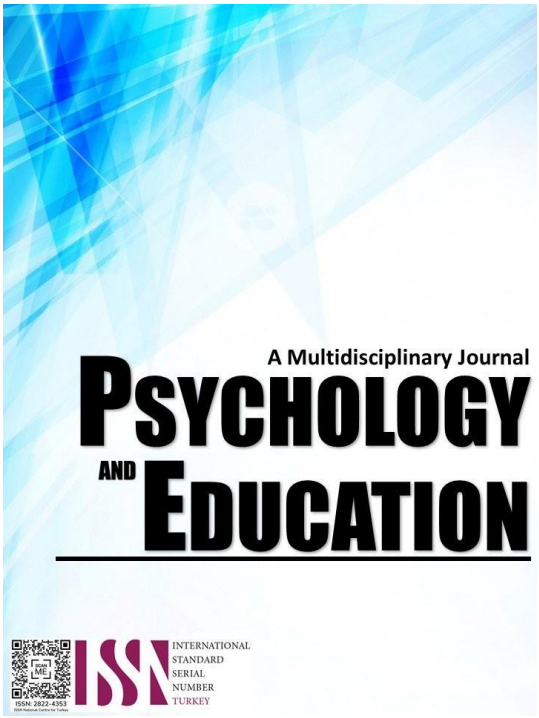
EXPLORING RESEARCH ANXIETY AMONG SENIOR HIGH SCHOOL STUDENTS: A QUANTITATIVE PERSPECTIVE



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Research Article

Exploring Research Anxiety among Senior High School Students: A Quantitative Perspective

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Abstract

With the increasing emphasis given to research nowadays as a critical skill across different academic fields, understanding the factors that might contribute to research anxiety is essential for improving engagement and performance of students. With this, the study was conducted to explore the research anxiety among senior high school students in a quantitative perspective. Two hundred fifty-six (256) senior high school students from a high school in the Municpality of Calinog, Iloilo, Philippines were subjected to descriptive and inferential research in which they are selected and surveyed using a validated researcher-made questionnaire. The result showed that as an entire group it was found that the respondents had a high level of research anxiety. Inferential analysis revealed no significant differences on the research anxiety levels of the respondents when classified as to sex; both male and female students were the same in terms of their level anxiety towards research. On the other hand, significant differences were observed between students in the academic and Technical-Vocational Livelihood (TVL) track in which TVL respondents showed a higher research anxiety level than their counterparts in the academic track. Finally, the respondents who are taking Practical Research 2 (Quantitative Research) showed a higher level of anxiety compared to those who are taking Practical Research 1 (Qualitative Research). It can be suggested from the result that sex does not significantly influence research anxiety, but instead the academic track and type of research subject taking highlighting the need for targeted interventions to support students, especially those in the TVL track and those undertaking quantitative research.

Keywords: *research anxiety, research, senior high school*

Introduction

In today's world of rapid change, research has become one of the most significant intellectual assets, allowing people to modify their lifestyles to conform to social norms. It is essential to shaping both the world in which humans live and the new experiences they encounter on a daily basis. It broadens the scope of several academic fields, such as science, business, economics, education, and medicine. Without a doubt, research has been crucial to humanity's tremendous future growth (Oguan, Bernal, & Pinca, 2014).

As the need for research grows, many school mandates that their students write a research paper that focuses on issues, worries, or themes that are relevant to their interests. In higher education, this must be finished by any college student hoping to receive a baccalaureate degree. However, the students' nervousness in their research class goes hand in hand with this obligation. Research methods courses are generally viewed negatively by many students taking the subject or course (Papanastasiou, 2005).

One could view the dread of conducting research in high school as a latent epidemic that lurks in the busy hallways of Philippine high schools. Students may frequently come into a variety of pressures that can heighten anxiety, especially when it comes to assignments involving research. It was believed that a number of factors contributed to students' negative attitudes toward the subject, such as the difficulty of the study, the volume of work allocated to them, and their anxiety over it. Research anxiety is more common among students who find research difficult and upsetting, and this decreases their course grades. Parallel to this, past studies found that attitude was a highly significant predictor of academic success. Most of this research supported Reynolds and Walberg's (1992) conclusion that attitude significantly affected students' academic performance, the more enthusiastic a person felt about a subject, the more probable it was that they would do well in school.

The Department of Education (DepEd) in the Philippines implements a number of programs aimed at encouraging, fostering, and maintaining a research culture throughout the nation's primary and secondary schools (DepEd, 2017). As part of the Enhanced Basic Education (K–12) Curriculum, two (2) Practical Research topics have been added, exposing Senior High School students to both qualitative and quantitative research. However, because they are not used to conducting research, a variety of factors, including their attitudes, may have an impact on students' understanding of the field and productivity in it.

Many basic education students still do not understand the value of research because this is new to them, and others may even have negative beliefs about it as a subject that should be covered in the curriculum. Using this premise as a foundation, the researcher hopes to quantitatively explore, the research anxiety among senior high school learners. An inferential analysis was also conducted using variables such as sex, track and as to the type of research they are taking.

Furthermore, the researcher selected this study for pragmatic considerations as well. He wishes to undertake a study that is relevant to his field of interest, the accessibility of the research site, and the availability of materials and resources. The locale of the study was a high school offering senior high school in the municipality of Calinog, Iloilo, Region VI, Western Visayas, Philippines. This is also where the researcher is affiliated.

Methodology

Research Design

This study utilized both descriptive and inferential research methods to examine the research anxiety among senior high school students, analyzing it across the entire sample and categorized further as to sex, track, and as to research subject they are taking.

Respondents

The respondents of this study were the two hundred fifty-six (256) officially enrolled senior high school learners from a high school in the municipality of Calinog, Iloilo, Region VI, Western Visayas, Philippines. The school was chosen by the researcher since this is where the researcher is employed, for accessibility reasons. Cochran's sample size formula (Cochran 1977) was used to determine the sample size of the study. These samples/respondents were chosen through stratified random sampling.

Instrument

A researcher-made questionnaire was designed specifically for the study by the researcher as a data collection tool. This was divided into two sections. The first section is the personal data sheet, which was used to collect participants' personal information (such as sex, track, and type of research subject taken). The second section was a Likert-scale (5-point) questionnaire. These were composed of questions that were used to gauge the research anxiety of the respondents.

The above-mentioned questionnaire underwent the process of validation. This is to assure the external and content validity of the instrument. The items in the questionnaire were cautiously validated by three (3) experts related to the field of research and statistics and language. This is to ensure that the item in the questionnaires effectively captures the topic under investigation and checked for common errors, confusion, and leading questions.

The questionnaire also underwent pilot testing on a subset of the intended population. This was conducted among 40 senior high school learners in other high schools in the same municipality. This was done to ensure its reliability and to check the internal consistency of the questions using Cronbach's Alpha (CA). The result of the reliability test was highly reliable having 0.871 (CA).

Data Analysis

To answer the problem, gathered data were tallied, processed, and analyzed and examined using the Statistical Package for Social Sciences (SPSS) version 22 with an alpha set at 0.05. Data results were shown through the table to show the descriptive and inferential results.

Statistical Tools. This study sought the help of an expert to present the result and findings of the study. The researcher, together with the statistician used the mean, and t-test to analyze the data to understand the research anxiety among the senior high school learners.

Results and Discussion

The result on table 1 shows the level of research anxiety among senior high school learners. In its full implementation, the K to 12 Curriculum which covers 13 years of basic education from Kinder to Grade 12. This curriculum the Department of Education, expects learners to be have acquired skills that will better prepare them for the future. One of these skills is doing research. One of the applied subjects in senior high school regardless of their track are Practical Research 1 (Qualitative Research) and Practical Research 2 (Quantitative Research).

Table 1. *Research Anxiety among Senior High School Learners*

	Mean	*Sd*	*Description*
Entire Group	3.68	0.56	High
Sex			
Male	3.66	0.54	High
Female	3.69	0.57	High
Track			
Academics	3.64	0.54	High
TVL	4.02	0.60	High
Research Subject			
Practical Research 1 (Qualitative)	3.57	0.52	High
Practical Research 2 (Quantitative)	3.80	0.57	High

Legend for Research Anxiety: 4.20 - 5.00 (Very High); 3.40 - 4.19 (High); 2.60 - 3.39 (Average); 1.80 - 2.59 (Low); 1.00 - 1.79 (Very Low)

Research is likely considered one of the most difficult subjects in senior high school. The methods and techniques of conducting research are imparted to the students, who ultimately produce a research output. The researcher believed that students' fears about the subject are more likely to arise from their challenges. This adheres with the result of Palmes (2023) wherein the researcher perceived that the difficulties that the learners experience are more likely why learners develop fear in learning science which also affects their self-esteem as a student. According to Mirawdali, Morrissey, and Ball (2018) as cited by Palmes (2023), most studies on academic

anxiety do not differentiate by subject matter, however, some people are anxious about performance in specific subject areas or skills. In general, according to the literature, academic anxiety is a well-established, significant predictor of academic performance. Students with high levels of anxiety are unable to perform to the best of their ability.

The result of the study also agrees with Murtonen & Lehtiner (2003) and Wilson & Onwuegbuzie (2001) who reported that students enter research methods courses with feelings of stress and anxiety, although in most cases, they are not aware of what research methods are all about. Students tend to believe that research methods courses are overwhelming and that it is almost impossible to get through them.

The data revealed that the level of research anxiety of the participants as an entire group was high (M = 3.68, s.d.= 0.56). When they were classified as to sex both male and female learners showed a high level of research anxiety (M = 3.66 and 3.69; s.d.= 0.54 and 0.57). The result also revealed that when the learners were classified as to the track taken, both learners who were taking academics and TVL (Technical-Vocational and Livelihood) track showed a high level of research anxiety (M = 3.64 and 4.02; s.d.= 0.54 and 0.60). Lastly, when classified as to the type of research subject taken, learners who are taking Practical Research 1 (Qualitative) and Practical Research 2 (Quantitative) showed the same level of high research anxiety M = 3.57 and 3.80; s.d.= 0.52 and 0.57).

This simply means that regardless of sex, both male and female learners have the same level of concept in terms of fear in learning and doing research. There are few literatures that highlight research anxiety among learners. Since, research is also an academic subject, the result of this study is congruent to the results of the study indicating no significant difference in academic anxiety between male and female students. Studies like of Duru & Balkis (2014) where they focused on the relationship between academic procrastination and academic performance with a focus on the roles of gender and academic anxiety. It was found, that no significant differences in academic anxiety levels between male and female students. Another study by Bong & Skaalvik (2003) explored the gender differences in self-concept and anxiety in relation to academic subjects. They found that although coping strategies differ, the overall levels of academic anxiety were similar across genders.

In a more specific relevance in research anxiety, the result of the study is similar to the study of Baloğlu (2003), wherein they investigated the differences in research anxiety among graduate students and found no significant differences between genders. Onwuegbuzie (2004) also found that gender was not a significant predictor of research anxiety. In the same vein Papanastasiou & Zembylas (2008) also concluded that there were no significant differences in research anxiety between genders. These references should help substantiate the claim of no significant difference in research anxiety levels among learners based on sex.

Several research also supports the findings that there is a significant difference in research anxiety among learners from different tracks. Studies such as of Onwuegbuzie (1997) where he examined statistics anxiety among graduate students from different academic tracks and found significant differences in anxiety levels based on their field of study. In the same vein the study conducted by Murtonen & Lehtinen (2003) wherein investigated differences in research anxiety among students from various disciplines and reported significant variations in anxiety levels across different academic tracks. And lastly the study of Papanastasiou (2005) wherein examined research anxiety among education and non-education students and found significant differences in anxiety levels based on the student's academic track. These references should help substantiate the claim that there is a significant difference in research anxiety among learners from the two different tracks. Furthermore, the result showed that learners who are taking the TVL strand showed a higher research anxiety based on the mean. This might be true since each track in senior high school is designed to cater to the different interests and career goals of the students who enroll in them. TVL learners chooses this strand to embark on a path that prioritizes practical skills and hands-on experience. In contrast, theoretical knowledge is the emphasis of academic track necessary for higher education. Preparation students for the rigors of college or university life is usually the is the focus of its curriculum.

The respondents were also classified as to research subject they are taking. Using inferential analysis it was found that there is a significant difference in research anxiety when the respondents are grouped as to the research subject they are taking [Practical Research 1 (Qualitative Research) and Practical Research 2 (Quantitative research)], with the mean of Practical Research 2 (Quantitative Research) being higher than that of Practical Research 1 (Qualitative Research). The result is similar to several studies conducted. Studies like of Onwuegbuzie & Leech (2002) who examined the levels of research anxiety experienced by students conducting research, found that students involved in quantitative research showed a higher levels of research anxiety compared to those involved in qualitative research. Papanastasiou (2005) reported a significant higher levels of anxiety for those who are into quantitative research compared to those in qualitative research courses. Macher, Paechter, Papousek, & Ruggeri (2012) who also focused on the differences in anxiety levels among students engaged in different types of research, found that students doing quantitative research experienced higher anxiety levels compared to those who are into qualitative research.

It can be implied that the respondents are more anxious in doing Practical Research 2 (Quantitative Research) compared to Practical Research 1(Qualitative Research) based on the mean result. In can be implied that learners often experience heightened anxiety when engaging in quantitative research compared to qualitative research. One probable reason is the complexity of statistical analysis involved in quantitative research. According to Onwuegbuzie & Wilson (2003), students frequently encounter intricate mathematical concepts and statistical techniques, which can be daunting, especially for those lacking confidence in their math skill. High levels of precision and accuracy in both data collection and analysis is required for Quantitative research. That is why the fear of making in either calculations or misinterpreting their data, might contribute to one's anxiety, fearing that even minor errors could undermine the

validity of their entire study (Onwuegbuzie & Leech, 2002). Concepts such as Statistical significance, regression models, and probability distributions are concepts seem abstract and challenging to grasp. This perceived complexity often leads to a steep learning curve, which can intimidate students and contribute to their anxiety (Papanastasiou, 2005). Macher et al., (2012) also stated that prior negative experiences with math or statistics courses can also influence students' anxiety levels. Those who have struggled with numerical tasks in the past may bring these negative experiences into their research work, leading to a lack of confidence in their ability to conduct quantitative research effectively. This lack of confidence can be a significant barrier, making the research process even more stressful.

Table 2. T-*test results for the Difference in the level of Research Anxiety among the Respondents*

Compared Groups	*df*	*Mean*	*s.d.*	*t-ratio*	*t-prob*	*Decision*
Sex						
Male	256	3.66	0.54	-.415	.679	Accept Ho
Female		3.69	0.57			
Track						
Academics	256	3.64	0.54	-3.480	.001*	Reject Ho
TVL		4.02	0.60			
Research Subject						
Practical Research 1 (Qualitative)	256	3.57	0.52	-3.297	.001*	Reject Ho
Practical Research 2 (Quantitative)		3.80	0.57			

Conclusions

The result showed that the senior high school students experience feeling of anxiety towards their research subjects. Base on the inferential analysis results, it can be concluded that research anxiety among the respondents do not differ with sex (male and female) but differ with tracks (academic and TVL) and the type of research subjects they are taking (Practical Research 1, Qualitative research and Practical Research 2, Quantitative research.

Numerous factors may have influenced their anxiety level such as, lack of research skills, restricted access to resources, and the high expectations placed on students, may have contributed to their anxious feelings towards research. The result also suggests that sex it is not a factor to consider in their research anxiety. Both male and female students may have the same experience in terms of challenges and perceptions towards research due to shared experiences with the processes, available resources, or in the delivery of the instruction. The level of research anxiety of Technical-Vocational Livelihood students is significantly higher than those in the academic tracks. This may have been attributed in the focus of each curriculum since TVL curriculum usually give emphasis in practical skills over academic research. They may have limited exposure to intensive research activities, which could have contributed to the difference in anxiety. Lastly, research anxiety differs significantly on the research subjects taken by the respondents showing students who are enrolled in Practical Research 2 (Quantitative research) feel more anxious than those taking Practical Research 1 (Qualitative research). The complexity of data management, statistical analysis, and the necessary mathematical rigor may have caused the difference in their level of anxiety, which may have been difficult for students who lack strong mathematical backgrounds.

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