



Mathematics Anxiety of Mathematics Students: A Comparative Study Based on Sex, Year-Level, Age, and Socio-economic Status

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ABSTRACT

Mathematics anxiety is one of the greatest problems that most of the schools and other educational institutions try to address, as it contributes to the negative performance and achievement of the students in mathematics. Hence, it is important to investigate the mathematics anxiety of the students, in order to think of a solution to reduce their anxiety feeling. In this study, 63 Bachelor of Science in Mathematics students participated, and survey questionnaires were utilized for the collection of data. Statistical tools, such as Frequency, Percent, T-test for independent samples, and ANOVA test, were used to treat the data and answer the problems. It was revealed that most of the respondents have high anxiety, and same level of anxiety were felt by the respondents in preparing for and taking examinations, giving incorrect answers in recitations, and getting good grades in mathematics subjects. Moreover, among the different profiles of the respondents, only sex have a significant difference in mean mathematics anxiety. Even though, there were more female respondents, they experienced greater mathematics anxiety than male respondents. Existing high mathematics anxiety among the respondents is concerning, since they are pursuing and acquiring degrees in mathematics.

Keywords: Mathematics anxiety, Mathematics

1. Introduction

Mathematics anxiety is one of the greatest problems that most of the schools and other educational institutions try to address. Mathematics anxiety is more than just being nervous about mathematics. It is characterized by feeling of panic, tension, and helplessness aroused by doing math or just by thinking about it (Ashcraft, Kirk, 2001, cited by Gearty, n.d.). Also, Hill, et. al. (2016) connotes that Mathematics anxiety (MA) is a debilitating negative emotional reaction towards mathematics. Generally, it is nervous and anxious feelings when dealing and working with mathematics. Suinn et. al. (1972) develop a questionnaire that measures mathematics anxiety of the students: Mathematics Anxiety Rating Scale (MARS). It is a 90-item questionnaire designed to explore mathematics anxiety, and with this instrument, dimensions of mathematics anxiety were explored using factor analysis. Rounds and Hendel (1980) discovered Mathematics Test Anxiety and Numerical Anxiety as dimensions of Mathematics anxiety. Since MARS have numerous items, researchers tried to shorten it. Suinn and Winston (2003) created a 30-item revised version of MARS, in which the redundant and irrelevant items were removed, and the two dimensions were considered. May (2009) developed MSEAQ or Mathematics Self-Efficacy and Anxiety Questionnaire. MSEAQ is the combination of anxiety and self-efficacy towards mathematics which measures such of college students. The anxiety part of the questionnaire was based from Mathematics Anxiety Rating Scale (MARS). Moreover, the author claimed that the instrument is reliable and valid in measuring mathematics anxiety of college students. Another problem concerning mathematics anxiety that many researchers have investigated is its causes. One of which is the type of instructional method as identified by Clute (1984). Wilson and Thornton (2005) ascertained teacher's negative attitudes toward their students as contributors of mathematics anxiety. Personal profile is also believed to have an influence in mathematics anxiety. Among personal characteristics, gender is commonly used as variable integrated to mathematics anxiety. Females tend to develop more anxiety than males in mathematics, as mathematics is perceived to be dominated by males, resulting. This notion that there is a difference in gender in terms mathematics anxiety is supported by Zettle and Houghton (1998), Recber (2011), Calvert (1981), Mutodi and Ngirande (2014), Delgado and Kassim (2019). In a meta-analysis of 151 studies, females have higher levels of anxiety than males (Hembree, 1990). However, Baloglu (2004) emphasized that there are no gender differences in statistics anxiety. Also, anxiety, to some studies, is related to age. Baloglu and Kocak (2006), in their study, claimed that older students experience higher mathematics test and course anxiety. Hadfield and Mcneil (1994) found that age level is a significant predictor of mathematics anxiety among elementary students. However, Calvert (1981) stressed that age is not significant as determiner of level of anxiety. Year level can also have possible impact on mathematics anxiety, as year level is aligned with age – especially to regular college students. Moreover, in a study of Estonato and Dio (2019), it was concluded that one of the causes of mathematics anxiety among senior high school students is the mathematical concepts in calculus. In college, the complexity of the subjects or courses tend to increase as the year level go higher, especially to the mathematics majors. Mathematics anxiety, likewise, is influenced by socio-economic status. Socio-economic status is commonly grouped into three (levels, high, middle, and low), in relation to others. According to the study of Baya'a (1990), socio-economic status has stronger effect on mathematics anxiety than gender. Similarly, Adimora and Nwokenna (2015),

suggested that socio-economic status has a significant influence on the level of mathematics anxiety. However, no significant impact was concluded in the study of Delgado and Kassim (2019).

As a negative feeling of students, Mathematics anxiety adversely impacts students, in present situation and in the future as well. This attitude causes the students to avoid mathematics courses in college. However, the most serious impact of mathematics anxiety is its contribution to the negative performance and achievement of the students in mathematics. Many studies strengthen the notion that math anxiety negatively affects the performance of the students, especially in mathematics. One of which is the study of Devine, et.al. (2012), where it was observed that high levels of MA (Mathematics Anxiety) were related to poorer levels of mathematics performance. This finding is also aligned to the study of Zhang, et.al. (2019), in which the results indicated that there was a robust negative correlation between MA and Math performance. In college, Sapazhanov et. al. (2020) investigates the factors that affects the students' academic performance in mathematics. Its findings suggested mathematics anxiety as one of the factors with an influence on mathematics achievements. Also, Brezavšček et. al. (2020) and Sa'ad et. al. (2014) confirmed a negative correlation between mathematics anxiety and mathematics performance. This implies that a higher level of anxiety leads to poorer performance in mathematics. In the Philippines, some studies also support these findings. Manalaysay (2019) and Estonanto (2017) revealed in their study that mathematics anxiety has an effect on the students' performance and achievement in mathematics. With these reasons, it is important to ascertain the mathematics anxiety of the students. In doing so, teachers and schools can spoil, or if possible, eradicate the anxiety feeling of the students within themselves by implementing anti-anxiety and student-friendly interventions in mathematics. This would be beneficial to the students in order to learn more effective; especially to mathematics major students, for mathematics anxiety within these students would be terrible in finishing their courses. Moreover, the inconsistencies in the findings of the researchers about the factors discussed support the need to further investigate such variables.

Due to these facts, this study was conceptualized to explore the mathematics anxiety of the students, especially those who are in mathematics majors. This study aims to investigate the mathematics anxiety of Bachelor of science in Mathematics students. Specifically, this study aims to answer the following:

1. What is the profile of the respondents in terms of:
 - 1.1. Sex
 - 1.2. Age
 - 1.3. Year Level
 - 1.4. Socio-economic status
2. What is the level of mathematic anxiety of the respondents?
3. Is there a significant difference in mean mathematics anxiety score of the respondents when grouped by:
 - 3.1. Sex
 - 3.2. Age
 - 3.3. Year level
 - 3.4. Socio-economic status

2. Methodology

This study employed descriptive-comparative research design. The problems were answered quantitatively. Descriptive design determined the level of anxiety of the respondents, as well as their profiles. Comparative was used to ascertain whether a difference exists in mathematics anxiety within the different profile groups.

This study targeted the whole population of Bachelor of Science in Mathematics students from Nueva Vizcaya State University, Bayombong Nueva Vizcaya. Totally, there were 70 students from this course, and among which, there were 37 first year students, 14 second year students, 10 third year students, and 9 fourth year students. However, only 63 students responded, and those who did not participate were either unwilling or unresponsive on Facebook Messenger. Table 1. Year level of the samples

Year level	Samples	Year level	Samples
First year	34	Third year	9
Second year	12	Fourth year	8

This study utilized a survey questionnaire comprised of two parts. The first part of the questionnaire asked about the profile of the respondents, as to name, sex, age, year level, and socio-economic status. The last part is a 5-point Likert scale instrument that measures mathematics anxiety. This questionnaire was adapted from MSEAQ (Mathematics Self-efficacy and Anxiety Questionnaire) developed by May (2009). MSEAQ, originally, measures two constructs: Mathematics Self-efficacy and Mathematics Anxiety. The researcher only took the mathematics anxiety part and relate which

to the profile of the respondents. The questionnaire was composed of 15 statements, for which the response was the frequency the respondents feel or experience each statement. The range of choices was from Never to Usually, which weighs from 1 to 5.

The collection of data was done through the use of online social platforms. Facebook Messenger and Google Forms were utilized to gather the responses of the respondents. All the target respondents were messaged individually. Before sending the questionnaire (in Google Forms), introduction of the researcher, the intention of the research, and asking for consent to answer the questionnaire were initially done. The data gathering was done during the vacant and free time of the respondent so as to avoid disruption of classes.

After collecting the data, statistical analysis was performed, through the use of Microsoft Excel and SPSS, to achieve the objectives of the study. To report the different profile of the respondents, table was utilized. For the second objective, which is the level of mathematics anxiety of the respondents, the mean mathematics anxiety score of the respondents is interpreted qualitatively as shown in table 2. Afterwards, Frequency and Percent was used to tally the level of mathematics anxiety of the respondents, which was presented table. Also, in order to describe the level of anxiety for each statement, mean score and the guide for interpretation (table 2) were again used. As for the third objective, the comparison of mean mathematics anxiety of the respondents when grouped by profile, statistical comparison tools were used. Before performing the comparison, preliminary analyses were firstly conducted – such as determining the nature of the data and test for normality – in order to ascertain whether to use Parametric or Non-parametric tools for comparison. Consequently, the statistical tool used for comparison of two independent groups, such as sex, is t-test for independents samples. While for three or more profile groups, ANOVA (Analysis of Variance) was used.

Table 2. Guide for Interpretation

Scale	Mathematics	Anxiety Level
4.21 – 5.00		Very High Anxiety
3.41 – 4.20		High Anxiety
2.61- 3.40		Average Anxiety
1.81 – 2.60		Low Anxiety
1.00 – 1.80		Very Low Anxiety

3. Results

Problem 1. The profile of the respondents

Table 3. Profile of the Respondents

Profile		Frequency	Percent
Sex	Male	27	42.9
	Female	36	57.1
Age	18 years old	10	15.9
	19 years old	20	31.7
	20 years old	10	15.9
	21 years old	10	15.9
	22 years old	3	4.8
	23 years old	1	1.6
	24 years old	3	4.8
	25 years old	4	6.3
	26 years old	1	1.6
	37 years old	1	1.6
Year level	First year	34	54
	Second year	12	19.0
	Third year	9	14.3
	Fourth year	8	12.7
SES	Low	12	19.0
	Middle	48	76.2
	High	3	4.8

In this study, from the total of 70 Bachelor of Science in Mathematics students, 63 students responded. Table 3 above shows the profile of the respondents, and among the samples, there were more female (57.1%) than male respondents (42.9%), Moreover, regarding the age of the students, most of the students are 19 years old (31.7%), followed by ages 18, 20, and 21 years old (all in 15.9%). These ages contributed to the year level of the respondents as lower year students tend to be younger; as can be seen in the table, the majority of the respondents were first year students (54%), followed by second year students (12%). There were less respondents who are older and are in higher years, which may imply that the number students in this course shrinks as they get in higher year level. In socio-economic status of the respondents, the majority of the respondents view their social and financial status as in the middle (48%), and only 4.8% were in high socio-economic status, which is the least.

Problem 2. Level of mathematics anxiety of the respondents

Table 4. Level of Mathematics Anxiety of the Respondents

Level of Mathematics Anxiety	Frequency	Percent
Very low anxiety	3	4.8
Low anxiety	13	20.6
Average anxiety	19	30.2
High anxiety	22	34.9
Very high anxiety	6	9.5

The table 4 shows the level of the mathematics anxiety of the students. Among the respondents, most of them had “High anxiety” in mathematics (34.9%), followed by “Average anxiety” with 30.2%. Moreover, there were more students with “Very High Anxiety” (9.5%) than “Very low anxiety” (4.8%), which was least. These findings may suggest that the Bachelor of Science in Mathematics students have Average to High mathematics anxiety. This is quite concerning since they are pursuing and the nature of what they are learning is mathematics. Difficulty and struggle may arise to these students and could lead to low achievement as Mathematics anxiety negatively impacts the students’ mathematics performance (Devine, et.al., 2012; Sapazhanov et. al., 2020; Brezavšček et. al., 2020; Sa’ad et. al., 2014; Manalaysay, 2019; Estonanto, 2017). Consequently, students tend to drop subjects or shift to other courses resulting to the delay in acquisition of degrees in college.

Table 5. Level of Anxiety of Each Statement

Statement	Mean	Median	Std. Deviation	Level of math anxiety
1.) I get tense when I prepare for a mathematics test.	3.65	4	.919	High anxiety
2.) I get nervous when I have to use mathematics outside of school.	2.56	2	1.012	Low anxiety
3.) I worry that I will not be able to use mathematics in my future career when needed.	2.63	3	.955	Average anxiety
4.) I worry that I will not be able to get good grades in my mathematics subjects.	3.52	4	1.060	High anxiety
5.) I worry that I will not be able to do well on mathematics test.	3.59	4	.994	High anxiety
6.) I feel stressed when listening to mathematics instructors in class	2.75	3	1.092	Average anxiety
7.) I get nervous when asking questions in class.	3.17	3	1.025	Average anxiety
8.) Working on mathematics homework is stressful for me.	2.81	3	.998	Average anxiety
9.) I worry that I do not know enough mathematics to do well in future mathematics subjects.	3.14	3	.948	Average anxiety
10.) I worry that I will not be able to complete all assignments in a mathematics subject.	3.16	3	.971	Average anxiety
11.) I worry I will not be able to understand mathematics.	3.22	3	1.039	Average anxiety
12.) I worry I will not be able to get an A or high remarks in my mathematics subjects.	3.27	3	1.110	Average anxiety
13.) I worry that I will not be able to learn well in my mathematics subjects.	3.32	4	.947	Average anxiety
14.) I get nervous when taking a mathematics test.	3.71	4	1.084	High anxiety
15.) I am afraid to give an incorrect answer during my mathematics class.	3.43	4	1.088	High anxiety
Overall	3.196	3	1.071	Average anxiety

The table 5 above shows the level of anxiety for each statement. All statements were felt by the respondents as either Low, Average, or High anxiety. Overall, the students feel average in anxiety and most of the statements had Average anxiety. Noticeably, statements 1, 5, and 14, which talks about anxiety in mathematics tests or examinations, were experienced by the students with “High Anxiety”. Students feel very anxious when preparing for and taking exams in mathematics. Although, test anxiety is suggested to be a separate construct, mathematics anxiety is more closely related to which than to measures of mathematics ability and performance (Hembree, 1990; Ashcraft et. al., 1998; as cited by Dowker et. al., 2016). Also, students worry about having good grades in mathematics (statement 4), higher than having high remarks (statement 12). Bachelor of Science in Mathematics students are more anxious in achieving passing grades than outstanding grades. This may imply that these students perceive the difficulty of their mathematics subjects that they aim more on passing than to have high grades. Moreover, during classroom discussions in mathematics classes, students have average anxiety when it comes to listening to instructors and in asking questions (statements 6 and 7). However, in recitations, students have high anxiety in giving incorrect answers. Perhaps, these students think that they might get embarrassed when did so. This may result to reluctance of raising hands during recitations. The remaining statements, which are about the future in mathematics (statements 3 and 9), mathematics assignments (statements 8 and 10), and performance in mathematics (statement 11), are experienced by the students with Average anxiety, except for statement 2. Statement 2 refers to the use of mathematics anxiety outside the school, toward which students feel low anxiety. Students might think that the mathematics that they are learning, particularly those that have little practical use in the actual world, cannot be applied outside of school. Hence, they worry less in using mathematics in the real world.

Problem 3. Comparison of mean mathematics anxiety of the respondents when grouped by their profiles

3.1. Comparison of mean mathematics anxiety of male and female respondents

Table 6. T-test Independent Result of Comparison of Male and Female Respondents' Mean Mathematics Anxiety

Sex	N	Mean	Std. Deviation	Df	t	Sig. (2-tailed)
Male	27	2.9531	.79223	61	-2.369*	.021*
Female	36	3.3778	.63105			

The table above shows the comparison of mean mathematics anxiety of male and female respondents. Female respondents had greater mathematics anxiety, with $M=3.3778$ and $SD=0.63105$, than that of male respondents ($M=2.9531$ and $SD=.79223$). The difference was supported by the result from t-test for two independent samples, since $t(61) = -2.369$, $p=0.021$. This indicates that there exists a significant difference in the mean mathematics anxiety of the respondents when grouped by sex. Thus, female Bachelor of Science in Mathematics students was greater the male students in terms of mathematics anxiety. These results were aligned with the findings of Zettle and Houghton (1998), Recber (2011), Calvert (1981), Mutodi and Ngirande (2014), Delgado et.al. (2019), and Hembree (1990).

3.2. Comparison of mean mathematics anxiety of the respondents when grouped by age

Table 7. Descriptive Statistics of Mathematics Anxiety When Grouped by Age

Age	N	Mean	Std. Deviation
18 years old	10	3.1200	.55136
19 years old	20	3.1800	.75117
20 years old	10	3.3600	.73917
21 years old	10	3.2467	.88446
22 years old and older	13	3.1128	.77335

Table 8. ANOVA Result of Comparison of Mean Mathematics Anxiety of Respondents When Grouped by Age

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.447	4	.112	.199	.938
Within Groups	32.591	58	.562		
Total	33.039	62			

Tables 7 and 8 shows the descriptive and comparison of mean mathematics anxiety of the respondents when grouped by age. According to table 6, the mean mathematics score of the different age groups were somewhat different with each other in which students who are 20 years old hold the highest mean ($M=3.36$ and $SD=0.73917$), whereas the lowest mean is from the 22 years old and older age group ($M=3.1128$ and $SD=0.77335$). The slight difference in mean contributes to the comparison of ANOVA, as it was revealed that there was no significant difference in the mean mathematics anxiety of the respondents when grouped by age, since $F(4,58)=0.199$, $p=0.938$. This implies that Bachelor of Science in Mathematics students possess the same level of mathematics anxiety, regardless of their age. These conclusions do not support the findings of Baloglu and Kocak (2006) in which they claimed that the older students feel greater anxiety in mathematics than younger ones. Actually, this study somewhat contradicts so, for it was found that the older students possessed the lowest mean anxiety. However, since the difference is insignificant, the contradiction had insufficient evidence.

3.3. Comparison of mean mathematics anxiety of the respondents when grouped by year level

Table 9. Descriptive Statistics of Mathematics Anxiety When Grouped by Year Level

Year level	N	Mean	Std. Deviation
First year	34	3.0118	.68115
Second year	12	3.2000	.87939
Third year	9	3.6000	.70553
Fourth year	8	3.5167	.50615

Table 10. ANOVA Result of Comparison of Mean Mathematics Anxiety of Respondents When Grouped by Year Level

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.446	3	1.149	2.290	.088
Within Groups	29.593	59	.502		
Total	33.039	62			

The table 9 displays the descriptive statistics of mean mathematics anxiety of the different year level groups. According to which, the highest mean is possessed by the third-year students ($M=3.6$ and $SD=0.70553$). This may be due to the fact that more mathematics subjects are taken on this year level than the early year level as minor subjects are expected to be finished by the time they reach third year. Moreover, such subjects are also more difficult than the subjects taken during the first and second years. Also, Bachelor of Science in Mathematics students get to choose their electives for third year. In contrary, the lowest mean mathematics anxiety is felt by the first-year students ($M=3.0118$ and $SD=0.68115$). Unlike third year, first year students take less mathematics subjects and more minor subjects, and such are merely introductory mathematics subjects. This is perhaps the reason why first year Bachelor of Science in Mathematics students feel less anxiety in mathematics. However, according to table 10, the ANOVA reveals that there exists no significant difference in mean mathematics anxiety of the different year levels, since $F(3,59)=2.290$, $p=0.088$. Thus, year level has no bearing on the level of anxiety in mathematics that students experience. The result also spoils the conclusion that was recently claimed.

3.4. Comparison of mean mathematics anxiety of the respondents when grouped by socio-economic status

Table 11 shows the comparison of mean mathematics anxiety of Bachelor of Science in Mathematics students when grouped by their socio-economic status. T-test for two independent samples reveals that, even though Middle to High ($M=3.2209$ and $SD=0.69147$) had greater mean anxiety than that of Low socio-economic status students ($M=3.0889$ and $SD=0.90267$), there exists no significant difference in mean mathematics anxiety of the students when classified in terms of socio-economic status – since $t(61)=-0.561$, $p=0.577$. This implies that regardless of the socio-economic status, Bachelor of Science in Mathematics experience the same level of mathematics anxiety. These findings do not support the studies of Baya'a (1990) and Adimora and Nwokenna (2015), in which it was claimed that socio-economics status has significant influence on the level of anxiety. On the other hand, the conclusion is aligned with the findings of Delgado et. al. (2019) that socio-economic status has no significant impact on anxiety of the students.

Table 11. T-test Independent Result of Comparison of Mean Mathematics Anxiety When Grouped by Socio-economic Status

Socio-economic status	N	Mean	Std. Deviation	df	t	Sig.
Low	12	3.0889	.90267	61	-.561	.577
Middle and High	51	3.2209	.69147			

Summary of Findings

This study was conducted to investigate the mathematics anxiety of Bachelor of Science in Mathematics students of Nueva Vizcaya State University Bayombong campus. The following findings were deduced from the results of this study:

1. In this study, out of 70 population of Bachelor of Science in Mathematics, 63 students were sampled. Among which, the majority of the respondents was from first year level. Moreover, most of the samples are 19 years old. There were more female respondents than male respondents. In terms of socio-economic status, the majority of the samples were in middle.
2. Most of the respondents had "High anxiety" in mathematics (34.9%), followed by "Average anxiety" (30.2%)
3. From the statements, the overall level of anxiety of the respondents in mathematics was average
4. Students had "High anxiety" in preparing and taking of mathematics examinations.
5. The respondents also had "High anxiety" when it comes to getting good grades in their mathematics courses, while the had "Average anxiety on achieving outstanding remarks.
6. During classroom discussions, students felt "High anxiety" in recitation for giving incorrect answers when asked.
7. In contrary, students had "Low anxiety" when thinking about using mathematics outside the school.
8. Female respondents experienced significantly higher anxiety than male in mathematics
9. Among the different age groups, 20-year-old students had the highest mean mathematics anxiety, while the lowest of that was from 22 years old and older students. However, there was found no significant difference in mean mathematics anxiety of the different age groups.

10. The highest mean anxiety in mathematics among the year level groups was from third year students, but the lowest was from first year students. However, the difference was revealed to be not significant.

11. Lastly, there was also no significant difference found in the mean mathematics anxiety when grouped by the socio-economic status of the respondents.

Conclusions

Mathematics anxiety, from many researches, is an established problem needed to be addressed as it negatively impacts the performance and achievements in mathematics, and career choices (Devine, et.al., 2012; Sapazhanov et. al., 2020; Rezavscek et. al., 2020; Adamu, 2014; Manalaysay, 2019; Estonanto, 2017). Hence, it would be beneficial for the students to investigate the existing mathematics anxiety among them. In this study, Bachelor of Science in Mathematics were studied to and assessed their mathematics anxiety. Unfortunately, it was found that most of these students had "High anxiety" in mathematics. This is concerning since they are pursuing and the nature of what they are learning is mathematics. Difficulties and struggles could be the result of their anxiety, which could lead to low achievement or performance in mathematics. Consequently, students tend to get failing grades, worse yet, they might think of dropping subjects or shift to other courses resulting to the delay in acquisition of degrees in college.

It was also revealed that these students had high anxiety in preparing and taking mathematics examinations. According to Hembree (1990) and Ashcraft et. al. (1998), as cited by Dowker et. al. (2016) test anxiety is suggested to be a separate construct but mathematics anxiety is more closely related to which than the measures of mathematics ability and performance. The difficulty of their mathematics subjects might contributed to their high anxiety during tests. Perhaps, they are worried of getting failing or low scores, that is why they feel highly anxious before and during mathematics examinations. Another finding is that, students felt higher anxiety in getting good grades than getting high remarks. This may imply that these students perceive the difficulty of their mathematics subjects that they aim more on passing than to have high grades. Moreover, during classroom discussions in mathematics classes, students have average anxiety when it comes to listening to instructors and in asking questions. However, in recitations, students have high anxiety in giving incorrect answers. Perhaps, these students think that they might get embarrassed when did so. This may result to reluctance of raising hands during recitations. On the other hand, low anxiety was found to be felt by the respondents when using mathematics outside of school. Students might think that the mathematics that they are learning, particularly those that have perceived little practical use in the actual world, cannot be applied outside of school. Hence, they worry less in using mathematics in the real world.

Comparison of mathematics anxiety among the groups of the respondents' profile were also performed in this study. This study supports the findings of Zettle and Houghton (1998), Recber (2011), Calvert (1981), Mutodi and Ngirande (2014), Delgado et.al. (2019), and Hembree (1990), as it was revealed that, although there were more female students, they had greater mathematics anxiety than that of male respondents. Moreover, in terms of the other profile of the respondents, such as age, year level, and socio-economic status, it was found that there exists no significant difference in the mathematics anxiety of the respondents when grouped by the said profiles. Thus, year level, age, and socio-economic status have no bearing on the level of anxiety in mathematics that Bachelor of Science in Mathematics students experience.

Recommendations

This study revealed that most of the students of Bachelor of Science in Mathematics had high level of mathematics anxiety. Hence, it is highly recommended to implement interventions, such as teaching pedagogies and practices, that diminish, or better remove, the anxiety feeling of the students. Knowing that the mathematics subjects of their course are difficult, instructors should be creative enough to make every class discussion more appealing and engaging to the students. Also, schools and instructors should determine the reasons why anxiety in mathematics exists within them. With so, the root of anxiety can be easily counteracted. These would greatly benefit the students, especially that they are acquiring degree and mastery in mathematics. Moreover, measures that decreases anxiety in examinations and in recitations are recommended, as it was stressed in the study the high level of anxiety of the students in mathematics tests and answering incorrect answers. During mathematics anxiety nervous feeling and self-doubt, as a result of the anxiety, can negatively impact the test-taking performance of the students. Moreover, in recitations, students worry that they might get embarrassed when answered wrong, which may result to unwillingness to recite ask for questions.

To the future researchers, it is recommended to integrate the dimensions of mathematics anxiety in order to further study the construct. Moreover, it is recommended to determine also the mathematics anxiety of other groups of students, especially those who are not mathematics majors.

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