Non-Intellectual Factors Influencing the Statistics Performance of Graduate School Students in Northeastern College, Santiago City: Basis in Designing Intervention Program

Dr. Adriano G. Sabado

Professor, Northeastern College Santiago City, Philippines

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ABSTRACT

This study examined the non-intellectual factors influencing the Statistics performance of Graduate School students in Northeastern College, Santiago City. Utilizing a descriptive-quantitative research design, data were gathered from 356 graduate students across different master's program through a validated 76-item questionnaire. Findings revealed that student-related issues, teacher practices, parental involvement, instructional materials, teaching methods, administrative and supervisory support, and school environment were perceived as slightly to moderately serious factors affecting performance. However, correlation analysis indicated no statistically significant relationship between these factors and students' actual Statistics achievement. Despite the presence of challenges, a substantial number of students attained 'Proficient' or 'Approaching Proficiency' levels. The results suggest that while non-intellectual factors exert some influence, personal motivation and broader socio-environmental variables may play a more critical role. Based on the findings, an intervention program was proposed to strengthen Statistics performance by enhancing teaching practices, increasing parental engagement, improving resource allocation, and promoting a more supportive school environment.

Keywords: Statistics Achievement, Non-intellectual Factors, Graduate School Students, Student Motivation, Educational Interventions, Academic Performance

INTRODUCTION

Statistics, as a foundational subject, plays a pivotal role in various facets of human life, serving as a key tool for problem-solving and prediction across diverse fields of study. Its significance extends to domestic and business transactions, scientific breakthroughs, technological advancements, and decision-making in real-life situations. The competence of individuals in Statistics is therefore crucial for personal development and national progress.

Graduate School students' performance in Statistics is an important predictor of their core abilities and future academic achievement. Statistics is a foundational subject in many disciplines, and competency in this subject is required for progressing to more complicated topics and beyond. Concerns are frequently raised about students' different levels of mathematical success, with factors such as teaching approaches, curriculum design, and individual learning styles all playing important roles. A strong Statistics foundation not only improves cognitive ability, but also provides students with problem-solving skills that are useful in a variety of situations. Thus, a concerted effort to improve Statistics performance among Graduate School students is imperative for their holistic development and future academic achievements.

Statistics education has long been recognized as a cornerstone of academic and professional success. In this regard, Ariyanti and Santoso (2020) emphasized the critical role of Statistics in equipping students with essential problem-solving abilities and logical reasoning skills competencies that are indispensable for thriving in fields

such as engineering, finance, and the sciences. Complementing this perspective, Agyeman and Nkum (2015) further argued that Statistics permeates every aspect of life, providing foundational skills that transcend traditional academic boundaries.

However, despite its acknowledged importance, mastering Statistics remains a significant challenge for many students. As noted by Ocampo, Mobo, and Cutillas (2023), variations in students' learning styles often contribute to difficulties in mathematical achievement. Consequently, enhancing mathematical learning requires a multifaceted approach. Among the critical factors to address is students' self-confidence in their mathematical abilities. In support of this, studies conducted by Azucena et al. (2022) and Kunhertanti and Santosa (2018) suggest that confidence plays a vital role in shaping students' performance in Statistics.

Nevertheless, accurately measuring this self-confidence presents its own set of challenges. As Foster (2016) pointed out, broad assessments often fail to capture the nuances of students' confidence across specific mathematical domains. This issue becomes even more pressing when contextualized within the Philippine educational landscape. Notably, the 2018 Programme for International Student Assessment (PISA) revealed that Filipino students continue to face significant difficulties in Statistics, underscoring the urgent need for targeted interventions.

The 2018 Programme for International Student Assessment (PISA) results revealed that Filipino students were among the lowest performers globally, with fewer than 20% demonstrating basic proficiency in Statistics. Alarmingly, more than half of the students scored below the minimum proficiency level, revealing significant gaps in their mathematical skills compared to their international peers (Bernardo et al., 2022). This concerning trend persisted in the subsequent PISA 2022 assessment, where the Philippines ranked 76th out of 81 participating countries in Statistics and science. Only 16% of Filipino students achieved Level 2 proficiency, the baseline level required for basic competency compared to the Organisation for Economic Co-operation and Development (OECD) average of 69%. These results underscore an urgent and ongoing need for the development and implementation of targeted strategies aimed at strengthening Statistics education across the country.

Several studies have identified a range of factors contributing to low performance in Statistics. These include student-related aspects such as interest and study habits, and teacher-related elements like personality traits, instructional methods, and use of teaching materials (Landicho, 2021).

This study aims to explore the non-intellectual factors influencing the Statistics performance of Graduate School students of Northeastern College, Santiago City. It seeks to identify variables such as teacher quality, curriculum design, parental involvement, and student motivation that significantly impact learning outcomes. The findings of this research will inform stakeholders, teachers, school administrators, and parents on the best practices and strategies to address specific challenges in Statistics education. Ultimately, this study aims to develop a program that will improve the academic performance of Graduate School students in Statistics contributing to the overall quality of education in Northeastern College, graduate school.

Objectives of the Study

This study generally aimed to assess the non-intellectual factors affecting the Statistics performance of Graduate School students in Northeastern College, Santiago City.

Specifically, it sought to achieve the following objectives:

To determine the extent to which the following non-intellectual factors influence the Statistics performance of Graduate School students:

Student-related factors,
Teacher-related factors,
Administrator-related factors,. Instructional materials,
Methods and strategies,
Evaluative tools,
Administrative support,
Supervisory support, and
School environment.

To determine the Grade Point Average (GPA) in Statistics of Graduate School students in Northeastern College.

To examine the relationship between the identified non-intellectual factors and the Statistics academic performance of Graduate School students.

To develop an intervention program that will be implemented to enhance the academic performance of Graduate School students in Northeastern College.

METHODOLOGY

This study employed a quantitative research method with a descriptive-correlational design to analyze variables using statistical procedures. It was conducted in the different master's program offered by the Northeastern College, Graduate School.

Sampling Design

The research targeted First Year students for the first semester, school year 2025-2026. Using simple random sampling, a total of 356 respondents were selected from a population of 726 students across different master's program, with sample sizes determined using Calmorin's formula at a 95% confidence level.

Research Instrument

The data for this study was collected using a 76-item questionnaire adapted from Fernandez's (2022). The instrument, with a reliability score of 0.97 (Cronbach's alpha), measured factors affecting students' difficulties in Statistics, including aspects related to students, teachers, parents, instructional materials, teaching methods, evaluation tools, and support from administrators and supervisors.

Statistical Design

The study utilized several statistical tools for data analysis. The weighted mean was used to assess factors affecting students' difficulties in Statistics, including aspects such as students, teachers, parents, instructional materials, and support systems, using a 4-point scale from "Not Serious" to "Extremely Serious." To analyze respondents' grades, the study applied the Department of Education's assessment levels, ranging from "Beginning" to "Advanced" based on their grade point averages. Additionally, Pearson's correlation coefficient was employed to examine the relationship between these factors and students' academic performance in Statistics.

RESULTS AND DISCUSSIONS

Extent of Non-intellectual factors affecting the Statistics performance of Graduate School students.

Table 1. Extent of Non-intellectual factors affecting the Statistics performance of Graduate School students in terms of Student Factor

Statement Indicators	M	SD	INTERPRETATION
1. Frequent absence in mathematics class	2.21	0.96	Slightly Serious
2. Behavioral discomfort that distress an individual experience	2.42	0.89	Slightly Serious
3. Failure to adhere classroom rules and regulations	2.24	0.88	Slightly Serioust
4. Failure to do daily assignments.	2.61	0.89	Moderately Serious
5. Failure to submit projects on specified date	2.72	0.90	Moderately Serious
6. Experience a problematic health problems	2.62	0.86	ModeratelySerious
7. Negative Attitude towards learning	2.50	0.89	Slightly Serious
8. Poor foundation of the four fundamental operations in Mathematics.	2.45	0.83	Slightly Serious
9. Poor reading comprehension skills.	2.56	0.87	ModeratelySerious
10. Habit of being late in class.	2.28	0.92	Slightly Serious
Category Mean	2.46	0.17	Slightly Serious

As revealed in Table 1, the highest mean score is associated with the "Failure to submit projects on the specified date" (M=2.72), indicating that this factor is perceived as moderately serious by the students and interpreted as moderate extent. This is closely followed by "Experience a problematic health problem" (M=2.62) and "Failure to do daily assignments" (M=2.61), both are also considered moderately serious. Another moderately serious factor is "Poor reading comprehension skills" (M=2.56).

Other factors perceived as slightly serious and slight extent include "Negative attitude towards learning" (M=2.50), "Poor foundation of the four fundamental operations in Statistics" (M=2.45), and "Behavioral discomfort that distress an individual experience" (M=2.42). "Habit of being late in class" (M=2.28), "Failure to adhere to classroom rules and regulations" (M=2.24), and "Frequent absence in Statistics class" (M=2.21) also fall under the slightly serious category.

Overall, the category mean of 2.46 suggests that, on average, the student-related factors contribute to a slightly serious and slight extent level of seriousness in Statistics performance among Graduate School students. This implies that some factors are more challenging than others, collectively, they pose a moderate challenge, with the need for targeted interventions to address specific difficulties like project submission, health problems, and daily assignments to improve overall Statistics performance.

The data suggests that while student factors are generally perceived as slightly serious, addressing challenges related to homework completion, meeting project deadlines, health issues, and comprehension of mathematical concepts and texts could positively impact Statistics performance among Graduate School students. The findings is in consonance to the study conducted by Lee and Kim (2020) who examines the impact of student-centered learning

on Statistics achievement and attitudes of students. The results suggest that student-centered learning can improve Statistics performance and promote positive attitudes towards Statistics.

Table 2 Extent of Non-intellectual factors affecting the Statistics performance of Graduate School students in terms of Teacher Factor

Statement Indicators	M	SD	INTERPRETATION
1. Failure to teach the subject daily	2.51	0.93	Slightly Serious
2. Unfair preferential treatment to a student or favoritism	2.47	0.94	Slightly Serioust
3. Frequent absences and tardiness	2.27	0.90	Slightly Serious
4. Inability to formulate higher order thinking skills questions	2.45	0.92	Slightly Serious
5. Lack of knowledge in manipulating new technologies	2.32	0.89	Slightly Serious
6. Negative attitude in attending higher level of trainings due to financial constraints.	2.40	0.91	Slightly Serious
7. Not sensitive to the needs of the learners	2.45	0.92	Slightly Serious
8. Uses only one method/strategy in teaching the whole year round.	2.31	0.93	Slightly Serious
Category Mean	2.40	0.09	Slightly Serious

Table 2 illustrates perception into the extent to which various teacher-related factors influence the difficulties in the Statistics performance of Graduate School students. The factor causing the most serious is "Failure to teach the subject daily" (M = 2.5). This is followed by "Unfair preferential treatment to a student or favoritism" (M = 2.47). Both "Inability to formulate higher-order thinking skills questions" (M = 2.45) and "Not sensitive to the needs of the learners" (M = 2.45) share the same rating. Additional factors such as "Negative attitude in attending higher level of trainings due to financial constraints" (M = 2.40), "Lack of knowledge in manipulating new technologies" (M = 2.32), "Uses only one method/strategy in teaching the whole year round" (M = 2.31), and "Frequent absences and tardiness" (M = 2.27) also fall under the "Slightly serious" category which was interpretated slight extent of seriousness.

The overall category mean of (M = 2.40) indicates that the teacher-related factors are, on average, slightly serious and slight extent for students . This suggests that while these issues do affect Statistics performance, they are not overwhelmingly problematic but do require attention to improve the educational experience.

The data suggests that while teacher factors are generally perceived as slightly difficult, addressing challenges related to consistency in lesson delivery, bias awareness, promotion of critical thinking, attendance, and technology integration could positively impact Statistics performance among Graduate School students. Similarly, Okoro, E. O., & Okeke, C. C. (2018) proves that teacher-related factors, such as teaching experience, educational level, and classroom environment, significantly influenced Statistics achievement among Graduate School students. The study recommended that teachers should be trained to develop effective teaching strategies and classroom management skills.

Table 3 Extent of Non-intellectual factors affecting the Statistics performance of Graduate School students in terms of Administrator Factor

Statement Indicators	M	SD	INTERPRETATION
1. Failure to give recognition to teachers with exemplary performance.	2.46	0.91	Slightly Serious
2. Failure to make sound decision – making due to political Interventions	2.35	0.81	Slightly Serious
3. Failure to observe classes regularly.	2.37	0.94	Slightly Serious
4. Inability to conduct School-based In-Service Training.	2.35	0.86	Slightly Serioust
5. Inability to evaluate Mathematics instruction	2.45	0.93	Slightly Serious
6. Inability to implement proposed projects due to financial Constraints	2.40	0.85	Slightly Serious
7. Lack of human relations skills	2.29	0.97	Slightly Serious
8. Playing favoritism among teachers	2.54	1.07	Moderately Serious
9. Projects an image of superiority	2.36	0.89	Slightly Serious
10. Spends more time on administrative tasks rather than supervisory activity	2.34	0.96	Slightly Serious
Category Mean	2.39	0.07	Slightly Serious

Table 3 shows the extent of non-intellectual factors affecting the Statistics performance of Graduate School students in terms of administrator factor. The highest mean was for "Playing favoritism among teachers" (M = 2.54) indicating it is moderately serious which was perceived as moderately extent. Other factors were seen as slightly serious and slight extent, including "Failure to give recognition to teachers with exemplary performance" (M = 2.46), "Inability to evaluate Statistics instruction" (M = 2.45), "Inability to implement proposed projects due to financial constraints" (M = 2.40), and "Failure to observe classes regularly" (M = 2.37).

Additional slightly difficult factors included "Projects an image of superiority" (M = 2.36), "Failure to make sound decision-making due to political interventions" (M = 2.35), "Inability to conduct School-based In-Service Training" (M = 2.35), "Spends more time on administrative tasks rather than supervisory activity" (M = 2.34), and "Lack of human relations skills" (M = 2.29).

The overall category mean for administrator factors was 2.39, indicating these factors were generally perceived as slightly serious and slight extent. This suggests consistent challenges related to administrative actions and behaviors that slightly hinder the Statistics performance of Graduate School students. Addressing these issues could improve academic outcomes by reducing administrative difficulties faced by teachers and students.

The result is in parallel to the research study conducted by Ladson-Billings, G., & Tate, W. F. (2019) who examined the impact of teacher biases on Statistics performance among students from diverse backgrounds. The review found that teacher biases can significantly affect students' motivation and self-efficacy, leading to poorer Statistics performance.

Table 4 Extent of non-intellectual factors affecting the Statistics performance of Graduate School students in terms of Parent Factor

Statement Indicators	M	SD	INTERPRETATION
1. Failure to assist their children in school work	2.47	1.03	Slightly Serious
2. Inability to pay school obligations due to poverty	2.41	0.98	Slightly Serious
3. Inability to provide the needed school materials for their children due to financial constraints.	2.54	0.98	Moderately Serious
4. Indifferent attitude in allowing their children to join contests of various levels	2.41	0.93	Slightly Serious
5. Lukewarm attitude of parents to support the program/activities of the School	2.28	0.94	Slightly Serious
6. Misconception on the policies of the School.	2.31	0.89	Slightly Serious
7. Negative attitude in attending school assemblies/meetings	2.28	1.02	Slightly Serious
8. Unpleasant relationship between parents, teachers, and Administrator	2.33	1.01	Slightly Serious
9. Unpleasant relationships among members of the family	2.24	1.01	Slightly Serious
Category Mean	2.36	0.10	Slightly Serious

Table 4 illustrates the extent to which various parent-related factors affect the non-intellectual factors in Statistics performance of Graduate School students. The most challenging aspect is the inability of parents to provide necessary school materials due to financial constraints (M = 2.54), which is considered moderately serious and perceived as moderate extent Following this, failing to assist children in school work (M = 2.47) and displaying an indifferent attitude towards allowing children to participate in contests (M = 2.41) are perceived as slightly serious. Similarly, the inability to meet school obligations due to poverty (M = 2.41) and misconceptions about school policies (M = 2.31) are also rated as slightly serious and perceived as slight extent.

Moreover, the lukewarm attitude of parents towards supporting school programs/activities (M =2.28), negative attendance at school assemblies/meetings (M =2.28), unpleasant relationships between parents, teachers, and administrators (M = 2.33), and unpleasant relationships among family members (M = 2.24) are perceived as slightly serious, albeit to varying degrees.

Overall, the category mean for parental factors is 2.36 suggesting that the challenges faced by Graduate School students in Statistics performance due to parental factors are generally perceived as slightly serious and slight extent. This implies that while these challenges exist, they are not insurmountable and could potentially be addressed through targeted interventions and support mechanisms.

Moreover, the findings on parent factor imply that while financial constraints and lack of engagement are notable issues, they generally exert a moderate influence on students' difficulties in Statistics performance. This proves by Huang, Y., & Wang, X. (2015) who found that parental involvement, including factors such as attending school events and communicating with teachers, has a positive impact on students' Statistics achievement.

Table 5 Extent of non-intellectual factors affecting the Statistics performance of Graduate School students in terms of Instructional Materials Factor

Statement Indicators	M	SD	INTERPRETATION
1. Dearth of reference books and other supplementary reading Materials	2.37	0.98	Slightly Serious
2. Financial constraints to purchase the needed materials	2.47	0.82	Slightly Serious
3. Inadequate modern materials	2.42	0.86	Slightly Serious
4. Insufficient copies of charts, pictures, and illustrations	2.35	0.85	Slightly Serious
5. Low quality of books/materials issued to Mathematics	2.37	0.94	Slightly Serious
Category Mean	2.40	0.05	Slightly Serious

Table 5 details the extent to which non-intellectual factors related to instructional materials. The highest mean was observed for "Financial constraints to purchase the needed materials" (M = 2.47), indicating a slightly serious situation and perceived as slight extent. This was followed closely by "Inadequate modern materials" (M = 2.42) and "Low quality of books/materials issued to Statistics" (M = 2.37), both also perceived as slightly serious. Similarly, the dearth of reference books and supplementary reading materials (M = 2.37) and insufficient copies of charts, pictures, and illustrations (M = 2.35) were considered slightly serious challenges.

Overall, the category mean for instructional materials factors was 2.40, indicating that the seriousness faced by Graduate School students in Statistics performance due to instructional materials are generally perceived as slightly serious and slight extent. This suggests a need for addressing issues such as financial constraints, inadequacy of modern materials, and the quality of issued materials to improve the learning environment and subsequently enhance student performance in Statistics.

The data suggests that the lack and inadequacy of instructional materials present a slight difficulty, addressing financial constraints and improving the availability and quality of educational resources could positively impact Statistics performance among Graduate School students. Goyal, S., & Kumar, A. (2020) in their systematic review found that instructional materials were a critical factor in improving Statistics performance among students, and that the lack of these materials was a significant barrier to learning.

Table 6 Extent of non-intellectual factors affecting the Statistics performance of Graduate School students in terms of Methods and Strategies Factor

Statement Indicators	M	SD	INTERPRETATION
1. Teachers employ methods/strategies that are not suitable to the nature of the subject matter and learners.	2.38	0.97	Slightly Serious
2. Teachers inability to deal with students with poor Mathematics background	2.45	0.91	Slightly Serious
3. Teachers introduce too many innovations in the field	2.40	0.85	Slightly Serious
4. Teachers prefer to use traditional methods in teaching	2.24	0.90	Slightly Serious
5. Teachers used the same methods throughout the year Approaches	2.24	0.92	Slightly Serious
Category Mean	2.34	0.10	Slightly Serious

Table 6 outlines the extent to which various methods and strategies employed by teachers that affect the the Statistics performance of Graduate School students.

The highest challenge, with a mean of 2.45 is teachers struggling to help students with weak math backgrounds. Similarly, using methods not suitable for the subject and learners (M = 2.38) and introducing too many new methods (M = 2.40) are seen as slightly serious. Teachers' preference for traditional methods (M = 2.24) and sticking to the same methods all year (M = 2.24) are also slight challenges and slight extent.

Overall, the average serious rating for method and strategy factors is 2.34 and perceived as slight extent. This suggests that while there are challenges, they're manageable with targeted support.

The data on methods and strategies factor suggests that the teaching methods and strategies employed present slight difficulties, addressing the specific issues of adapting teaching strategies to student needs and balancing innovation with effective traditional methods could positively impact the Statistics performance of Graduate School students. The study conducted by Lee, Kim, and Lee (2015) found that teachers' beliefs and practices had a significant impact on student Statistics achievement, and that teachers who believed in the importance of Statistics and used inquiry-based instruction had higher-achieving students.

Table 7 Extent of non-intellectual factors affecting the Statistics performance of Graduate School students in terms of Evaluative Factor

Statement Indicators	M	SD	INTERPRETATION
1. Difficulty of teachers to do item analysis every grading period	2.39	0.99	Slightly Serious
2. Difficulty of teachers in formulating higher-order thinking skills (HOTS) questions	2.43	0.88	Slightly Serious
3. Failure of teachers to evaluate student's performance daily	2.34	0.84	Slightly Serious
4. Financial constraints in the production of test materials for every grading period	2.39	0.90	Slightly Serious
5. Teacher–made tests are more discrete than the integrative Type	2.37	0.92	Slightly Serious
Category Mean	2.39	0.03	Slightly Serious

Table 7 presents the extent to which evaluative factors affect the Statistics performance of Graduate School students.

The highest mean was found for the "Difficulty of teachers in formulating higher-order thinking skills (HOTS) questions" (M = 2.43), which is considered slightly serious and perceived as slight extent. Following closely, the "Difficulty of teachers to do item analysis every grading period" (M = 2.39) and the "Financial constraints in the production of test materials for every grading period" (M = 2.39) were also perceived as slightly serious challenges. Similarly, the failure of teachers to evaluate students' performance daily (M = 2.34) and the observation that teacher-made tests are more discrete than the integrative type (M = 2.37) were rated as slightly serious, albeit with slightly lower mean scores.

Overall, the category mean for evaluative factors was 2.39, suggesting that the challenges faced by Graduate School students in Statistics performance due to evaluative factors are generally perceived as slightly serious and slight extent. This indicates the need for improvements in evaluative practices to alleviate these challenges and enhance students' mathematical performance.

Table 8 Extent of non-intellectual factors affecting the Statistics performance of Graduate School students in terms of Administrative Support Factor

Statement Indicators	M	SD	INTERPRETATION
1. Administrators spend more time in administrative work than in supervision.	2.51	0.96	Slightly Serious
2. Always out of the School	2.42	1.01	Slightly Serious
3. It does not involve teachers in planning because the "leader knows best."	2.40	0.96	Slightly Serious
4. Failure to reward teachers for their exemplary performance	2.38	0.90	Slightly Serious
5. Inability to encourage teachers to pursue higher education	2.32	0.91	Slightly Serious
6. Inability to support teachers in the procurement of instructional materials	2.35	0.95	Slightly Serious
7. No encouragement from the administrators in the implementation of the programs	2.31	0.94	Slightly Serious
8. Seldom provides staff with opportunities for external and internal professional development	2.26	0.95	Slightly Serious
Category Mean	2.37	0.07	Slightly Serious

Table 8 provides insight into the extent to which administrative support factors influence the Statistics performance of Graduate School students. The highest mean in the table belongs to the statement indicating that administrators spend more time on administrative tasks than on supervision (M = 2.51), which is interpreted as slightly serious and perceived as slight extent. Following this, the factors of administrators frequently being absent from the school (M = 2.42) and not involving teachers in planning due to a "leader knows best" mentality (M = 2.40) are also perceived as slightly serious. Similarly, the failure to recognize and reward teachers for their exemplary performance (M = 2.38), the inability to motivate teachers to pursue higher education (M = 2.32), and the lack of support for teachers in acquiring instructional materials (M = 2.35) are rated as slightly serious challenges. Furthermore, the absence of encouragement from administrators in implementing programs (M = 2.31) and the infrequent provision of opportunities for staff professional development (M = 2.26) are also considered slightly serious.

Overall, the category mean for administrative support factors is 2.37, suggesting that the challenges faced by Graduate School students in Statistics performance due to administrative support factors are generally perceived as slightly serious and slight extent. This implies that while these challenges exist, they may not be insurmountable and could potentially be addressed through targeted interventions and support mechanisms.

The data implies that while administrative support is perceived as slightly difficult, addressing issues such as prioritizing supervision over administrative tasks, promoting teacher involvement in decision-making, and providing adequate support for professional development could positively impact Statistics performance among Graduate School students. Lee, V. E., & Bryk, A. S. (2016) also highlighted that school leadership, teacher collaboration, and administrative support were all important factors in predicting student outcomes, including Statistics performance.

Table 9 Extent of non-intellectual factors affecting the Statistics performance of Graduate School students in terms of Supervisory Support Factor

Statement Indicators	M	SD	INTERPRETATION
1. Failure to conduct demonstration teachings on new trends in teaching	2.40	0.98	Slightly Serious
2. Failure to conduct in-service training	2.37	0.84	Slightly Serious
3. Failure to motivate the staff to try new innovations	2.38	0.91	Slightly Serious
4. Failure to work toward the improvement of the instructional program within the School through faculty study groups and other evaluation process	2.41	0.93	Slightly Serious
5. Inability to observe classes	2.37	0.95	Slightly Serious
6. Lack of understanding of the people and strategies of change that are required to get the organization	2.41	0.90	Slightly Serious
7. The mathematics program is not well-monitored	2.30	0.94	Slightly Serious
Category Mean	2.38	0.04	Slightly Serious

Table 9 presents the extent to which supervisory support factors influence the Statistics performance of Graduate School students.

As revealed in Table 9, "Failure to work toward the improvement of the instructional program within the School through faculty study groups and other evaluation processes" (M = 2.41). This suggests a situation that is slightly serious. Following closely are "Lack of understanding of the people and strategies of change that are required to get the organization" (M = 2.41) and "Failure to conduct demonstration teachings on new trends in teaching" (M = 2.40), both also perceived as slightly serious and slight extent. Similarly, "Failure to motivate the staff to try new innovations" (M = 2.38), "Failure to conduct in-service training" (M = 2.37), and "Inability to observe classes" (M = 2.37) are rated as slightly serious challenges. "The Statistics program is not well-monitored" (M = 2.30) is also considered slightly serious, although it has a slightly lower mean compared to the other statements.

Overall, the category mean for supervisory support factors is 2.38, indicating that the challenges faced by Graduate School students in Statistics performance due to supervisory support factors are generally perceived as slightly serious and slight extent. This implies that while improvements are needed, the challenges are not insurmountable and could potentially be addressed through focused efforts to enhance supervisory support within the educational system.

The data on supervisory support factor suggests that while supervisory support is perceived as slightly serious, addressing issues such as facilitating demonstration teachings, providing adequate in-service training, fostering a culture of innovation, and improving program evaluation and monitoring could positively impact Statistics performance among Graduate School students. Akiba *et.al*., (2015) found that teacher support, including supervisory support, was positively related to student achievement in Statistics. In fact, they used data from the Programme for International Student Assessment (PISA) to analyze the relationship between teacher support and student Statistics performance.

Table 10 Extent of Fnon-intellectual factors affecting the Statistics performance of Graduate School students in terms of School Factor

	Statement Indicators	M	SD	INTERPRETATION
1.	Absence of library facilities	2.44	1.01	Slightly Serious
2.	Absence of modern equipment	2.45	0.91	Slightly Serious
3.	Books issued to the field are easily torn.	2.44	0.91	Slightly Serious
4.	Failure to purchase the needed modern materials for daily teaching due to financial constraints	2.47	0.95	Slightly Serious
5.	Inadequacy of reference books	2.42	0.95	Slightly Serious
6.	Overlapping of school activities	2.56	0.98	Slightly Serious
7.	Oversize enrollment in the classroom	2.40	0.95	Slightly Serious
8.	Poor classroom facilities	2.49	1.01	Slightly Serious
9.	Unpleasant relationships among teachers and administrators.	2.37	1.01	Slightly Serious
	Category Mean	2.45	0.06	Slightly Serious

Table 10 presents the extent to which various school-related factors influence the Statistics performance of Graduate School students.

As revealed in Table 10, the highest mean was observed in the statement indicating "Overlapping of school activities" (M = 2.56). Following closely behind are factors such as "Poor classroom facilities" (M = 2.49), and "Failure to purchase the needed modern materials for daily teaching due to financial constraints" (M = 2.47), both of which are also rated as slightly serious challenges and slight extent.

Additionally, issues such as the "Absence of modern equipment" (M = 2.45), "Absence of library facilities" (M = 2.44), and "Books issued to the field are easily torn" (M = 2.44) are perceived as slightly serious. Similarly, concerns like the "Inadequacy of reference books" (M = 2.42), "Oversize enrollment in the classroom" (M = 2.40), and "Unpleasant relationships among teachers and administrators" (M = 2.37) are all rated as slightly serious, though with slightly lower means.

Overall, the collective mean for school factors is 2.45, indicating that the challenges faced by Graduate School students in Statistics performance due to school-related factors are generally perceived as slightly serious and slight extent. This implies that while these challenges exist, they are manageable and could potentially be addressed through strategic interventions and improvements within the school environment.

The data suggests that while school factors are perceived as slightly difficult, addressing issues such as coordinating school activities, improving resource availability, and enhancing the learning environment could positively impact Statistics performance among Graduate School students. Indeed, Hashemi, S., & Jafari, M. (2017) found that school factors such as school size, teacher qualification, and availability of resources were significant predictors of students' Statistics achievement.

The grade point average of the Graduate School students in Statistics

Table 11 Distribution of the Graduate School Students According to their Statistics Academic Performance

Mean Performance Scores	Frequency	Percent	Remarks
90 and above	66	18.54	Advanced
85 - 89	148	41.57	Proficient
80 - 84	92	25.84	Approaching Proficiency
75 - 79	49	13.76	Developing
74 and below	1	0.28	Beginning

As revealed in Table 11, the distribution of 356 Graduate School students based on their Statistics performance scores. The majority of students exhibit a high level of proficiency. Specifically, 66 students, accounting for 18.54% of the sample, achieved scores of 90 and above, classifying them as 'Advanced'. The largest group, with 148 students or 41.57%, scored between 85 and 89, placing them in the 'Proficient' category. Meanwhile, 92 students, representing 25.84%, fell within the 'Approaching Proficiency' range with scores from 80 to 84. Another 49 students, making up 13.76%, were in the 'Developing' category with scores between 75 and 79. Lastly, only 1 student, constituting 0.28% of the sample, scored 74 or below, which is categorized as 'Beginning'. This distribution suggests that a significant portion of the students are performing at or above the proficiency level in Statistics.

Relationship between the Non-intellectual factors affecting the Statistics performance of Graduate School students and their Academic Performance

Table 12 Relationship between the on-intellectual factors affecting the Statistics performance of Graduate School students and their Academic Performance in terms of student, teacher, administrator, parent, instructional materials, methods and strategies, evaluative tools, administrative support, supervisory support and school factors

Factors		Academic Performance	Decision	Interpretation
Student	R	0.048^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.371		
Teacher	R	0.116^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.128		
Administrator	R	0.039^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.466		
Parent	R	0.068^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.201		
Instructional Materials	R	-0.013^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.811		
Methods and Strategies	R	0.036^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.499		
Evaluative Tools	R	-0.010^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.848		
Administrative Support	R	0.059^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.264		
Supervisory Support	R	0.037^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.486		
School	R	0.042^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.428		

ns = not significant

The results in Table 12 demonstrate that none of the examined factors such as student characteristics, teacher influence, administrative support, parental involvement, instructional materials, and others show a significant relationship with the academic performance of students in Statistics. The Pearson correlation coefficients (r) are all close to zero, indicating a very weak degree of relationship between these factors and students' Statistics performance. Additionally, all p-values are greater than the commonly accepted significance level of 0.05, which leads to the acceptance of the null hypothesis (Ho) for each factor. This means that the variables tested do not have a statistically significant impact on students' Statistics performance.

Several reasons could explain this lack of significance. First, academic performance is a multifaceted construct influenced by a wide range of variables, many of which may not have been included in this study. Factors such as personal motivation, learning styles, socio-economic status, and classroom environment might play a more substantial role in Statistics achievement. Additionally, the measures used for assessing these factors could have limitations in capturing their true impact on student performance.

The findings can also be supported by theories like Bronfenbrenner's Ecological Systems Theory, which emphasizes the complex and interacting layers of influences on a student's development. The absence of significant relationships in this study might reflect the need to consider a broader range of environmental and contextual factors, beyond those examined here, that interact dynamically to influence academic performance. The theory suggests that looking at isolated factors may not be sufficient, as student performance is shaped by multiple, interconnected systems.

The acceptance of the null hypothesis, confirming that the variables tested when considered individually, do not significantly affect the Statistics performance of students. This suggests the need for a more comprehensive approach in future studies, potentially including a wider array of variables or examining how these factors interact with one another.

The result of the study aligned with existing literature on factors influencing Statistics achievement. Hill & Cordova (2015) suggest that student, teacher, and school factors collectively impact Statistics achievement, mirroring the comprehensive approach taken in the analysis of various factors affecting Graduate School students' Statistics performance. Similarly, Lubienski & Calkins (2016) and Hativa (2017) emphasize the complexity of relationships between teacher and student characteristics and Statistics achievement, which resonates with the nuanced findings of the correlation analysis, revealing no straightforward associations between these factors and academic performance.

The result is also in consonance to the study conducted by Kumtepe & Çakır's (2018) meta-analysis reinforces the significance of student background factors, such as socioeconomic status, in predicting Statistics achievement, an aspect potentially reflected in the non-significant relationships observed between parent and school factors and academic performance. Furthermore, Ghaemi & Taheri's (2020) findings on the positive relationship between parental involvement and Statistics achievement underscore the importance of family support, albeit the intricate interplay of various factors, including parental education and socio-economic status, as identified in the correlation analysis.

Lastly, Wigfield & Guthrie (2020) stress the critical role of motivation and engagement in Statistics education, echoing the emphasis on student factors in the correlation analysis. The review underscores the positive correlation between motivation and Statistics achievement, it acknowledges the multifaceted nature of this relationship, which aligns with the absence of significant associations observed in the study.

Intervention Program for Enhancing Statistics Performance of Graduate School Students of Northeastern College.

(see attachment for Intervention Program)

CONCLUSION

Based on the findings of the study, the following conclusions were derived:

1. The study showed that student, teacher, administrator, parent, instructional materials, teaching methods, evaluative tools, administrative support, supervisory support, and school factors slightly to moderately affect the Statistics performance of Graduate School students. Although each factor was not extremely serious, they still present challenges that need to be addressed to improve students' learning.

2. Most students had good performance in Statistics, with many students reaching the 'Proficient' and 'Approaching Proficiency' levels. However, some students still struggled, showing the need for continued support and intervention.

3. The study found no strong relationship between the non-intellectual factors and the students' Statistics performance. This means other factors, like personal motivation or home environment, might play a bigger role in their success in Statistics.

RECOMMENDATION

1. Given the absence of a significant correlation between the identified non-intellectual factors and students' academic performance in Statistics, it is recommended that Northeastern College strengthen existing support systems. This may include the provision of academic counseling, remedial and enrichment programs, tutoring services, and wellness support to address the diverse academic and personal needs of Graduate School students and to sustain their proficiency in Statistics.

2. Although teacher-related factors did not show a significant relationship with students' Statistics performance, continuous professional development remains essential. Regular training, workshops, and seminars focusing on innovative, student-centered, and data-driven instructional strategies in Statistics should be provided to help teachers effectively address varied learning backgrounds and maintain high-quality instruction.

3. Despite the non-significant correlation between parental factors and students' Statistics performance, parental involvement should still be encouraged. Northeastern College may implement initiatives such as orientation sessions, regular communication platforms, and parent-education programs to strengthen collaboration between parents and educators in supporting students' learning in Statistics.

4. Northeastern College is encouraged to strengthen collaboration among administrators, teachers, parents, and community stakeholders in designing and implementing holistic strategies that support Statistics education. Such partnerships can help address academic, motivational, and resource-related concerns and contribute to a more supportive learning environment.

5. Continuous monitoring and evaluation of instructional practices and intervention programs are recommended to ensure their effectiveness. Northeastern College should establish systematic mechanisms for collecting and analyzing data on students' Statistics performance, teaching strategies, and resource utilization. The results of these evaluations may serve as a basis for evidence-based decision-making and continuous improvement in Statistics education.

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AUTHOR'S BIONOTE

"I have learned that success is to be measured not so much by the position and awards that one has achieved in life but by the obstacles which he had to overcome while trying to succeed"

Hard work really pays off says a true blooded Ramonian who came from a family of not having gone to formal education thus gathering all these sad plight as his inspiration to chart his own aspiration to finish a course.

Inspired by the struggles that almost drown him to the quagmire of poverty, his diligence and faith pushed him to enter doing dirty jobs as school boy from high school to college abstaining from enjoying teen age life and even embracing the humiliation and sometimes bullying moments with his classmates just to finish a course.

Finishing a college degree and landing a job were not just part of his destination . His journey came nobler when he initiated programs conceived to help the underpriviledged and the marginalized thus LAPIS, BISEKLETA, SIRIB and the like became his projects not just thinking of the accolades but more of freeing the youth and learners from the bondage of poverty became his rallying motives.

Becoming noblest than a teacher is sharing the gift and skills of Reseach though going further studies thus encouraging his collegaues to take masteral and doctoral became also his mission thus helping others in the profession too to attain fulfillment and promotion .

Who would ever dare to think of this moving success story of hurdling a Herculean task just to achieve what he had now in his life and not sacrificing too quality time with his family which he considers as his priceless treasure despite of all these luminaries that should have blinded him, he remains humble which is indeed a virtue of a genius and an extraordinary person.

Known by his nick name, “Janno” made an influence to the lives of his students, fellow teachers and fellow Ramonians. As a secondary school teacher of Raniag High School, Ramon, Isabela and professor at the Graduate School of Northeastern College, Santiago City, he manifested his love for the advancement of knowledge and skills of his students. As a graduate of Bachelor of Secondary Education, Major in Math, Master of Arts in Education and Doctorate in Education, he maximizes his time in sharing his expertise in the different areas where a learner can excel and where his community can progress.

“Janno” is a multi-talented person. He is a singer, a dancer,a performer and an athlete. In his participation to different competitions in the various seminars or conferences he attended, he is a deserving of the following awards:

1.Most Exceptional Multi-talented Secondary Educator and Education Visionary (Grand Hyatt, Taipei, Taiwan) January 15-16, 2024

2.Most Inspiring Global Educator (Courtyard by Marriott Central Park Hotel, New York City) January 9, 2024

3.Asia Pacific Most Exemplary Academic Coach (Sutton Place, Vancouver, Canada) January 5, 2024

4.Most Inspiring Transformational Leader and Educator (Las Vegas Marriott Hotel, Las Vegas, Nevada) December 19, 2023

5.Asia-Pacific Outstanding Innovative Master Teacher of the Year (Novotel Sydney Central, Sydney, Australia) July 26, 2023.

6.Asia’s Most Outstanding Educator of the Year (Royal Hotel Saigon, Ho Chi Minh City, Vietnam) March 30, 2023

7.Dangal ng Lahi Most Outstanding Educator (Water Front Hotel, Cebu City) November 2022

8.Asia's Golden Icon Awards-Asia”s Man of Outstanding Achievements in the Field of Education (Okada Hotel) June 28, 2022.

9.Outstanding Researcher of the Year (3rd Instabright National Awards 2022)

10.Innovative Teacher of the Year (3rd Instabright National Awards 2022)

11.Outstanding Master Teacher of the Year (3rd Instabright National Awards 2022)

12.Global Educator of the Year (1st Global Golden Researchers and Educators Guild Award 2021)

13.Outstanding Innovative Leader (1st Global Golden Researchers and Educators Guild Award 2021)

14.Outstanding Master Teacher (1st Global Golden Researchers and Educators Guild Award 2021)

15.Outstanding Professional (1st Global Golden Researchers and Educators Guild Award 2021)

16.Outstanding Teacher (Pammadayaw 2021, SDO-Isabela)

17.Most Outstanding Master Teacher (2nd Instabright National Awards 2021)

18.Best Demonstration Teacher (International Seminar on 21st Century Classroom Management, October 9-11, 2021)

19.Best Paper entitled "Reduction of Math Anxiety and Increasing Students Performance thru Creative Visualization, October 16-18, 2021)

20.Most Outstanding Master Teacher 2021- Asia Pacific Educators Training Institute (Bay Leaf Hotel, Cavite)

21.Most Outstanding Senior Teacher -2020 International Education Summit & Awards (Held at Bangkok Thailand)

22.GAWAD ULIRANG GURO 2020- May 22-24 New York USA by Ass. Of FilAm Educators Unified

23.Philippines Ambassador of PEACE – Bangladesh 2020

24.Most Outstanding Master Teacher- Division Level 2020

25.Most Outstanding Master Teacher- Regional Level 2018

26.Most Outstanding Isabelino - in the Field of Education 2019

27.Most Outstanding Master Teacher in Isabela -2018

28.Most Outstanding Ramonian- Filed of Education 2019

29.2nd Runner-up in the "Search for Mr. NASSPHIL" held in Cebu City; 2nd Place in the Solo OPM Singing Contest-Cebu City;

30.2nd Place in the Choir Competition (Member) held in Cebu City;

31.Awarded by the BSP National Office of the Bronze Service Award;

32.Received a Leadership Award on the Advanced Training Course for Troop Leaders from BSP Regional Office; and

33.Rank No. 8 in the Video Making Contest during the World Teachers Day in 2012 (National Level).

" Success not shared to your community is futile and useless, when everyone sees you as part of their success too, this makes you the noblest and shining with splendor when the community especially the less, the least and the lost saw you as their guiding light to achieve their goals too", this is the meaning of success to me, Janno ended.

By: DR. ADRIANO GANDA SABADO

Intervention Program For Enhancing Statistics Performance Of Graduate School Students In Northeastern College, Santiago City

Components	Objectives	Smart Goal	Timeline	Person's Involved	Budget	Outcome Evaluation	Success Indicators
Student Support Systems Enhancement	To Enhance Academic Support Services To Promote Peer Mentoring Programs	Provide additional resources such as tutoring services, academic counseling, and remedial classes to support students facing difficulties in Statistics. Implement peer mentoring programs to encourage collaboration and peer-to-peer support among students.	Year 1: Establish and launch comprehensive academic support services and peer mentoring programs, focusing on immediate implementation and initial impact assessment. Year 2: Refine and expand the support systems based on feedback and evaluation results, ensuring continuous improvement and greater reach. Year 3: Sustain and integrate the enhanced support systems into the school's standard operations, with ongoing monitoring and adaptation to meet evolving student needs.	School administrators, teachers, parents, community members, and educational stakeholders.	Allocate funds for professional development workshops, parental engagement activities, peer mentoring programs, and resource procurement as necessary.	Conduct periodic assessments to measure improvements in Statistics performance, student engagement, and overall academic achievement.	Increase in Statistics grades and test scores among students receiving tutoring services, academic counseling, and remedial classes.
Teacher Training and Professional Development	To Enhance Instructional Methods and Strategies To Promote Ongoing Professional Development To Foster Collaborative Learning	Organize regular workshops and seminars focusing on innovative instructional methods and strategies tailored to meet the diverse learning needs of students. Introduce ongoing professional	Year 1: Launch initial workshops and seminars focusing on innovative instructional methods, and begin ongoing professional development programs to enhance	School administrators, teachers, parents, community members, and educational stakeholders.	Allocate funds for professional development workshops, parental engagement activities, peer mentoring programs, and resource	Conduct periodic assessments to measure improvements in Statistics performance, student engagement, and overall academic achievement.	Success will be indicated by a measurable improvement in student Statistics performance, teacher satisfaction with professional development, and increased use of

	Among Teachers To Assess and Address Individual Teacher Needs To Integrate Technology in Teaching To Measure and Evaluate Training Impact Encourage Lifelong Learning and Professional Growth	development programs to enhance teachers' pedagogical skills and effectiveness in teaching Statistics.	teachers' pedagogical skills. Year 2: Expand the professional development programs to include advanced training in educational technology and collaborative learning, while continuously evaluating and refining training initiatives. Year 3: Solidify a culture of continuous professional growth by integrating peer observations, feedback sessions, and advanced certifications, ensuring long-term sustainability and effectiveness of teacher training programs.		procurement as necessary.		innovative instructional methods in the classroom.
Parental Engagement Initiatives	To Educate and Empower Parents To Enhance Communication and Collaboration	Conduct workshops and informational sessions to educate parents about the importance of their involvement in their children's Statistics education. Establish communication channels and platforms to facilitate regular communication between parents and teachers, enabling them to work together to support students.	Year 1: Conduct workshops and informational sessions for parents, emphasizing their role in Statistics education, and establish initial communication channels between parents and teachers. Year 2: Expand parental engagement initiatives with more targeted workshops and	School administrators, teachers, parents, community members, and educational stakeholders.	Allocate funds for professional development workshops, parental engagement activities, peer mentoring programs, and resource procurement as necessary.	Conduct periodic assessments to measure improvements in Statistics performance, student engagement, and overall academic achievement.	Success will be indicated by increased parent participation in workshops and communication activities, improved parent-teacher collaboration, and measurable enhancements in students' Statistics performance and engagement.

			enhanced communication tools, fostering deeper collaboration between parents and teachers. Year 3: Institutionalize effective communication practices and sustain parental involvement through ongoing workshops and community outreach efforts, ensuring continuous support for students' Statistics education.				
Collaborative Methods and Strategies Implementation	To Develop Multidisciplinary Teams To Establish Partnerships with Local Organizations	Formulate multidisciplinary teams comprising teachers, parents, administrators, and community members to develop and implement comprehensive strategies addressing various aspects of students' learning needs. Foster partnerships with local organizations and businesses to provide additional resources and support for Statistics education initiatives.	Year 1: Establish multidisciplinary teams and initiate collaborative strategy development, fostering communication and alignment among stakeholders. Year 2: Strengthen partnerships with local organizations and businesses, integrating their resources to enhance Statistics education initiatives and student support. Year 3: Expand and sustain collaborative efforts, measuring	School administrators, teachers, parents, community members, and educational stakeholders.	Allocate funds for professional development workshops, parental engagement activities, peer mentoring programs, and resource procurement as necessary.	Conduct periodic assessments to measure improvements in Statistics performance, student engagement, and overall academic achievement.	Success will be indicated by measurable improvements in student engagement, academic performance in Statistics, and community involvement in education initiatives.

			impact and adjusting strategies based on outcomes to ensure continuous improvement and long-term effectiveness.				
Monitoring and Evaluation Mechanisms	To Establish a system for collecting and analyzing data on student progress, teacher practices, and resource allocation to inform evidence-based decision-making. To conduct regular evaluations of intervention programs to assess their effectiveness and identify areas for improvement.	Establish a system for collecting and analyzing data on student progress, teacher practices, and resource allocation to inform evidence-based decision-making. Conduct regular evaluations of intervention programs to assess their effectiveness and identify areas for improvement.	Year 1: Establish and implement the data collection and analysis system, ensuring accurate tracking of student progress and teacher practices, and initiate initial program evaluations. Year 2: Enhance the data analysis capabilities and conduct comprehensive evaluations of intervention programs, using findings to refine strategies and improve outcomes. Year 3: Institutionalize a robust monitoring and evaluation framework, integrating feedback loops to continuously assess program effectiveness and drive evidence-based decision-making.	School administrators, teachers, parents, community members, and educational stakeholders.	Allocate funds for professional development workshops, parental engagement activities, peer mentoring programs, and resource procurement as necessary.	Conduct periodic assessments to measure improvements in Statistics performance, student engagement, and overall academic achievement.	Success will be indicated by improved student outcomes based on data-driven decision-making, enhanced program effectiveness through regular evaluations, and optimized resource allocation for maximum educational impact.