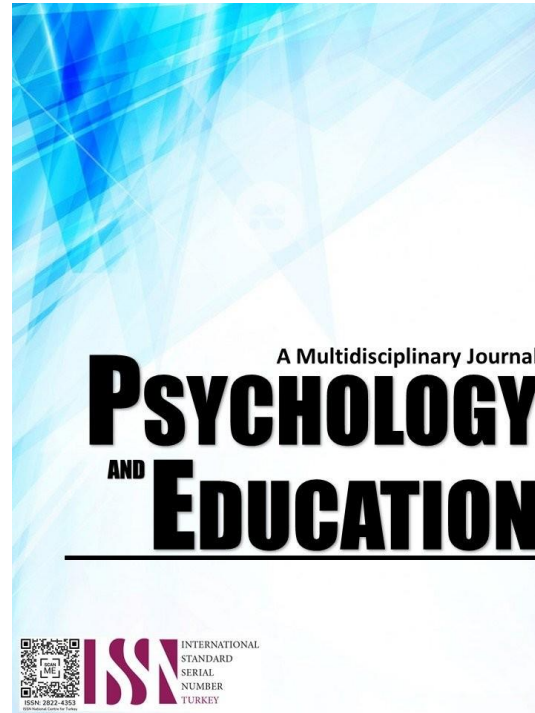


PERCEIVED LEVEL OF RESEARCH ANXIETY AND RESEARCH SELF-EFFICACY OF TWELFTH GRADERS OF A CATHOLIC SENIOR HIGH SCHOOL



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Perceived Level of Research Anxiety and Research Self-Efficacy of Twelfth Graders of a Catholic Senior High School

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Abstract

Research is essential in today's generation, offering significant benefits to society. It serves as a key skill for generating new knowledge and developing interventions. However, research anxiety often hinders its growth and mastery, especially in the field of education. The goal of this study was to present students' research anxiety and research self-efficacy levels as well as to determine the relationship between these two factors regarding various variables (sex, strand/track, academic standing, and type of junior high school attended) in the Senior High School Department at Saint Mary's University. The study employed a descriptive-comparative-correlational research design and utilized both qualitative and quantitative methods. The findings showed that the research anxiety of the students was moderate, and sex, academic standing, and type of junior high school attended did not significantly affect the level of research anxiety. However, it was found that respondents' strands significantly affected the research anxiety level. Additionally, the research efficacy level of the students was moderate, and sex, strand, and type of junior high school attended had no perceptible effect on these levels. However, it was found that academic standing had a significant effect on the research self-efficacy of the students. Moreover, there is a high correlation between research anxiety and the research self-efficacy of the students. The students' responses to what exacerbated their research anxiety indicated that deadline pressure and conflicting schedules increased their research anxiety. The respondents coped with it by managing and balancing their time well and by engaging in recreational activities. These findings can be used to establish and initiate programs or workshops that would develop and enhance the skills of students in engaging research.

Keywords: *intervention, research, anxiety, research anxiety, research self-efficacy, programs, workshops*

Introduction

In this current generation, the human pursuit of knowledge has been one of the reasons to explore new ideas, and knowledge and uncover insights that can benefit our society. Thus, research has been crucial in our lives, especially in the field of education. According to Banu et al. (2022), conducting research is the most effective approach to attain a full understanding of a subject matter. Regardless of the field of study one pursues, research remains the fundamental basis for all accomplishments globally. Along with this, research is an integral part of the Senior High School curriculum established by the Department of Education (DepEd). According to DepEd Order No. 39, s. 2016, it seeks to explore new knowledge in less-explored but high-priority fields of the curriculum. The primary objective of this curriculum is to focus the Senior High School (SHS) students' attention on relevant issues related to their respective strands and maximize the available resources for conducting research both within and outside the school. Hence, students' research skills must take courses in discipline with this.

However, a study indicates that there are challenges felt by students in writing a research paper that impede their skill development, such as lack of experience, difficulty in working independently, translating themselves as fully immersed in the field, and challenges in collaboration (Mydin et al., 2021).

In line with previous research, Bocar (2009) concluded that time management and stress management are the difficulties that the students encounter. The barriers and challenges students face in the involvement of research are lack of funds, mentorship, collaboration, the emphasis on education rather than research, limited time due to teaching responsibilities, and insufficient knowledge of research studies. (Kiyimba et al., 2022; Assar et al., 2022).

Research has been identified as a source of anxiety among students. While research is crucial for sustainable cultural, social, and economic development, it is only possible to assume long-term development with a well-established research system (Recto, 2021). Research anxiety is one of the most frequent sources of anxiety in higher education (Ashrafi-ziri et al., 2014) and one of the primary predictors of academic performance (Vitasari et al., 2010).

The disciplinary skills for grades K–12 social studies encompass various aspects such as formulating compelling inquiries, formulating supplementary queries, gathering and evaluating sources, formulating assertions and utilizing evidence, conveying and analyzing findings, and making well-informed actions (Nevada Center, 2021). Along with this, research skills consist of a variety of skill sets that synergistically enable individuals to recognize, comprehend, and reach practical resolutions based on the gathered information. These skills comprise critical thinking, communication, problem-solving, time management, and attention to detail. (Team Glassdoor, 2021).

Research

Research entails repeatedly observing phenomena from various dimensions in order to gain a comprehensive understanding. To put it differently, it can be asserted that subjects necessitate us to surpass the boundaries of our personal knowledge and experience. This study's objective is to investigate a concept, analyze a problem, offer a solution, and present a compelling argument that necessitates seeking assistance from external sources while remaining unchanged. Research is an essential procedure wherein data is gathered, examined, and interpreted to obtain answers to inquiries. To be considered as research, the process must possess specific attributes. It needs to be controlled, methodical, systematic, valid and verifiable, empirical, and critical to the greatest extent possible (Brar et al., 2014).

Research plays an important role in the furtherance of knowledge and the forward movement of society. It functions as a methodical examination with the goal of discovering novel understandings, questioning established patterns, and addressing intricate issues (Islam, 2023).

Research involves the undertaking of discovery to acquire fresh knowledge. Scientific research entails methodical investigation and observation of phenomena. The majority of scientific research endeavors encompass experimentation, frequently requiring the examination of how changing conditions impact the outcomes (Purdue College of Science, Purdue University, n.d.).

Research Anxiety

The American Psychological Association (APA, 2022) characterizes anxiety as an emotional state that is defined by tension, worry, and physical changes. It is frequently accompanied with symptoms such as anger, nervousness, and unease. Anxiety is a crippling mental condition that affects many college students worldwide. (Mensah et al., 2023). According to Heckman (2019), about 75% of all university students in the US in 2017 experienced at least one episode of overwhelming anxiety. Anxiety negatively affects students' academic achievement as they usually experience higher levels of anxiety in performance (Vitasari et al., 2010). Importantly, anxiety may cause poor performance and otherwise (Maharajan et al., 2017).

One unstudied factor that could influence students' intention to continue their research is research anxiety, which is the feeling of concern or unease related to carrying out research that could influence students' perseverance in both their scientific and research experiences. (Cooper et al., 2023). Additionally, it is described as the fear and apprehension that comes with conducting and producing genuine scientific study. (Enfanmanesh, 2009). Furthermore, research anxiety is also known as a persistent state of fear, discomfort, stress, and anxiety during research work that is defined by a lack of confidence in the researcher's ability to conduct research, master research methods, and defend the dissertation before research (Gupta & Singh, 2020).

In the study of Henderson (2023), Research anxiety refers to the fear and uncertainty experienced during genuine scientific research and production. These emotions can lead to various negative feelings among students engaged in academic research and, in some cases, may cause such high levels of fear or nervousness that students choose to switch fields or discontinue their undergraduate studies. Previous studies have shown that feeling "underprepared" is a significant predictor of research anxiety and that research anxiety has a strong negative correlation with students' intentions to pursue careers in research-related fields. While research anxiety can affect any student, it may be more prevalent among underserved populations.

According to the study by Recto (2021), Research anxiety is among the most prevalent fears in higher education. The study of Ashrafirizi et al. (2014), Research has demonstrated that personal barriers play a significant role in students' experiences with the research process, with research-related anxiety being one of the most impactful personal barriers.

Research Self-Efficacy

Research self-efficacy, as defined by Büyüköztürk et al. (2011), pertains to an individual's assurance in their capability to efficiently execute tasks, including literature reviews and data analyses. Research self-efficacy opinions, which refer to individuals' perceptions of their ability to successfully perform a given research task, can significantly impact their level of participation and the subject matter chosen for research endeavors (Bieschke et al., 1996). The correlation between the quantity of research experiences, the availability of research resources, the keen interest of researchers, and their opinion on the training environment for academic research was found to be significantly related to their beliefs in research self-efficacy (Bieschke, 2006).

Research self-efficacy is defined as a researcher's personal assessment of their confidence in their ability to successfully carry out research-related tasks throughout the research process (Taş et al. 2023). Previous research indicated that research interest and knowledge were positively correlated with research self-efficacy. (Lambie et al., 2013) although adversely linked to depression and anxiety (Liu et al., 2019).

Students with low research self-efficacy lack confidence in their capabilities to engage in research and doubt their potential for success. These students frequently experience anxiety, particularly when faced with evaluation, as they perceive a deficiency in their competence. On the other hand, students with elevated self-efficacy possess a firm belief in their own capabilities, which enables them to effectively engage in investigative tasks and achieve greater success in research endeavors (Garavand et al., 2014; Bierer et al., 2014).

Factors Affecting Research Anxiety

A study by Cooper et. al (2023), discovered that undergraduate students' research anxiety rose when they encountered failure in the context of their studies. The most common factors are lack of preparation and insufficient guidance, Therefore the factors to decrease research anxiety among students are sufficient guidance, preparation, a positive relationship with the mentor, and progress.

Meanwhile, the study of Ashrafa-ziri et al. (2014), findings suggest that the most significant factors contributing to research anxiety are delays in fee payments, the prolonged process of proposal approval, and the final reporting of research projects. Conversely, the least influential factors were insufficient financial resources for conducting research and the unapproachable behavior of magazine and research center staff.

Observations by Matook (2020), suggest that the anxiety experienced by the surveyed population was related to various aspects of the research process, including formulating research questions, literature review, inadequate writing abilities and a lack of knowledge of statistical analysis contributes to the research anxiety level. On the other hand, the study of Papanastasiou (2008), demonstrates that the likelihood of decreased anxiety levels was higher among students who found their research courses easier.

Despite these early studies, the result between sex remains unclear. The contributing factors of research anxiety have been extensively studied. However, less attention has been paid to the relationship between research anxiety level and research self-efficacy level. Furthermore, previous studies have not yet studied the relationship between research anxiety levels and research self-efficacy levels on strand/track, academic standing, and type of junior high school attended, highlighting a gap in the study. Moreover, no study appears to exist regarding the coping strategies for managing stress in conducting research.

This research aims to determine the research anxiety level and research self- efficacy level of the Senior High School students of Saint Mary's University and to investigate whether these have significant relationships. Additionally, this study also investigates the relationship between the level of research anxiety and research self- efficacy on the socio-demographic profiles of the students which are sex, strand/track, academic standing, and type of junior high school attended. Lastly, this study also seeks to find out the factors affecting the research anxiety of the students and their practical coping strategies to manage stress in conducting research studies.

Research Questions

This study aims to determine the Grade 12 Senior High School Students' perceived research anxiety and self-efficacy levels. Specifically, this paper seeks to answer the following research questions:

1. What is the respondents' perceived level of research anxiety?
2. What is the respondents' perceived level of research self-efficacy?
3. Is there a significant difference on the respondents' perceived research anxiety level when grouped according to:
 - 3.1. sex;
 - 3.2. strand/track;
 - 3.3. academic standing; and
 - 3.4. type of Junior High School attended?
4. Is there a significant difference on the respondents' research self-efficacy when grouped according to:
 - 4.1. sex;
 - 4.2. strand/track;
 - 4.3. academic standing; and
 - 4.4. type of Junior High School attended?
5. Is there a significant relationship between the respondents' perceived research anxiety level and their research self-efficacy?
6. What are the factors affecting the research anxiety of the respondents?
7. What are the coping strategies of the respondents to manage their stress in research?

Methodology

Research Design

This study utilized both qualitative and quantitative methods to determine the Grade 12 Senior High School Students' perceived research anxiety level and research self-efficacy level.

This study employed a descriptive-comparative-correlational research design to analyze the research anxiety and research self-efficacy of the respondents. This design was chosen to compare the respondents' sex, strand/track, academic standing, and type of junior high school attended to the assessed level of research anxiety and research self- efficacy.

Moreover, the following variables were explored whether these have significant relationships in their research anxiety level and research self-efficacy level.

The qualitative method determined the factors that affect the research anxiety level of the respondents and their practical coping strategies to manage stress in conducting research studies.

Respondents

The participants of this study are the Grade 12 students of Saint Mary's University. The researchers picked the respondents with the use of a stratified sampling method. This method allows the researchers to ensure a balanced representation and diverse population of the socio-demographic variables which are sex, strand, academic standing, and type of Junior High School attended by selecting the participants from each subgroup. The researchers chose these respondents because this research aims to determine the research anxiety and research self-efficacy level of Senior High School students and to explore the relationship between these in addition to their socio-demographic profiles. The sample size of this study is 217 respondents, determined through the use of Raosoft Sample Size Calculator with a margin error of 5%.

Table 1. *Frequency and Percentage Counts of the Demographic Profile of the Respondents*

<i>Profile Variables</i>	<i>f(n=217)</i>	<i>%</i>
Sex		
Male	88	40.6%
Female	129	59.4%
Strand/Track		
ABM	22	10.1%
AD	6	2.8%
HUMMS	28	12.9%
STEM	135	62.2%
TVL-HE	7	3.2%
TVL-ICT	19	8.8%
Academic Standing		
With Highest Honor	6	2.8%
With High Honor	67	30.9%
With Honor	25	11.5%
With Academic Distinction	111	51.2%
Non-honor Student		
Type of Junior High School Attended		
Public School	45	20.7%
Private School	172	79.3%

Table 1 shows the data profile variables. As can be seen, most respondents were female when grouped according to sex. Moreover, it is also shown that in the strand/track group, STEM garnered the highest distribution, followed by HUMMS, while AD and TVL-HE got the least respondents. On the other hand, the respondents were commonly from private schools. When grouped according to academic standing, most of the respondents are non-honors, followed by those with honors.

Instrument

The questionnaire used in the study was adapted from previous research conducted by Onwuegbuzie (2013) entitled "Development and Score-Validation of the Research Anxiety Rating Scale" and Büyüköztürk (2011) entitled "The Development of Research Self-Efficacy Scale" which were used to gather data for the respondent's research anxiety level and research self-efficacy level.

The questionnaire was divided into four parts. It begins with a section for participants to provide their socio-demographic information, including sex, academic standing, type of school attended, and geographic area. Following this, participants will be presented with structured questionnaires featuring checklists and Likert scale formats. The second part contains a Likert scale, comprising five response options ranging from "1-strongly disagree" to "4-strongly agree," allowing respondents to indicate their research anxiety. Similarly, the third part indicates the level of agreement with statements related to their research experience, insights, and skills. These organized and systematic questions aim to obtain comprehensive responses from the participants. Additionally, open-ended questions will be utilized to gather qualitative insights and perspectives on research experiences, attitudes, and stress management strategies, providing valuable information to complement the quantitative data gathered through the rating scales.

Table 2. *Results of Reliability Test for Research Anxiety Level*

<i>Cronbach's Alpha</i>	<i>N of Items</i>
.76	13

Table 2 shows the result of the reliability test for research anxiety level. The table shows that with 13 items, Cronbach's alpha is equal to .76. Thus, its internal consistency is equivalent to acceptable ($0.79 \leq a < 0.70$). Hence, the questionnaire is reliable.

For the research self-efficacy level's reliability test result, Table 2 shows that with 10 items, Cronbach's alpha is equal to .81. Therefore, its internal consistency is equivalent to good ($0.89 \leq a < 0.80$) showing that the questionnaire is reliable.

Table 3. *Results of Reliability Test for Research Self-Efficacy Level*

<i>Cronbach's Alpha</i>	<i>N of Items</i>
.81	10

Procedure

For the first procedure, the researchers first completed the adaptation and modification of the questionnaire to refine the study tool. Then, the approval and validation of the research questionnaire was conducted to ensure the accuracy of the tool. Afterward, pilot test was conducted to assess its functionality. Following this, a reliability test was carried out to check the consistency of the instrument. After securing a letter of permission, the participants were oriented and the researchers proceeded with the collection of responses.

Data Analysis

The following statistical treatments was used in analyzing the data that was gathered:

Mean and standard deviation were used to describe the level of research anxiety and research self-efficacy of Grade 12 Senior High School students.

Table 4. *Qualitative Description of the Likert's Scale for the Research Anxiety Level*

<i>Mean Range</i>	<i>Likert-Scale Description</i>	<i>Interpretation</i>
1 - 1.49	Strongly Disagree	Very High Anxiety
1.50 - 2.49	Disagree	High Anxiety
2.50 - 3.49	Agree	Moderate Anxiety
3.50 - 4	Strongly Agree	Low Anxiety

Table 5. *Qualitative Description of the Likert's Scale for the Research Self-Efficacy Level*

<i>Mean Range</i>	<i>Likert-Scale Description</i>	<i>Interpretation</i>
1 - 1.49	Strongly Disagree	Very Low Self-Efficacy
1.50 - 2.49	Disagree	Low Self-Efficacy
2.50 - 3.49	Agree	Moderate Self-Efficacy
3.50 - 4	Strongly Agree	High Self-Efficacy

Independent Samples T-test was used to determine the significant differences between sex, research anxiety, and research self-efficacy of the students. It was also used to determine the significant differences between the type of school graduated from and research anxiety and research self-efficacy of the respondents.

One-way ANOVA was used to determine the significant difference in the research anxiety and research self-efficacy levels of the respondents when grouped according to their strand and academic standing.

Pearson R (Correlation) was used to determine the significant relationship between the research anxiety level and the research self-efficacy level of the respondents.

Thematic Analysis was used to analyze the factors that affect the level of research anxiety and the coping strategies of the respondents.

Results and Discussion

This section talks about the presentation of research anxiety and research self- efficacy level and their analysis according to the respondents' profile variables. The gathering was done through a stratified sampling method. PSPP application was used in the analysis of data.

Table 6 provides the descriptive statistics on the respondents' research anxiety level. The table indicates that the overall level of research anxiety among respondents is moderate ($M = 2.59$; $SD = .82$), with specific aspects of research evoking varying degrees of anxiety. The highest mean ($M = 3.36$; $SD = .75$) that falls under the category of "Moderate Anxiety" indicates that most of the respondents find that conducting research was time-consuming. This is followed by the perception that research is a challenging and stimulating discipline ($M = 3.33$; $S = .71$) and the uncomfortableness of evaluating recent research articles ($M = 2.59$; $S = .81$). On the other hand, the perception that writing a research proposal feels challenging and stressful ($M = 1.95$; $S = .84$) followed by engaging in research methods makes them anxious ($M = 2.25$; $S = .78$), and lastly feeling uneasy about orally presenting research ($M = 2.35$; $S = .84$) fall under the category of "High Anxiety", indicating discomfort with these practical aspects of research.

The higher levels of anxiety related to time management and the practical demands of research indicate that students may feel overwhelmed by the complicatedness of the research process. Meanwhile, the lower scores in practical skills such as writing proposals and oral presentations point to a possible lack of experience and support, which contributes to the feelings of inadequacy.



Table 6. Descriptive Statistics of the Level of Research Anxiety of the Respondents

Research Anxiety Indicators	Mean	SD	Interpretation
1. I struggle to find research problems that I would like to explore.	2.59	.81	Moderate Anxiety
2. Research feels like a challenging and overwhelming discipline.	3.33	.71	Moderate Anxiety
3. I find conducting research to be time- consuming and difficult.	3.36	.75	Moderate Anxiety
4. I often feel uneasy when undertaking research.	2.41	.87	High Anxiety
5. The thought of conducting research in the library makes me feel nervous.	2.47	.87	High Anxiety
7. Writing a research proposal feels challenging and stressful for me.	1.95	.84	High Anxiety
6. I struggle to see research as something interesting.	2.86	.84	Moderate Anxiety
8. I don't feel fully comfortable evaluating published research articles.	2.59	.81	Moderate Anxiety
9. The idea of taking a course in research methods makes me anxious.	2.25	.78	High Anxiety
10. I feel uneasy at the prospect of orally presenting a research proposal.	2.35	.84	High Anxiety
11. I find reading research articles in my field to be somewhat overwhelming.	2.52	.84	Moderate Anxiety
12. I don't feel confident in my ability to interpret research findings.	2.47	.79	High Anxiety
13. I thought of conducting research makes me uneasy.	2.46	.87	High Anxiety
Total	2.59	.82	Moderate Anxiety

Legend: 1.00-1.49 (Very High Anxiety), 1.50-2.49 (High Anxiety), 2.50-3.49 (Moderate Anxiety), 3.50-4.00 (Low Anxiety)

The findings were supported by the study conducted by Cooper et al. (2023), which suggests that lack of preparation and insufficient guidance are the most common factors that increase the research anxiety of undergraduate students. This could indicate the need for enhanced educational strategies that emphasize time management skills and provide training in practical research. This could include workshops and sufficient guidance during the research process.

Table 7. Descriptive Statistics of the Level of Research Self-Efficacy of the Respondents

Research Self-Efficacy Indicators	Mean	SD	Interpretation
1. I am a confident writer.	2.47	.84	Low Self- Efficacy
2. I can realize the problems that may contribute to the field I work in.	2.76	.75	Moderate Self- Efficacy
3. I believe I am sufficient in creating hypotheses relevant to my research.	2.58	.77	Moderate Self- Efficacy
4. I can explain my research problem through drawing the necessary relations with prior research results.	2.52	.80	Moderate Self- Efficacy
5. I can effectively carry out the literature survey by using various channels (internet, library, etc.)	2.67	.78	Moderate Self- Efficacy
6. I do find it difficult at all to compare the results of my research to prior research results.	2.34	.78	Low Self- Efficacy
7. I can criticize the results of my research regarding research processes.	2.61	.77	Moderate Self- Efficacy
8. I can choose the appropriate data collection method necessary for my research.	2.62	.74	Moderate Self- Efficacy
9. I can choose appropriate statistical methods to test or respond to my research hypotheses.	2.58	.75	Moderate Self- Efficacy
10. I am confident in my ability to use the English language effectively.	2.82	.87	Moderate Self- Efficacy
Total	2.58	0.76	Moderate Self- Efficacy

Legend: 1.00-1.49 (Very Low Self-Efficacy), 1.50-2.49 (Low Self-Efficacy), 2.50-3.49 (Moderate Self-Efficacy), 3.50-4.00 (High Self-Efficacy)

Table 7 indicates that students generally exhibit “Moderate Self-Efficacy” in conducting research, particularly in language use (M = 2.82; SD = .87) and problem recognition (M = 2.76; SD = .75). However, areas like comparing research results to prior studies (M = 2.34; SD = .78) and writing (M = 2.47; SD = .84) fall under “Low Self- Efficacy”, highlighting notable skill gaps.

The results imply that while students show satisfactory confidence in most technical aspects of conducting research, such as formulating hypotheses, conducting literature reviews, and selecting appropriate methods, they are still less proficient in writing and comparing research results.

This suggests that while researchers possess the foundational skills necessary for conducting research, they lack proficiency in interpreting and communicating their findings. This could stem from insufficient experience in advanced writing techniques and a lack of exposure to critical evaluation of existing literature.

A previous study by Matook (2020) supports the result, which suggests that the challenges faced by students in various aspects of the research process include a lack of writing skills and a lack of understanding of statistical analysis, which are integral parts in writing and comparing research results. These findings emphasize the need for skill- building interventions that can help in these particular areas. Incorporating workshops on academic writing and data interpretation could help build confidence and competence in these areas.

Table 8. Comparison of Research Anxiety Level of the Respondents in Terms of Sex

Research Anxiety Level	Male		Female		t (215)	p
	M	SD	M	SD		
	2.59	.53	2.58	.45	.22	.824

*Not Significant (p>.05)

Table 8 shows the comparison of the research anxiety level of the respondents in terms of sex. As can be seen, male respondents ($M = 2.59$; $SD = .53$) and female ($M = 2.58$; $SD = .45$) respondents show no significant difference ($p > 0.05$). This implies that anxiety levels related to research are not significantly different between sex, meaning that respondents, both male and female, have comparable levels of anxiety when conducting research. These results show that sex might not be a determining factor in stress connected to research, indicating the need for further study of additional factors that could affect respondents' anxiety associated with research.

The result is in line with the study of Koroglu (2022), which suggests that the research anxiety level of the respondents did not change when grouped according to gender. The comparison of research anxiety levels between male and female respondents shows that there is no significant difference wherein there is no variation in research anxiety level based on gender. This suggests that both male and female respondents experience similar levels of anxiety when it comes to research, supporting the idea that gender could not be the primary factor determining stress associated with research.

Table 9. Comparison of Research Anxiety of the Respondents in Terms of Strand/Track

Factor	Groups	f	Mean	SD	F-value	p-value
Research Anxiety	ABM	22	2.54	.48	2.63	.025
	AD	6	2.29	.27		
	HUMMS	28	2.59	.48		
	STEM	135	2.59	.46		
	TVL-HE	7	2.13	.69		
	TVL-ICT	19	2.80	.47		

*Significant ($p < 0.05$)

Table 9 shows the comparison of research anxiety of the respondents in terms of strand/track. The group that has the highest mean score is TVL-ICT ($M = 2.80$; $SD = .47$), while TVL-HE got the lowest mean score among all groups ($M = 2.13$; $SD = .69$). The p-value indicates that there is a statistically significant difference in research anxiety levels among the different strand/track ($p < 0.05$). This suggests that the strand/track of the students has a significant impact on their research anxiety.

The significant difference in research anxiety across different strands/tracks might be due to the strands/tracks different focuses and how prepared students feel. TVL-ICT students have the highest level of anxiety because their track is typically focused on acquiring technical skills related to IT, programming, and communication technologies. The nature of their track is efficient and less focused on academic research, whereas STEM and HUMSS ($M = 2.59$) students have moderate research anxiety. For STEM students, this might be because their curriculum exposes them to research methodologies, scientific inquiry, and data analysis, helping them develop relevant skills.

However, they may still feel anxious due to the complexity of scientific research, especially when dealing with advanced statistical analyses, and HUMSS students are moderately familiar with research because their curriculum often emphasizes qualitative research methods, critical thinking, and analysis of societal issues. TVL-HE students experience the lowest anxiety, likely due to their track being more focused on practical skills like cooking and caregiving. TVL-HE students deal with less formal academic research. This hands-on approach reduces the pressure or expectation to engage in academic work.

This contradicts the study of Lamano (2019), that the student's levels of research anxiety are similar across the different strands and specializations. This indicates that there are no significant differences based on these groupings. Additionally, the level of research anxiety of students does not have a meaningful impact on their performance in Practical Research 2, this suggests that feelings of anxiety are not related to how well students perform.

Table 10. Comparison of Research Anxiety Level of the Respondents in Terms of Academic Standing

Factor	Groups	F	Mean	SD	F-value	p-value
Research Anxiety	With Highest Honor	8	2.21	.74	1.84	0.122
	With High Honor	6	2.83	.59		
	With Honor	67	2.62	.47		
	With Academic Distinction	25	2.69	.58		
	Non-honor Student	111	2.57	.42		

*Not significant ($p > 0.05$)

Table 10 shows the comparison of the research anxiety level of the respondents in terms of academic standing. The group that has obtained the highest mean score is the group with high honor ($M = 2.83$; $SD = .59$), followed by the group that has the lowest mean score, the group with highest honor ($M = 2.21$; $SD = .74$). The resulted F-value is 1.84, while for the p-value, which is not statistically significant ($p > 0.05$), means that the difference in levels of research anxiety among the groups of varying academic standing with highest honor, high honor, with honor, with academic distinction, and non-honor students is not statistically significant to each other.

The result implies that the academic standing of the respondents does not have an effect on their research anxiety level, which suggest that factors other than academic performance may play an important role in influencing their anxiety. There is a lack of existing literatures that assess the difference of research anxiety of the students when grouped according to their academic standing.



Table 11. Comparison of Research Anxiety Level of the Respondents in Terms of Type of Junior High School Attended

	Public School		Private School		t(215)	p
	M	SD	M	SD		
Research Anxiety Level	2.65	.43	2.56	.49	1.07	.287

*Not significant (p>0.05)

Table 11 shows the comparison of the research anxiety level of the respondents in terms of the type of junior high school attended. As can be seen, there is no significant difference in research anxiety levels between students attending public and private schools since the p-value (p = .287) is greater than 0.05. This suggests that the type of school a student attends does not have a significant impact on their research anxiety, even though students from private schools are more exposed to and advanced in research.

This implies that the exposure of research from the students' junior high school is not a significant factor that could contribute to their research anxiety level. Private schools conduct advance research during the eighth and tenth grades, while public schools do not significantly imply that prior research involvement or experience does not affect the research anxiety levels of the students. No study has been identified to that examines the difference of research anxiety of the students when grouped according to their type of junior high school attended.

Table 12. Comparison of Research Self-Efficacy of the Respondents in Terms of Sex

	Male		Female		t(215)	p
	M	SD	M	SD		
Research Self-Efficacy Level	2.56	.55	2.62	.52	-.75	.455

*Not significant (p>0.05)

Table 12 shows the comparison of the research self-efficacy levels of male and female respondents. As can be seen, the p-value (p = .455) indicates that there is no significant difference in research self-efficacy between males and females. The small difference in mean scores, along with the not-significant p-value, indicates that sex does not play a major role in shaping the research self-efficacy of the respondents. The lack of a significant difference in research self-efficacy between sex suggests that both males and females feel equally confident in their research abilities. This could be because both male and female students often have access to educational resources and academic support.

This corroborates with the study of Kakupa and Xue (2019), the study found no significant difference between the overall attitude scores of male and female students, meaning that both genders generally had similar attitudes toward research. However, the study found that males had a more positive initial view of research compared to females, even though their overall attitudes were similar. This means that while both genders had comparable attitudes, males were more likely to have a positive outlook on research from the start.

Table 13. Comparison of Research Self-Efficacy of the Respondents in Terms of Strand/Track

Factor	Groups	f	Mean	SD	F-value	p-value
Research Self-Efficacy Level	ABM	22	2.65	.52	.31	.906
	AD	6	2.50	.65		
	HUMMS	28	2.59	.42		
	STEM	135	2.58	.53		
	TVL-HE	7	2.47	1.10		
	TVL-ICT	19	2.70	.47		

*Not significant (p>0.05)

Table 13 shows the comparison of research self-efficacy of the respondents in terms of strand/track. The mean research self-efficacy score for the ABM group is 2.65, which is the highest among all the groups. The mean research self-efficacy score for the TVL-HE group is 2.47, which is the lowest among all the groups. As can be illustrated in the table, there is no significant difference between the groups (p>0.05).

The result implies that students from different academic strands and tracks are generally capable in terms of conducting research. As a result, efforts to improve research self-efficacy may not need to be specialized specifically to a particular strand/track. This means that other possible factors might enhance the skills of the students. This study addresses the gap in the literature by studying the comparison of research self-efficacy of the students when grouped according to their stand.

Table 14 presents the comparison of research self-efficacy among respondents when grouped by their academic standing. The group with highest mean self-efficacy level is "With High Honor" students (M = 2.80; SD = .46), indicating a higher confidence in their research abilities. In contrast, students "With Academic Distinction" show a lower mean score (M = 2.47; SD = .50), and non-honor students have an almost equivalent standard deviation (M = 2.53; SD = .50). A significant difference was found in research self-efficacy levels across the group (p = .045).



Table 14. Comparison of Research Self-Efficacy of the Respondents in Terms of Academic Standing

Factor	Groups	f	Mean	SD	F-value	p-value
Research Self- Efficacy Level	With Highest Honor	8	2.54	1.06	2.48	.045
	With High Honor	6	2.80	.46		
	With Honor	67	2.75	.50		
	With Academic Distinction	25	2.47	.50		
	Non-honor Student	111	2.53	.50		

*Significant ($p < 0.05$)

These findings suggest there is a significant difference between the research self- efficacy of the students when grouped according to their academic standing, where students with higher academic distinction generally reveal more confidence in their ability to do research. However, the difference is not substantial across groups, which indicates that factors beyond academic standing, such as prior exposure to research, may also play a role. This study provides a significant gap to address since the existing literature does not provide sufficient result into the difference of research self-efficacy students when grouped according to their academic standing.

Table 15. Comparison of Research Self-Efficacy of the Respondents in Terms of Type of Junior High School Attended

Research Self-Efficacy Level	Public School		Private School		t(215)	p
	M	SD	M	SD		
	2.67	.49	2.58	.55	1.00	.320

*Not significant ($p > 0.05$)

Table 15 shows the comparison of research self-efficacy of the respondents in terms of type of junior high school who attended. The data reveals a close difference in mean, both public and private junior high schools. Respondents who attended public schools during their junior high school had a higher self-efficacy with a mean of 2.67, followed by the respondents from private schools with a mean of 2.58. While the resulted p value ($p > 0.05$) suggests that there is no statistically significant difference between the research self-efficacy of students from public and private schools.

The results imply that the type of junior high school attended does not have an impact on the respondents self-efficacy in research. Seeing that both groups only have a small gap among the mean difference. However, some factors, such as having teacher support, a research learning program, research resources, and a research advance introduction lecture, may help add an impact in shaping the students and enhancing their research abilities in both students from public or private junior high schools. The study of Hill et. al (2022) negate the finding of this data as they found out in their previous research found greater graduate student interest in research to be associated with greater research self-efficacy and vice versa.

Table 16. Significant Relationship Between the Respondents' Research Anxiety Level and Research Self-Efficacy Level

Research Anxiety Level	Research Self-Efficacy Level	Pearson's r	p-value	Qualitative Description
		.563	.000	High Correlation

Legend:
 Pearson r Qualitative Description
 +0.40 – +0.59 High Correlation
 +0.80 – +0.99 Very High Correlation
 +0.20 – +0.39 Moderately Low Correlation
 +0.60 – +0.79 Moderately High Correlation
 +0.01 – +0.19 Very Low Correlation

Table 16 presents the significant relationship between the respondents' research anxiety level and research self-efficacy level. As can be seen in the tables, Pearson's r value is 0.563, which indicates a high correlation between the two variables. This suggests that as students' research anxiety increases, their research self-efficacy also tends to increase. The positive relationship between research anxiety and self-efficacy may be because students with higher anxiety may work harder, seek help, or engage more deeply with research, which improves their skills and boosts confidence. This positive relationship suggests that anxiety, rather than solely being a hindrance, may motivate students to actively engage with the research process, thereby improving their skills and self-efficacy.

Although anxiety appears to have a motivating effect in this context, it is important to recognize that excessive anxiety could hinder performance. The findings suggest a potential threshold where anxiety can be beneficial for skill development but beyond which it may impair learning outcomes. Educational programs could aim to moderate students' anxiety levels by providing structured support, such as mentorship or stress management workshops, which may enable students to utilize their anxiety as a motivation for skill development rather than a barrier.

This contradicts the study of Rezaei and Zamani (2013), which found a negative correlation between students' research self-efficacy and their research anxiety. This means that students who are more confident in their ability to perform tasks during the thesis and dissertation process tend to experience less anxiety, while those students with lower confidence are more anxious.

Table 17 presents the thematic analysis of the factors that affect the research anxiety of the students. As can be seen, the most notable factor affecting research anxiety among respondents is "deadline pressure and conflicting schedules," with 64 respondents (29.49%)



highlighting this as their primary concern. This was followed by "research writing challenges " (18.89%) and challenges with "group dynamics and communication" (17.05%). On the other end, the least reported factor is the "fees," with only 1 respondent (0.47%) mentioning it as a source of anxiety.

Table 17. Thematic Analysis on the Factors that Affect the Research Anxiety of the Respondents

Theme/s	Sample Responses	f(n=217)	%
Deadline pressure and conflicting schedules	The pressure of the deadline and the schedule of the defense	64	29.49
	Hectic schedule		
	Conflicting schedules and insufficient time given to conduct the research		
	Limited time and schedule		
	Time management		
Research writing challenges	I feel insufficient in writing a research paper	41	18.89
	My weakness in writing		
	Thinking of topic, writing as a whole		
Group dynamics and communication	Groupmates and leaders	37	17.05
	Uncooperative groupmates		
	Pressured because of groupmates		
	Lack of communication skill		
	How prepared or good my groupmates are		
Anxiety during research defense	Research defense	21	9.68
	Oral communication in defense as I find it hard to speak in front		
	Negative experience by the previous researchers with their panelists		
Time management difficulties due to procrastination	Laziness and procrastination	17	7.83
Lack of resources	The main factor is poor time- management caused by procrastination	14	6.45
	Lack of rrl with regard to topic		
	Finding rrls aligning to the sop to the questionnaire		
	Limited rrls		
	Lack of necessary information		
Lack of experience	I did not experience research in my Junior High School	11	5.07
	Does not have an experience on research		
	Unpreparedness and lack of experience		
Data gathering procedure	The process on gathering data	11	5.07
	Difficulty in analyzing data		
	Encoding large amounts of data		
Fees	Expensive	1	0.47
		Total	217 100

The data reveals that managing time and balancing various commitments is a critical issue for students conducting research, especially with conflicting schedules. This suggests that students may benefit from a workshop in time management training and flexible scheduling policies for research timelines. The anxiety tied to collaboration suggests that better group communication and conflict management skills should also be developed, which may alleviate some pressure.

Additionally, the prominence of "research writing challenges" indicates a need for enhanced support in research writing, including structured training or workshops. This aligns with the study of Matook (2020) as their surveyed population experienced research anxiety through the aspect of insufficiency of writing skills.

Table 18. Thematic Analysis on the Coping Strategies of the Respondents to Manage Anxiety in Research

Theme/s	Sample Responses	f(n=217)	%
Effective time management strategies	Time management; balancing my time well allocating time to rest	53	24.42
	I can manage my stress when conducting a research by firstly keeping my time schedule organized		
	I try to finish the task as soon as it is presented to be able to move on to another task		
	Having time table		
Engaging in recreational activities	Eating while doing research	50	23.04
	Being with friends		
	Sleeping, read novels, and watching		
	I redirect my attention to activities I consistently enjoy		
	I will find ways to make myself happy like having a nature trip which ease my mind		
Utilizing rest and relaxation	Sleep, relax	41	18.89
	I always take a rest whenever I feel stressed to freshen up my mind		
	By taking breaks and setting feeling every once a while		
	Cool down through free time		



Maintaining a positive mindset	I manage my stress by looking at the brighter side of things By being positive and have perseverance while doing it By not overthinking Have positivity, as long as you are confident of the rightness of what you're conducting	18	8.29
Seeking support from peers and mentors	Seeking help to my adviser and groupmates on the output I made Meditate and seek for help Help of peers/friends Consulting teachers Asking for help to someone who is knowledgeable in conducting research	17	7.83
Collaborate with groupmates	Asking for my help to my groupmates and asking for their opinions By coping with groupmates I try to reach out to my classmates of groupmates whenever I don't understand something I cooperate with my groupmates or learn how to make it effective online Effectively distributing certain tasks with my groupmates	15	6.91
Practice self- discipline and focus	By focusing properly on the research Finish my part immediately Proactive I just try to think rationally	12	5.53
Adapting through problem-solving and resourcefulness	Improving myself in understanding about research by reading I manage my stress by tackling problems and I immediately find new approaches to solutions Need to be resourceful in terms of lacking	6	2.76
Addressing uncooperative group members	Remove them in the group Report them to the adviser	5	2.30
Total		217	100

Table 21 shows the coping strategies of the respondents in managing research anxiety. As can be seen, the most common coping strategy was "effective time management strategies" used by 53 respondents (24.42%). Similarly, "engaging in recreational activities" came close with 50 respondents (23.04%), while "utilizing rest and relaxation" ranked third (18.89%). The least utilized strategy involved "addressing uncooperative group members" from group work, with only 5 respondents (2.30%) opting for this approach.

The reliance on time management and recreational activities highlights that students are attempting to maintain a balanced approach to reduce research-related stress. The notable percentage of students who rely on rest shows that mental well-being is crucial, and institutions might consider promoting healthier study-rest cycles. Interestingly, only a few respondents mentioned more drastic measures, such as removing uncooperative members, indicating that students might prefer collaboration and inclusion over exclusion when dealing with challenges.

Unfortunately, there is a limited body of literature on students' coping strategies to manage research anxiety. This gap highlights an opportunity for further research to explore effective methods for reducing academic stress. The findings of this study can serve as a basis for future research by identifying common strategies and suggesting areas where additional support may be beneficial.

Conclusions

Human curiosity and knowledge drive new ideas, making research significant today. Mastering skills for effective investigation is crucial. Research self-efficacy contributes to pursuing research, while research anxiety hinders students. Unfortunately, studies on the relationship between research anxiety and self-efficacy are lacking. This study aimed to fill that gap by examining the research anxiety and self-efficacy of twelfth graders at Saint Mary's University in Bayombong, Nueva Vizcaya, using a survey questionnaire to gather data and meet the study's objectives.

This study found that respondents experience moderate research anxiety levels, which implies that they exhibit noticeable anxiety that affects their research performance but does not completely hinder it. Moreover, they have a moderate research self-efficacy level, which indicates that they have a reasonable level of confidence and can engage in tasks with some assurance.

Furthermore, it was also found that there were no significant differences in the research anxiety level based on various factors such as sex, academic standing, and type of junior high school attended. However, there was a significant difference in research anxiety based on the strand/track group.

On the other hand, there were no significant differences found when grouped according to sex, strand/track, and type of junior high school attended in terms of research self-efficacy. Although there was a significant difference when grouped according to academic standing.

Lastly, a significant relationship between research anxiety and research self-efficacy was found. With a high correlation, this implies

that students who have a high level of research anxiety are more likely to have a high research self-efficacy level. The conclusion is limited on a specific location and learning styles of the students.

With the significant findings of this study, the researchers suggest the following recommendations:

To future researchers, research anxiety and research self-efficacy, especially across different community types, are still underexplored. This topic must be approached with patience and determination, despite the lack of existing data. Persistence can help improve student experiences with research across different community settings.

To future researchers, it is recommended to change the respondents in this study. Instead of focusing on senior high school students grouped by strand, it may be more effective to study college students divided by department. College students typically have more experience with research, which may provide deeper insights into their levels of anxiety and self-efficacy. This approach allows for targeted interventions and resources to help students in various departments and communities. This comprehensive approach will provide a solid foundation for future studies and significantly impact students' academic journeys.

The researchers also suggest that the research staff and clubs must conduct a collaborative learning environment where students will gather and socialize, and every student included in the program must help one another in learning the parts of research as one by helping each other properly understand research parts that can lessen their burden in research and to improve their social skills as well.

The researchers recommend the school conduct a program, workshop, or training for future researchers that assesses their self-efficacy to know what guidance can be given out to the researchers to help them improve their research self-efficacy.

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