



Proficiency and attitude of criminology students in Trigonometry in select Philippine higher education institution

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ABSTRACT

The study aimed to determine the relationship between the attitude and level of proficiency in Trigonometry among criminology students in select Higher Education Institution (HEI) in the Philippines. Descriptive-correlational design was used in this study. The modified Sherman-Fennema Attitude Scale was used to determine the attitude of the respondents while mean, t-test and analysis of variance (ANOVA) was used to determine the level of proficiency in Trigonometry. Findings revealed that the level of proficiency of the criminology students when taken as a whole and grouped according to sex and type of school graduated from high school is *High*. Interestingly, when they are grouped according to their achievement status, it shows that respondents who are achievers were *Very High* proficiency, while the average and low achievers is in *High* and *Low* respectively. Moreover, criminology students had a *Moderate* positive attitude towards Trigonometry. Furthermore, there was no significant differences in the level of proficiency in Trigonometry of the criminology students when grouped according to sex and type of school graduated. However, differences were noted when they are grouped according to their status of achievement. Considering their attitudes, no significant differences were also noted when criminology students were grouped according to sex, type of school graduated during high school and status of achievement.

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INTRODUCTION

Mathematics plays a key role in many of today's most secure and financially rewarding careers such as navigators *seaman* and engineers. In most every sector of the economy, a substantial core of mathematics is needed to prepare students both for the work and for the higher education. Understanding mathematics becomes more important because it provides students with basic pre-requisites in other useful areas such as problem-solving.

As mathematics progress, the study of Trigonometry becomes more important. To determine inaccessible distance, such as the distance between the earth and the moon, or of a distance that could not be measured directly, such as the distance across a larger lake in the fields of navigation, surveying, and astronomy, trigonometry can be used. Other application of trigonometry is found in physics, particularly on the projectile motion, where motion of an object through the air that is subject only to the acceleration of gravity. However, the study of mathematics specifically trigonometry poses many problems among educators and students. Result of studies conducted locally and abroad show that students in the elementary, secondary and even in the tertiary obtained a low performance in mathematics. Data from the National Education Testing Center (NETRC, 2000) showed that the National Elementary Achievement Test (NEAT) results of January 2000 were disappointing. Based on the National result, English, Mathematics and Science were among the areas which obtained a lower percentage of performance (Gonzales, 2001). Likewise, data on the National Secondary Achievement Test (NSAT), over the years spanning 1994 to 1999, showed mathematics to be the second most difficult subject to science (Ibe, 2000). This low level of performance was confirmed further in the Third International Mathematics and Science Study (TIMSS) in 1995, where the Philippines ranked second and third from the bottom in science and mathematics respectively, among forty-one (41) countries; more or less the same rank obtained by the country in the TIMMS-Report in 1999. This scenario clearly shows that mathematics in one of the subjects where poor performance is more apparent among others. This contention Triggered educators and curriculum planners to identify factors that influence students' performance. According to Gal and Girsburg as cited by Osonio (2005), in recent years, mathematics educators have focused much of their attention on the cognitive aspects of mathematics teaching both in the elementary and secondary level. While many teachers of mathematics are likely to focus on transmitting knowledge, many students are likely to have trouble in mathematics due to non-cognitive factors such as negative attitudes or beliefs towards mathematics.

In Mathematics classes, teachers perceived that students' attitudes towards the subjects are very important. As observed by mathematics teachers, students' success in mathematics is attributed to how student responded to the subjects. More so, Zeleke (2003) pointed out that student attitudes towards mathematics are important predictors of their academic achievement. Thus, it is in this context that the researcher wanted to study the relationship between the proficiency level and the attitudes of the Criminology students of Northern Negros State College of Science and Technology (NONESCOST) towards Trigonometry.

Objectives

The main purpose of this study was to determine the relationship between the proficiency level and the attitudes of Criminology students of NONESCOST towards Trigonometry. Specifically, this study aimed to answer the following questions:

1. What is the proficiency level of the Criminology students in Trigonometry when taken as a whole and when they are grouped according to:
 - 1.1 Sex
 - 1.2 Type of school graduated from high school
 - 1.3 Status of Achievement
2. Is there a significant difference in the proficiency level of the Criminology students when they are grouped according to?
 - 2.1 Sex

- 2.2 Type of school graduated from high school
- 2.3 Status of achievement
3. What is the attitude of the Criminology students towards Trigonometry when taken as a whole and in terms of:
 - 3.1 Personal confidence about the subject matter
 - 3.2 Usefulness of the subject's content
 - 3.3 Perceived male dominated subject
 - 3.4 Perceptions of Teacher's attitudes
4. What is the attitude of the Criminology students towards Trigonometry when taken as a whole and when they are grouped according to:
 - 4.1 Sex
 - 4.2 Type of school graduated from high school
 - 4.3 Status of Achievement
5. Is there a significant difference on the attitude of the Criminology students towards Trigonometry when they are grouped according to
 - 5.1 Sex
 - 5.2 Type of school graduated from high school
 - 5.3 Status of Achievement
6. Is there a significant relationship between the proficiency level and the attitude of Criminology students towards Trigonometry?

METHODS

Research design

The descriptive-correlational research design employing survey was utilized in this study. The method is deemed appropriate because the study involved descriptive of the attitudes and the proficiency level in Trigonometry of criminology student of Northern Negros State College of Science and Technology (NONESCOST) during the Academic Year 2017-2018.

Respondents

The respondents of the study were the thirty-nine (39) Criminology students of NONESCOST who enrolled Trigonometry subject 2nd Semester, Academic Year 2017-2018. The research has decided to undertake total enumeration since they were only few.

Instrument

The researcher instrument utilized in the study consisted of two parts. Part one of the research instrument determined personal information from the respondents. These include respondents name, gender, type of school graduated during high school and respondents' status of achievement. Part two was the mathematics attitude scale focused on Trigonometry which measures criminology students' attitude towards Trigonometry. To obtain data on the attitudes of criminology students towards Trigonometry, the researcher adopted the Modified Fennema-Sherman Mathematics Attitude Scales, a scale that measures Trigonometry as a male- Dominated subject and a teacher perception scale. Three of this scales consist of twelve items. Six of which measures a positive attitude and six measures a negative attitude. One of the scales include in the measurement has eleven items with six items measuring positive attitudes and five items measuring negative attitudes.

One the hand, data on the proficiency in Trigonometry of the criminology students were obtained from the registrar office of the school. The research instrument used in this investigation is already valid. Since its validity and reliability was established in the study conducted by Osonio (2006). The value established for validity was 4.16

while the obtained reliability coefficient was 0.84. These obtained values therefore indicate that the research instrument used in this study is valid and reliable. The empirical criterion keying was used is scoring the responses to situation in the instrument. This type of scoring “refers to the development of a scoring key in terms of some external criterion. This procedure involves the assignment of scoring weight to each response”. The response of “strongly agree, “agree”, uncertain”, “disagree” and “strongly disagree” to positive items received a value of 5, 4, 3, 2, and 1, respectively. The reverse assigned for the negative items. The reason for reversing and scoring for negative items is to provide a total score test reflection of positiveness towards the objects in questions. The score obtained from the sub-scales such as personal confidence about the subject matter; usefulness of the subject’s content; perceived male dominated subject; and perception of teacher’s attitudes was interpreted according to the scales of the mean and its attitudes was interpreted according to the scales of the mean and its corresponding interpretation as following:

<i>Scale</i>	<i>Description</i>
4.21 – 5.00	Very Positive
3.41 – 4.20	Positive
2.61 – 3.40	Moderately Positive
1.81 – 2.60	Negative

For the proficiency level as revealed by their academic performance in Trigonometry, the following scales on the next page were used.

<i>Scale</i>	<i>Description</i>
1.00 – 1.80	Very High
1.81 – 2.60	High
2.61 – 3.40	Average
3.41 – 4.20	Low
4.21 – 5.00	Very Low

The following scales were used in determining the status of achievement in Trigonometry of the criminology students as revealed by their Grade Point Average (GPA).

<i>Scale</i>	<i>Description</i>
1.00 – 1.67	High Achievers
1.68 – 2.35	Average Achievers
2.36 – 3.00	Low Achievers

Data collection

In the conduct of the study, permission from the College President was asked for the administration of the research instrument to the Criminology students of NONESCOST. The researcher personally administered the Modified Fenema-Sherman Mathematics Attitude Scales to the Criminology students of NONESCOST to ensure appropriate responses from them. After the retrieval of the questionnaires, data obtained by the questionnaire was then tallied, tabulated, analyzed, and interpreted according to the specific problems, and hypotheses set forth in this study. The pertinent data gathered in this study were treated using the statistical data analysis (SDA) package in the following manner:

For Problems 1 and 3 which determined the level of proficiency and the attitudes of Criminology students towards Trigonometry when taken as a whole and when they are grouped as to sex, type of school graduated during high school, and status of achievement, the mean was used. For Problems 2 and 4 which determined significant differences on the level of proficiency and the attitudes in Trigonometry of the criminology students when grouped

according to sex, type of school during high school, t-test for independent means was used. To determine significant differences on the level of proficiency and the attitude in Trigonometry of the criminology students when grouped according to their status of achievement, one-way analysis of variance (ANOVA) was used. To further test the differences between two groups being compared after the ANOVA test, a posteriori t-test was used. For the decision to reject or not reject the null hypothesis in this study, a 0.05 level of significance was used. For Problem 5 which determined the significance of the relationship between the attitude and the proficiency in Trigonometry of the criminology students, Pearson Product moment of Correlation and the formula developed by Ferguson (1992) was used. The decision to accept or reject the null hypothesis was based from the 0.05 level of significance.

Range of Coefficient (+ or -)	Verbal Description
Less than 0.20	Slight Negligible Correlation
0.21 – 0.40	Low Correlation
0.41 – 0.70	Moderate Correlation
0.71 – 0.90	High Correlation
0.91 – 1.00	Very High Correlation

RESULTS AND DISCUSSION

Table 1. Profile of the respondents

Classification	Frequency	Percentage
Sex		
Male	31	79
Female	8	21
Total	39	100
Type of School Attended During High School		
Public	36	92
Private	3	8
Total	39	100
Status of achievement		
High Achiever	18	46
Average Achiever	18	46
Low Achiever	3	8
Total	39	100

The data in this table shows that criminology course of NONESCOST was dominated by male students, 31 or 79% and likewise most of them have graduated from public high school, 36 or 92%. When they are grouped according to their status of achievement, criminology students were dominated by high achievers and average achiever.

Table 2. Level of proficiency in trigonometry of the criminology students by sex, type of school graduated from high school, and status of achievement

Categorical Variables	Mean	Interpretation	t-ratio	p-value
Sex				
Male	2.42	High	1.28	0.21, Ns
Female	2.13	High		

Type of School				
Graduated from High School				
Public	2.36	High	0.08	0.94, Ns
Private	2.33	High		
Status of Achievement				
High Achievers		Very High High High	4.66	0.02, Ns
Average Achievers	1.63			
Low Achievers	2.24 2.42			

The data revealed that the level of proficiency in Trigonometry of male and female Criminology students was high with the obtained mean scores of 2.42 and 2.13, respectively. This means that when grouped according to sex, male and female criminology students have mastered the different topics discussed by their mathematics instructor. Further analysis of the data revealed that in terms of their obtained means, male criminology students perform better than their female counterpart. A study on the proficiency however, supported this finding when the result revealed that African women are mathematically and scientifically the least proficient (Mallam, 2001; Christie, 2002). The African results illustrate a further problem since the number of girls discarding the subjects remains substantially higher than the number of boys.

When grouped according to the type of school graduated during high school, both students from the public and private schools have almost the same level of proficiency in Trigonometry, high with the obtained mean scores of 2.36 and 2.33, respectively. This means that the type of school students graduated from does not influence criminology students' proficiency level in Trigonometry. Considering their status of achievement, average achievers and low achievers criminology students have almost the same level of proficiency in Trigonometry as indicated by their obtained mean scores of 2.24 and 2.42 respectively. However, a very high level of proficiency was obtained by criminology students classified as high achievers. This is supported by their obtained mean scores of 1.63.

The data obtained from the GPA of the Criminology students revealed that the level of their proficiency was high. This finding indicated that Criminology students have mastery of the subject. This further means that they did not experience difficulties on the topics discussed in Trigonometry. This finding however, was negated by the findings of the study conducted by Llano (2006) which revealed that the level of performance of third year high school students in geometry was average. The difference between Llano's study and of the present study may be due to the fact that their respondents were different; the present study utilized college students while Llano's study utilized third year high school students. Furthermore, the differences can also be attributed to the subject itself, although there are similarities between Geometry and Trigonometry but differences are more than their similarities. Furthermore, the data also indicated that there is no significant difference on the level of proficiency of criminology students when they are grouped according to sex and type of school graduated from high school as shown by the t-ratio of 1.28 and 0.08 at p-value of 0.21 and 0.94, respectively. This shows that male and female do not differ significantly in the level of their proficiency in Trigonometry. However, significant differences were noted on the level of proficiency in Trigonometry of the Criminology students when they are grouped according to their status of achievement. Sheffe Test as Pair wise comparison revealed that significant differences were observed between high achievers and average achievers and likewise with high achievers and low achievers. However, no significant differences were noted between average achievers and low achievers.

Table 3. Attitude of criminology students towards trigonometry in the four identified components

Identified Components	Mean	Interpretation
Personal confidence about subject matter	3.22	Moderately Positive

Usefulness of the subject's content	3.28	Positive
Perceived male dominated subject	2.97	Moderately Positive
Perceptions of Teacher's attitude	3.58	Positive
Overall Mean	3.40	Moderately Positive

The attitude of Criminology students towards Trigonometry when taken as a whole was moderately positive with the obtained mean score of 3.40. This result can be interpreted to mean that criminology students like the subject but not as what are expected of them. This may be due to the fact that the trigonometry is not their major subjects and what they like most are their major subjects such as criminal laws and the others. This implies that motivation among students should be strengthen so that students will put more attention on the subject. On the other hand, when each of identified components were considered, criminology students were positive towards the usefulness of the subject's content and perception of teacher's attitude with the obtained mean scores of 3.28 and 3.58 respectively. This finding can be taken to mean that they believe in the usefulness of the subjects as well as on the attitude exhibited by their instructors towards them. However, in terms of personal confidence of the subject matter and mathematics as perceived as male-dominated subject, criminology students' attitude was moderately positive as shown by the obtained mean scores of 3.22 and 2.97 respectively. This means that they are not quite sure of the claim that Trigonometry is a male-dominated subject. This result implies that the students have experienced difficulties in some of the topics included in the subject. Furthermore, the finding also implies that female also excel in mathematics in contrary to the claimed that numerical facilities are better performed by males. In fact several studies shows that the female performed better than male and this was already explained that female were more diligent than the male students because males have many activities outside of the school.

Table 4. Attitude of criminology students towards trigonometry in the four identified components by sex

Identified Components	Sex	Mean	Interpretation	t-ratio	p-value
1. Personal confidence about the subject matter	Male	3.23	Moderately Positive	0.59	0.56, Ns
	Female	3.17	Moderately Positive		
2. Usefulness of the subject's content	Male	3.77	Positive	-1.17	0.25, Ns
	Female	3.99	Positive		
3. Perceived male dominated subject	Male	2.92	Moderately Positive	-1.88	0.05, S
	Female	3.15	Moderately Positive		
4. Perceptions of Teacher's attitudes	Male	3.52	Positive	-1.79	0.08, Ns
	Female	2.81	Positive		

The attitude of male criminology students towards Trigonometry in terms of personal confidence of the subject matter and mathematics as perceived as male-dominated subject was moderately positive with the obtained mean scores which range from 2.92 and 3.23. This finding however, supports the finding in the study conducted by Osonio (2006) which revealed that the attitude of male and female high school students of the School of the Future of Sagay National High School towards geometry in terms of personal confidence of the subject matter and their perception of mathematics as a male-dominated subject was moderately positive. However, in terms of the usefulness of the subject's content and perception of the teacher's attitude, male and female criminology students' attitude towards Trigonometry was positive with the obtained mean scores which range from 3.52 to 3.99. This means that criminology students believed in the usefulness of Trigonometry in any discipline as well as its application to real life situation. A study conducted by Nardo (2007) on the relationship between the attitudes of the third year high school students of Sagay National High School confirms the present findings. Nardo's study revealed that third year high school students agree on the usefulness of the subject content and they believe that

teachers attitudes in the classroom is an important factor which influences students response and interest towards the subject.

Further analysis of the data revealed that, there is no significant difference on the attitude of criminology students in terms of personal confidence about the subject matter; usefulness of the subject’s content; and perception of teacher’s attitudes as indicated by the t-ratio of 0.59, -1.17, and -1.79 at p-value of 0.56, 0.25, and 0.08, respectively. The finding indicates that male and female do not differ significantly in terms personal confidence about the subject matter; usefulness of the subject’s content; and perception of teacher’s attitudes. However, significant differences were noted in terms of their perception of mathematics as a male-dominated subject as supported by the t-ratio of -1.88 at p-value of 0.05. The difference in their perception may be due to the fact that courses which require mathematical ability are entered by most of the male. Engineering courses for instance are dominated by male students. This finding however, was supported in the study conducted by Osonio (2006) and Alquisalas (2007) which revealed almost the same finding. Their studies revealed that there is significant difference on the perception of high school students towards mathematics as a male-dominated subject.

Table 5. Attitude of criminology students towards trigonometry in the four identified components by type of school graduated from high school

Identified Components	Type of School	Mean	Interpretation	t-ratio	p-value
1. Personal confidence about the subject matter	Public	3.21	Moderately Positive	-0.38	0.71, Ns
	Private	3.31	Moderately Positive		
2. Usefulness of the subject	Public	3.83	Positive	0.67	0.51, Ns
	Private	3.64	Positive		
3. Perceived male dominated subject	Public	2.94	Moderately Positive	-1.63	0.11, Ns
	Private	3.24	Moderately Positive		
4. Perception of teacher’s attitude	Private	3.60	Positive	0.85	0.40, Ns
	Public	3.39	Moderately Positive		

On the other hand, Criminology students who were graduates of public and private high schools were positively towards Trigonometry in terms of usefulness of the subject’s content with obtained mean scores of 3.83 and 3.64 respectively. The attitude of criminology students towards trigonometry in terms of personal confidence of the subject matter and mathematics as perceived as male-dominated subject who were graduates of public and private high schools was moderately positive with the obtained mean scores which range from 2.94 to 3.24.

However, in terms of their perception of teacher’s attitude, criminology students who were graduates of public high schools were positive towards Trigonometry as shown as by the obtained mean scores of 3.60, while those graduated from the private high schools were moderately positive towards Trigonometry as revealed by the obtained mean scores of 3.39. The differences in the responses of the students may be due to the fact that because of their status in life students from the public schools were challenged to excel and pay more attention towards their education. There was no significant difference in the attitude of Criminology students towards Trigonometry in terms of personal confidence about the subject matter; usefulness of the object’s content; perception of mathematics as a male-dominated subject; and perception of teacher’s attitudes are revealed by the t-ratio of -0.38, 0.67, -1.63, and 0.85 at p-value of 0.71, 0.51, 0.11 and 0.40, respectively. This result that criminology students who graduated from public and private schools do not differ significantly in their attitude towards trigonometry.

Table 6. Attitude of criminology students towards trigonometry in the four identified components by achievement status

Identified Components	Status of Achievements	Mean	Interpretation	t-ratio	p-value
1. Personal confidence about the subject matter	High Achiever	3.53	Positive	2.67	0.08
	Average Achiever	3.31	Moderately Positive		
	Low Achiever	3.07	Positive		
2. Usefulness of the subject's content	High Achiever	4.11	Positive	1.29	0.29
	Average Achiever	3.88	Positive		
	Low Achiever	3.70	Positive		
3. Perceived male dominated subject	High Achiever	2.88	Moderately Positive	1.20	0.31
	Average Achiever	2.90	Moderately Positive		
	Low Achiever	3.05	Moderately Positive		
4. Perceptions of Teacher's Attitude	High Achiever	4.03	Positive	1.99	0.15
	Average Achiever	3.56	Positive		
	Low Achiever	3.53	Positive		

The attitude of criminology students towards Trigonometry in terms of personal confidence of the subject matter, low achievers and high achievers was positive with the obtained mean scores of 3.53 and 3.07 respectively while the average achiever was moderately positive. In terms of usefulness of the subject's content, low achievers, average achievers and high achievers was positive with the obtained mean scores which range from 3.70 to 4.11. However, in terms of perceived as male dominated subject low achievers, average achievers and high achievers was moderately positive with the obtained mean scores which range from 2.88 to 3.05. In terms of perception of teacher's attitude was positive with the obtained mean scores which range from 3.53 to 4.03. Further analysis of the data revealed that, there is no significant difference on the attitude of criminology students in terms of personal confidence about the subject matter; usefulness of the subject's content; and perception of teacher's attitudes as indicated by the t-ratio of 2.67, 1.29, 1.20 and 1.99 at p-value of 0.08, 0.29, 0.31 and 0.15 respectively. This result disclosed that high achievers, average achievers and low achievers do not differ significantly in their attitude towards trigonometry.

Table 7. Relationship between attitude and proficiency level in Trigonometry of criminology students

Variables Correlated	N	Pearson's	P-value	Interpretation
Personal confidence about the subject matter and proficiency level in Trigonometry	39	-2.40	0.02	Significant
Usefulness of the subject's content and proficiency level Trigonometry	39	0.77	0.45	Not Significant

Perception of Mathematics as a male-dominated subject and proficiency level in Trigonometry	39	0.36	0.72	Not Significant
Perception of teacher's attitudes and proficiency level in Trigonometry	39	-0.69	0.49	Not Significant
Attitude and proficiency level in Trigonometry as a whole	39	-1.52	0.14	Not Significant

The data revealed that no significant relationship were noted between Criminology students level of proficiency and attitude towards Trigonometry in terms of the usefulness of the subject's content, mathematics as perceived as a male -dominated subject, and the perception of teacher's attitude as indicated by the Pearson's of 0.77, 0.36, and -0.69, respectively. This means that these identified components are not related to the level of proficiency in Trigonometry of the criminology students. However, significant relationship was noted between criminology students' level of proficiency and attitude in terms of personal confidence about the subject matter as revealed by the Pearson's t of -2.40 at a probability value equals 0.02. This finding can be interpreted to mean that criminology students' confidence in the subject is related to their level of proficiency. It also shows that when Pearson's t was used to determine significant relationship on the level of proficiency and attitude towards Trigonometry of criminology students when taken as a whole, the Pearson's t yielded -1.52 at probability equals 0.14. The result indicated that there is no significant relationship between the level of proficiency and criminology students' attitude towards Trigonometry.

CONCLUSION AND RECOMMENDATION

The level of proficiency in the Trigonometry of the criminology students of NONESCOST was high. The level of proficiency in the Trigonometry of the criminology students of NONESOST when grouped according to sex and type of school graduated from high school was high. However, when grouped according to their status of achievement, high achievers criminology students have a very high level proficiency while average and low achievers students have high proficiency level.

The attitude of criminology student towards Trigonometry when taken as a whole was moderately positive. In terms of personal confidence of the subject matter and mathematics as perceived male-dominated respondents was moderately positive while in the usefulness of the subject's content and perception of the teacher's attitude was positive. When grouped according to the type of school graduated during high school, criminology students graduated from public high school was positive while those criminology students from private high school was moderately positive. According to the respondents status of achievement, high achievers criminology students was positive and low and average achievers was moderately positive.

Moreover, there is no significant difference in the level of proficiency in Trigonometry of criminology students when grouped according sex and type of school graduated during their high school, and status of achievement. However, significant differences were noted when criminology students were grouped according to their status of achievements. In addition, it was found out that there is no significant relationship between the attitude and the level of proficiency in Trigonometry when taken as a whole in terms of the usefulness of the subject's content, perception in mathematics as male-dominated subject and perception of teacher's attitude. However, significant relationship was noted between personal confidence of the subject matter and the level of proficiency in Trigonometry.

A high level of proficiency in Trigonometry of the criminology students indicates that they have gained mastery of the subject. In the same manner, male and female and those who graduated from public and private high schools have almost the same mastery of the subject. This means that they do not differ significantly in their achievement in Trigonometry. However, they differ significantly on their achievement status. Considering their attitude towards the subject, the respondents has moderate positive attitude which was disclosed that they like the subject; perhaps they like most their major subjects. On the other hand, male and female has moderate positive attitude towards Trigonometry in terms of personal confidence about the subject matter and perceptions of mathematics which further concludes that even though they have mastered the subject, yet they are not sure whether or not they have confidence. Likewise, they are in doubt whether or not Trigonometry is male-dominated subject. It was inferred that they differ significantly in their attitude towards Trigonometry in terms of their perception of mathematics. Concerning the relationship between attitude and level of proficiency in Trigonometry, no significant relationship were noted which means it was not influence by their beliefs on the usefulness of the subject's content, perception of mathematics as male-dominated subject, and their perception of teacher's attitude. However, level of proficiency in Trigonometry were influenced by the attitude of criminology students in terms of their personal confidence of the subject matter.

In view of the findings and conclusions of the study, the researcher advances following recommendations:

1. The findings of study will be shared to the vice president for academics for discussions and planning on how to improve students' proficiency levels and attitudes.
2. School administrators should openly support, accept, give importance and value mathematics instructors' effort to improve the teaching of mathematics.
3. Mathematics instructors should be sensitive to gender equity in mathematics class so that the notion that mathematics is a male dominated subject will gradually be diminished.
4. Follow-up study should be made to determine the factors that affect college students' attitudes so that tertiary mathematics instructors would have the idea on how to motivate and encourage students' gain interest in Trigonometry.
5. Similar studies should be conducted in other courses or to other Higher Education Institutions (HEIs) perhaps in private school to have a more comprehensive picture of college students' attitudes towards mathematics.

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