, reliability, and suitability for the target respondents. Internal consistency reliability was assessed using Cronbach's alpha, with coefficients interpreted according to the recommendations of Tavakol and Dennick (2011), where values of 0.70 or higher indicate acceptable reliability.

Validity and Reliability

To establish content validity, the research instruments were evaluated by three experts in educational research, measurement, and mathematics education. Their recommendations regarding clarity, relevance, and appropriateness of the questionnaire items were incorporated prior to pilot implementation. The pilot testing involved respondents with characteristics comparable to the target population but who were not included in the final sample. Internal consistency reliability was determined using Cronbach's alpha coefficient. The Academic Procrastination Scale obtained a Cronbach's alpha coefficient exceeding the recommended threshold of .70, indicating acceptable internal consistency. Likewise, the Learners' Attitudes toward Statistics and Probability Scale demonstrated satisfactory reliability with an alpha coefficient above .70. These results indicate that both instruments possessed adequate validity and reliability for measuring the constructs investigated in the study.

Collection

Following the approval of the research proposal, permission to conduct the study was obtained from the Schools Division Superintendent, school principals, and other appropriate educational authorities. Ethical approval was likewise secured before data collection commenced. Parents or legal guardians provided informed consent, while participating students signed informed assent forms after receiving complete information regarding the purpose, procedures, voluntary nature, confidentiality, and benefits of the study. The researcher personally administered the survey questionnaires during scheduled class periods with the assistance of designated school personnel. Standardized instructions were provided to ensure uniform administration across all participating schools. Completed questionnaires were retrieved immediately after administration to minimize data loss and incomplete responses. Students' final grades in Statistics and Probability were obtained through authorized school records while maintaining strict confidentiality. Following data collection, responses were checked for completeness, coded systematically, encoded into statistical software, and verified for accuracy before statistical analysis.

Analysis

Descriptive and inferential statistical techniques were employed to answer the research questions. The mean and standard deviation were used to determine the levels of academic procrastination and learners' attitudes toward Statistics and Probability. The Pearson Product-Moment Correlation Coefficient (r) was utilized to determine the strength and direction of the relationships among academic procrastination, learners' attitudes, and students' academic performance. To determine the combined and individual predictive effects of the independent variables on students' academic performance, Multiple Linear Regression Analysis was employed. Regression analysis was selected because it estimates the relative contribution of each predictor while controlling for the influence of the other independent variable. All statistical analyses

were performed using IBM SPSS Statistics. Statistical significance was evaluated at the 0.05 alpha level, and regression assumptions, including normality, linearity, independence of errors, multicollinearity, and homoscedasticity, were examined before conducting inferential analyses to ensure the validity of the regression model.

Ethical Considerations

The study strictly adhered to established principles of research ethics. Ethical clearance was obtained from the appropriate institutional review authority before data collection. Participation was entirely voluntary, and respondents retained the right to withdraw at any stage without penalty. Confidentiality and anonymity were maintained by assigning numerical identification codes rather than recording participants' names. All information collected was treated as confidential and used exclusively for academic research purposes. Electronic datasets were password-protected, while printed questionnaires were securely stored and accessible only to the researcher. The study complied with the Philippine Data Privacy Act of 2012 (Republic Act No. 10173) by ensuring secure storage, restricted access, and proper disposal of research data after completion of the study.

Limitations and Rigor

The findings should be interpreted within the context of several methodological limitations. The investigation was limited to Grade 11 students enrolled in three public secondary schools within the Municipality of Sta. Josefa, Agusan del Sur, thereby limiting broader generalization to other educational settings. Furthermore, the use of self-report questionnaires may have introduced social desirability and response biases. Students' academic performance was measured using final grades, which may also reflect influences beyond the variables investigated. Despite these limitations, methodological rigor was strengthened through the use of validated standardized instruments, expert content validation, pilot testing, acceptable internal consistency reliability, stratified random sampling, standardized data collection procedures, and appropriate statistical analyses. These methodological safeguards enhanced the validity, reliability, credibility, and overall trustworthiness of the study findings.

RESULTS AND DISCUSSION

Table 1 presents the summary of the levels of academic procrastination and learners' attitudes toward Statistics and Probability. The findings indicate that respondents generally exhibited a low level of academic procrastination ($M = 2.38$, Disagree), suggesting that they seldom postponed their academic responsibilities. Among the dimensions, distraction/attention management obtained the highest mean ($M = 2.51$), indicating that maintaining focus during Statistics and Probability learning remains the most common challenge experienced by the respondents. In contrast, test preparation habits recorded the lowest mean ($M = 2.28$), implying that students generally prepared for examinations in a timely manner. The respondents also demonstrated a favorable attitude toward Statistics and Probability ($M = 2.50$, Agree), with positive emotional attitudes exceeding negative emotional attitudes. The findings suggest that respondents generally possess satisfactory self-regulatory behaviors that enable them to manage academic responsibilities effectively. Academic procrastination has been recognized as a manifestation of self-regulatory failure in which students voluntarily delay intended academic activities despite anticipating negative consequences (Steel, 2007). Students who effectively regulate their learning behaviors are less likely to procrastinate and more likely to sustain academic engagement (Zimmerman, 2002). Likewise, stronger self-regulated learning has been associated with lower levels of procrastination, reduced academic stress, and improved academic achievement (García-Ros et al., 2023; Ragusa et al., 2023).

Although the respondents generally demonstrated low levels of procrastination, distraction remained the most prominent behavioral concern. This finding suggests that competing environmental demands and enjoyable alternative activities continue to interfere with students' concentration while studying Statistics and Probability. Previous studies have shown that environmental distractions, reduced self-efficacy, and negative academic emotions contribute to procrastination by limiting students' ability to remain focused on academic tasks (Chen et al., 2024; Huang et al., 2025). Similarly, procrastination has been described as a strategy for regulating short-term emotions in which students avoid unpleasant academic activities in favor of immediately rewarding alternatives (Sirois & Pychyl, 2013). The respondents' favorable attitudes toward Statistics and Probability indicate that they generally recognize the importance and usefulness of the subject. Students who perceive greater value in learning activities and expect successful outcomes are more likely to participate actively in academic tasks (Eccles & Wigfield, 2002). Positive attitudes toward statistics have consistently been associated with increased confidence, enjoyment, and academic engagement (Abbiati et al., 2021), while favorable attitudes have also been found to promote statistical literacy and meaningful learning experiences (Fernández-Pascual et al., 2025). These findings suggest that maintaining positive attitudes while strengthening students' attentional control and self-regulatory skills may further improve learning outcomes in Statistics and Probability.

Table 1
Summary of the Levels of Academic Procrastination and Learners' Attitudes Toward Statistics and Probability

Variable	Dimension	Mean	Interpretation	Rank
Academic Procrastination	Distraction/Attention Management	2.51	Agree	1
	Timeliness/Delay of Work	2.38	Disagree	2
	Task Avoidance/Forgetfulness	2.33	Disagree	3
	Test Preparation Habits	2.28	Disagree	4
	Overall	2.38	Disagree	
Learners' Attitudes	Positive Emotional Attitudes	2.83	Agree	1
	Negative Emotional Attitudes	2.23	Disagree	2
	Overall	2.50	Agree	

Table 2 presents the distribution of students' performance in Statistics and Probability. The results reveal that most respondents achieved high levels of academic performance, with more than half obtaining Outstanding ratings and nearly one-third achieving Very Satisfactory performance. These findings indicate that the majority of students successfully attained the expected learning competencies prescribed in the Senior High School curriculum. Academic performance reflects students' ability to achieve intended learning outcomes through the combined influence of cognitive, motivational, and behavioral factors (York et al., 2015). Learners who regulate their learning processes by planning, monitoring progress, and evaluating their performance are more likely to attain higher academic achievement (Zimmerman, 2002). Furthermore, stronger self-regulated learning has been associated with reduced procrastination, lower academic stress, and improved academic performance (García-Ros et al., 2023; Ragusa et al., 2023). The generally high academic performance observed in this study may be attributed to respondents' favorable attitudes and relatively low levels of academic procrastination. These findings suggest that students possess learning behaviors that enable them to meet the academic demands of Statistics and Probability. Continued implementation of learner-centered instructional strategies that promote independent learning, sustained motivation, and effective study habits may help maintain and further improve students' academic performance.

Table 2
Students' Performance in Statistics and Probability

Grade Range	Descriptive Rating	Frequency	Percentage
90–100	Outstanding	98	52.13
85–89	Very Satisfactory	54	28.72
80–84	Satisfactory	26	13.83
75–79	Fairly Satisfactory	10	5.32
Total		188	100.00

Table 3 presents the relationships among academic procrastination, learners' attitudes, and students' performance in Statistics and Probability. The analysis revealed a very strong negative relationship between academic procrastination and academic performance, indicating that students who reported higher levels of procrastination generally obtained lower academic achievement. Conversely, learners' attitudes demonstrated a negligible and statistically nonsignificant relationship with students' performance. The inverse relationship between academic procrastination and academic performance supports previous evidence identifying procrastination as one of the strongest behavioral predictors of poor academic achievement (Steel, 2007). Students who frequently delay academic tasks often experience insufficient preparation, increased academic stress, and weaker learning outcomes (Kim & Seo, 2015). More recent meta-analytic findings likewise confirmed that passive procrastination consistently reduces students' academic performance across educational settings (Kooren et al., 2024). The Pearson correlation analysis revealed a very strong negative relationship between academic procrastination and students' performance ($r = -0.862$, $p < .001$), indicating that students who reported higher levels of procrastination consistently obtained lower grades in Statistics and Probability. This exceptionally strong relationship suggests that procrastination-related behaviors, including delaying academic work, becoming distracted, postponing test preparation, and avoiding difficult tasks, substantially influence students' academic achievement within the present educational context. Considering that more than half of the respondents attained Outstanding academic performance (52.13%) while simultaneously reporting generally low levels of academic procrastination (overall $M = 2.38$), the findings reinforce the importance of behavioral self-regulation in facilitating successful learning outcomes. Nevertheless, the exceptionally high correlation should be interpreted cautiously because academic achievement may also be influenced by instructional quality, prior mathematical ability, learning strategies, and other contextual variables that were beyond the scope of the present investigation. The absence of a significant relationship between learners' attitudes and academic performance suggests that favorable attitudes alone may not be sufficient to improve academic achievement. Although positive attitudes encourage students to value Statistics and Probability and increase their willingness to participate in learning activities, these attitudes do not necessarily translate into higher grades unless accompanied by effective behavioral regulation. Recent evidence indicates that attitudes often influence achievement indirectly through variables such as statistics anxiety and academic procrastination (Lethbridge et al., 2024). Similarly, favorable attitudes toward statistics contribute to engagement and statistical literacy but require consistent self-regulatory behaviors to improve academic performance (Fernández-Pascual et al., 2025).

Table 3
Relationship Between the Study Variables

Variables	Pearson's r	p -value	Interpretation	Decision
Academic Procrastination and Students' Performance	-0.862	< .001	Very High Negative Correlation	Reject H_0
Learners' Attitudes and Students' Performance	0.049	.501	Negligible Positive Correlation	Fail to Reject H_0

Table 4 presents the multiple regression analysis predicting students' performance in Statistics and Probability. Prior to interpreting the regression coefficients, the overall regression model was examined to determine whether academic procrastination and learners' attitudes jointly predicted students' performance in Statistics and Probability. The analysis demonstrated that the regression model significantly explained variations in students' academic performance. Examination of the standardized regression coefficients revealed that academic procrastination emerged as the only significant predictor of students' performance ($\beta = -0.861$, $t = -23.125$, $p < .001$), whereas learners' attitudes did not significantly predict academic performance ($\beta = 0.036$, $t = 0.954$, $p = .341$). These findings indicate that behavioral self-regulation, rather than

students' emotional attitudes toward Statistics and Probability, accounted for differences in academic achievement. The results further suggest that students who consistently avoid procrastination are more likely to achieve higher academic performance regardless of their expressed attitudes toward the subject. The results indicate that academic procrastination significantly predicts students' academic performance, whereas learners' attitudes do not significantly contribute to the prediction model. These findings demonstrate that behavioral regulation explains students' academic achievement more effectively than affective disposition toward the subject. The findings are consistent with Temporal Motivation Theory, which explains that students postpone academic tasks when immediate rewards outweigh delayed academic benefits (Steel & König, 2006). Repeated delays reduce study opportunities and ultimately impair academic achievement (Steel, 2007). Likewise, students possessing stronger self-regulatory skills are more likely to organize their learning, maintain motivation, and achieve higher academic performance (Zimmerman, 2002). Previous studies have similarly reported that effective self-regulation reduces procrastination while improving students' academic success (García-Ros et al., 2023; Ragusa et al., 2023). The nonsignificant contribution of learners' attitudes indicates that positive perceptions of Statistics and Probability alone are insufficient to improve academic achievement. Although favorable attitudes encourage engagement and motivation, students must consistently translate these positive dispositions into productive learning behaviors to achieve higher levels of academic performance (Lethbridge et al., 2024; Fernández-Pascual et al., 2025).

Table 4
Multiple Linear Regression Analysis Predicting Students' Performance in Statistics and Probability

Predictor	β	t	p	Decision
Academic Procrastination	-0.861	-23.125	.000	Significant
Learners' Attitudes	0.036	0.954	.341	Not Significant

Table 5 presents the regression analysis of the dimensions of academic procrastination predicting students' performance in Statistics and Probability. The findings indicate that task avoidance exerted the strongest negative influence on students' academic performance, followed by delay of work, distraction/attention management, and test preparation habits. These results suggest that students who avoid challenging Statistics and Probability tasks are more likely to experience lower academic achievement. Task avoidance has been identified as a central behavioral characteristic of academic procrastination because students frequently postpone difficult academic activities to reduce temporary emotional discomfort (Svartdal & Løkke, 2022). Negative academic emotions, lower self-efficacy, and environmental distractions further increase avoidance behaviors, thereby contributing to poorer academic performance (Chen et al., 2024; Huang et al., 2025). Furthermore, students who effectively regulate their motivation and learning strategies are less likely to avoid challenging tasks and more likely to achieve higher academic outcomes (Grunschel et al., 2016; Zimmerman, 2002). These findings suggest that instructional interventions should prioritize strengthening students' persistence, self-regulated learning, and problem-solving confidence while reducing avoidance behaviors through scaffolded learning activities, timely feedback, and structured academic support.

Table 5
Regression Analysis of the Dimensions of Academic Procrastination Predicting Students' Performance

Predictor	B	β	t	p
Delay of Work	-2.065	-0.218	-3.570	.000
Distraction/Attention Management	-1.643	-0.163	-2.546	.012
Test Preparation Habits	-1.697	-0.154	-2.328	.021
Task Avoidance/Forgetfulness	-3.798	-0.437	-7.570	.000

Conclusion and Recommendations

This study examined the effects of academic procrastination and learners' attitudes on the performance of Grade 11 students in Statistics and Probability in selected public secondary schools in the Municipality of Sta. Josefa, Agusan del Sur. The findings revealed that respondents generally exhibited a low level of academic procrastination and a favorable attitude toward Statistics and Probability. Although students demonstrated positive emotional attitudes and relatively low negative emotional attitudes, only academic procrastination showed a significant relationship with academic performance. Specifically, academic procrastination exhibited a very strong negative correlation with students' performance and emerged as the only significant predictor in the regression model. Among its dimensions, task avoidance had the greatest negative influence on students' academic achievement, followed by delay of work, distraction/attention management, and test preparation habits. The findings support the view that behavioral self-regulation plays a more critical role in students' academic success than positive attitudes alone. While favorable attitudes toward Statistics and Probability may encourage students' interest and engagement, these dispositions do not necessarily translate into improved academic performance without effective learning behaviors. Therefore, reducing procrastination and strengthening students' self-regulated learning skills are essential for improving achievement in Statistics and Probability. The study contributes empirical evidence that emphasizes the importance of behavioral interventions, particularly those addressing task avoidance, time management, and attentional control, in promoting better academic outcomes among senior high school students.

Based on the findings, school administrators, teachers, and guidance counselors should collaboratively implement intervention programs that strengthen students' self-regulated learning, time management, and academic discipline. Particular emphasis should be placed on minimizing task avoidance because it emerged as the strongest dimension negatively influencing academic performance, followed by delay of work, distraction, and inadequate test preparation. Teachers are encouraged to employ learner-centered instructional approaches that encourage timely task completion,

sustained engagement, and persistence in solving complex statistical problems through scaffolded instruction, continuous formative assessment, and constructive feedback. Guidance counselors may further support these initiatives by conducting seminars on procrastination management, goal setting, and effective study habits. Future studies may incorporate additional predictors such as mathematics self-efficacy, statistics anxiety, resilience, parental involvement, instructional practices, and digital learning behaviors using longitudinal or experimental research designs to obtain a more comprehensive understanding of students' academic performance in Statistics and Probability.

References

- Abbiati, N. N., Fabrizio, M. D. C., López, M. V., Pérez, A., Plencovich, M. C., & Cueto, G. (2021). Attitudes related to students' performance in statistics in university programs in Argentina. *Statistics Education Research Journal*, 20(2). <https://doi.org/10.52041/serj.v20i2.356>
- Ávila-Toscano, J. H., Delgado, L. V., & Rueda, Y. A. B. (2025). Statistical anxiety in university students: The role of negative problem orientation, worry, and their consequences. *Statistics Education Research Journal*, 24(1). <https://doi.org/10.52041/serj.v24i1.705>
- Brignardello, M. P. G., Paniagua, Á. S., & López-González, M. A. (2023). Academic procrastination in children and adolescents: A scoping review. *Children*, 10(6), Article 1016. <https://doi.org/10.3390/children10061016>
- Chen, B., Zhang, H., & Li, S. (2024). The impact mechanism of negative academic emotions on academic procrastination: The mediating and moderating roles of self-efficacy and goal orientation. *Education Sciences*, 14(11), Article 1232. <https://doi.org/10.3390/educsci14111232>
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109–132. <https://doi.org/10.1146/annurev.psych.53.100901.135153>
- Fernández-Pascual, R., Mariscal, D. C., Pinto, M., & Marín-Jiménez, A. E. (2025). Attitudes of university students toward statistics as a pathway to data literacy: A meta-analysis. *Journal of Statistics and Data Science Education*. Advance online publication. <https://doi.org/10.1080/26939169.2025.2475765>
- García-Ros, R., Pérez-González, F., Tomás, J. M., & Sancho, P. (2023). Effects of self-regulated learning and procrastination on academic stress, subjective well-being, and academic achievement in secondary education. *Current Psychology*, 42, 26602–26616. <https://doi.org/10.1007/s12144-022-03759-8>
- Grunschel, C., Schwinger, M., Steinmayr, R., & Fries, S. (2016). Effects of using motivational regulation strategies on students' academic procrastination, academic performance, and well-being. *Learning and Individual Differences*, 49, 162–170. <https://doi.org/10.1016/j.lindif.2016.06.008>
- Huang, S., Li, Z., Li, J., & Ding, X. (2025). A network analysis of academic procrastination, psychological and environmental factors among medical students. *BMC Psychology*, 13, Article 525. <https://doi.org/10.1186/s40359-025-02916-5>
- Kim, K. R., & Seo, E. H. (2015). The relationship between procrastination and academic performance: A meta-analysis. *Personality and Individual Differences*, 82, 26–33. <https://doi.org/10.1016/j.paid.2015.02.038>
- Kooren, N. S., van Noijen, C. C. A., & Paas, F. (2024). The influence of active and passive procrastination on academic performance: A meta-analysis. *Education Sciences*, 14(3), Article 323. <https://doi.org/10.3390/educsci14030323>
- Lethbridge, L. E., Marshall, A. D., & Jauch, M. (2024). Attitudes towards statistics and statistical performance: A mediation model of statistics anxiety and academic procrastination. *British Journal of Educational Psychology*, 94(4), 1208–1223. <https://doi.org/10.1111/bjep.12714>
- Ragusa, A., González-Bernal, J., Trigueros, R., Caggiano, V., Navarro, N., Mínguez-Mínguez, L. A., Obregón, A. I., & Fernández-Ortega, C. (2023). Effects of academic self-regulation on procrastination, academic stress and anxiety, resilience and academic performance in a sample of Spanish secondary school students. *Frontiers in Psychology*, 14, Article 1073529. <https://doi.org/10.3389/fpsyg.2023.1073529>
- Richardson, F. C., & Suinn, R. M. (1972). The mathematics anxiety rating scale: Psychometric data. *Journal of Counseling Psychology*, 19(6), 551–554. <https://doi.org/10.1037/h0033456>
- Sirois, F. M., & Pychyl, T. A. (2013). Procrastination and the priority of short-term mood regulation: Consequences for future self. *Personality and Individual Differences*, 55(5), 585–590. <https://doi.org/10.1016/j.paid.2013.05.005>
- Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, 31(4), 503–509. <https://doi.org/10.1037/0022-0167.31.4.503>
- Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, 133(1), 65–94. <https://doi.org/10.1037/0033-2909.133.1.65>
- Steel, P., & König, C. J. (2006). Integrating theories of motivation. *Academy of Management Review*, 31(4), 889–913. <https://doi.org/10.5465/AMR.2006.22527462>
- Svardtal, F., & Løkke, J. (2022). The ABC of academic procrastination: Functional analysis of a detrimental habit. *Frontiers in Psychology*, 13, Article 1019261. <https://doi.org/10.3389/fpsyg.2022.1019261>
- Svardtal, F., Sæle, R. G., Dahl, T. I., Nemtcen, E., & Gamst-Klaussen, T. (2022). Study habits and procrastination: The role of academic self-efficacy. *Scandinavian Journal of Educational Research*, 66(7), 1141–1160. <https://doi.org/10.1080/00313831.2021.1959393>
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53–55. <https://doi.org/10.5116/ijme.4dfb.8dfj>
- Wen, R., & Dubé, A. K. (2022). A systematic review of secondary students' attitudes towards mathematics and its relations with mathematics achievement. *Journal of Numerical Cognition*, 8(2). <https://doi.org/10.5964/jnc.7937>
- York, T. T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success. *Practical Assessment, Research & Evaluation*, 20(1), Article 5. <https://doi.org/10.7275/hz5x-tx03>
- Zeidner, M. (1991). Statistics and mathematics anxiety in social science students: Some interesting parallels. *British Journal of Educational Psychology*, 61(3), 319–328. <https://doi.org/10.1111/j.2044-8279.1991.tb00989.x>
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41(2), 64–70. https://doi.org/10.1207/S15430421TIP4102_2