

Students' Perceptions and Attitude towards Mathematics Learning

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ABSTRACT

Teaching and learning Mathematics involves the creation of opportunity for individual, this includes providing a supportive learning environment that offered mathematical challenge and norming processes and strategies which foster learning that also makes our lives orderly and prevent chaos. The study was undertaken in response to the problems of students' perceptions and attitude towards mathematical learning. These issues are related to classroom management and mathematical contents and pedagogy. The study employed the descriptive-correlational method of research. Questionnaire contained of three parts is the primary tool used in the study, the respondents were one hundred fifty (150) Grade 9 and 10 students from Mindanao State University – Saguiaran Community High School. Researchers used random sampling to get 75 % from the total population as respondents. The data gathered were interpreted and analyzed using three (3) statistical tools such: Frequency and Percentage, Mean, and Pearson's r . The result revealed that majority of the respondents were female and age ranged from 13 to 19 both grades 9 and 10. Moreover, the relationship between the respondents' perceptions about the nature of Mathematics and attitudes towards Mathematics as evidenced by the computed statistics $r = -0.014$ with corresponding significance value of 0.866 which is greater than 0.05 level of significance, it implied that the respondents' perceptions about the nature of Mathematics do not necessarily affect their attitudes towards Mathematics.

KEYWORDS: discipline; mathematics teachers; perceptions on the nature of Mathematics; attitudes towards Mathematics; students

INTRODUCTION

Many students have trouble with mathematics subjects, but some find it difficult than others, these maybe otherwise faster learners who have keen sense of logic and reasoning but still perform poorly on homework, tests, and quizzes. Over time, repeated underperformance in mathematics can cause a student to become demotivated and believed him or her not well at the subject. It is believed that Mathematics is one of the most important disciplines in the field of Academics and in everyday practicality of life. However, for most people, Mathematics is deemed to be boring, most difficult subject and generally have a negative perception toward the subject. Hence, there is a need to further study students' perceptions and attitudes towards Mathematics to give insights as to where these negative conceptions are coming from. According to Amirali (2010) ^[1] Mathematics is at the sympathy of many successful careers and successful lives for the development of society, particularly with the dynamic change circumstances.

Consequently, the researchers conducted the study to identify issues early on given the right combination of classroom accommodations and learning strategies especially the perceptions and attitudes towards Mathematics by the Grade 9 and Grade 10 students of Mindanao State University - Saguiaran Community High School. The results may be a great assistance for the school as a whole in employing pedagogical approaches in whatever the outcomes will be.

To be able to help the learners cope with the difficulty of the Mathematics subjects, the teachers need to communicate with them effectively. They need to understand their conceptions and attitudes towards mathematics, and they need to know how students view Mathematics. Thus, the study mainly examined the conceptions and attitudes of the grade 9 and 10 students of MSU-SCH towards Mathematics as shown in the Figure 1.

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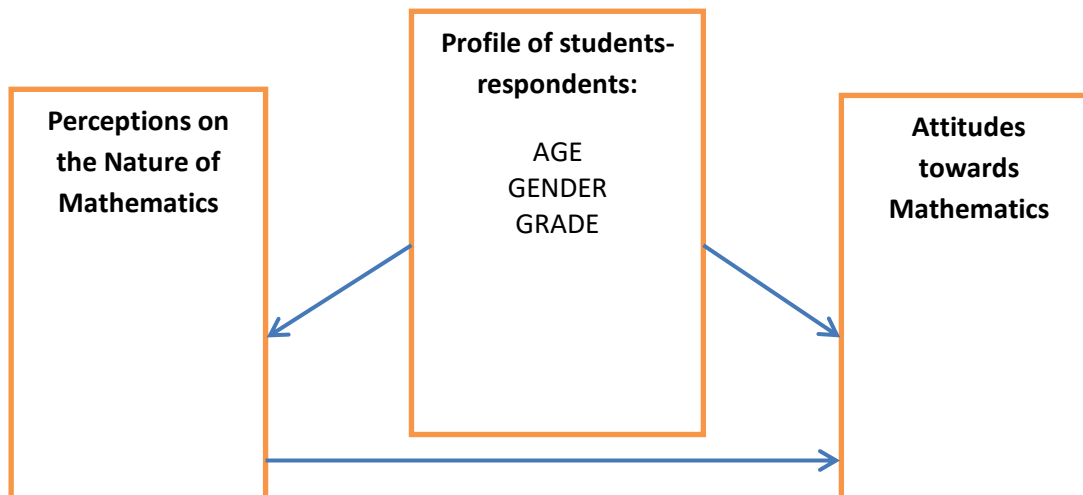


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Figure 1: The Schematic Diagram of the study



Materials and Methods

The study employed the descriptive-correlational method of research. The descriptive method is considered as the most appropriate method for this study to describe the profile of the respondents' background in terms of age and gender. Moreover, the correlation part was performed by correlating the respondents' profile to their conceptions and attitudes towards Mathematics.

The respondents were the one hundred fifty (150) Grade 9 and Grade 10 of Mindanao State University – Saguiaran Community High School and used random sampling procedure to get 75 % from the entire population. Self-made questionnaires were used as instruments, these contained of three parts such: *part one*, Modified Fennema Sherman Attitude Scales (MFSAS) and Conceptions of the nature of Mathematics. MFSAS, taken from the study of Amirali (2010) [1], which seeks for the profile of the respondents to determine their attitude in Mathematics. The reliability of this questionnaire, was tested by the researchers. Its reliability is done with a Chronbach's alpha of 0.80, *part two* is a 5-point Likert-Scale having 25 items in all and *part three* is the perceptions of the nature of Mathematics taken from the study of Atallah, et.al. (2010) [3] which is composed of 20 items. The researchers tested its reliability and came up with a Chronbach's alpha of 0.789. Each statement is ranked 5-1 on a Likert scale with the following options and its equivalent: *strongly agree* (4.21-5.00), *agree* (3.41-4.20), *undecided* (2.61-3.40, *strongly disagree* (1.81-2.60) and *disagree* (1.00-1.80).

The data gathered were interpreted and analyzed using the three (3) statistical tools such: *first*, Frequency and Percentage Distribution to determined the percentage of a given response being asked according to their personal profile and other information. *Second*, Mean to summing up the values and dividing the sum by the number of values, and *third*, Pearson's *r* to establish relationship between personal profile and the level of attitudes towards Mathematics and perceptions about the nature of Mathematics.

Results and Discussion

These present the tabulated and analyzed data of the study. Interpretations and discussions are also given to exemplify the meanings of the data and for further understanding. The information was interpreted for the purpose of answering the questions in the statement the problem.

I. Respondents' Profile

The results revealed that majority of the respondents age ranged from 15 to 16 both grades 9 and 10, it is further implied that Grade 9 and 10 students are in the stage of young hood. This support with the computations age 16 got the highest frequency of 64 with 41.333% and second age 15 with frequency of 51 at 34% and lowest is age 19 with a frequency of 1 at 0.6667%. As seen from Table 1, this is expected since the respondents were high school students. Their minds are not yet fully set, possibility of changeable decision always happened. Maybe in the future, their conceptions about the nature of Mathematics will change or remain and their attitudes towards Mathematics would be positive or negative or vice versa. It is both Grades 9 and 10 students were their state of thinking and decision is not concise compare to adults. Therefore, their interest in Mathematics may vary.

Table 1: Age of Respondents

Age Group	Frequency	Percentage
14	13	8.667%
15	51	34.000%
16	62	41.333%
17	20	13.333%
18	3	2.000%
19	1	0.667%
TOTAL	150	100%

Nowadays, it is believed that women became the majority in all places all over the world if not all. For years, women's progress has been cast as a struggle for equality but unprecedentedly, role reversal now happened. It can be asserted also as shown from table 2 how females dominantly over males.

Table 2: Gender of Respondents

Gender	Frequency	Percentage
Female	93	62.00%
Male	57	38.00%
TOTAL	150	100.0%

The results also revealed that majority of the respondents are female. This is not surprising since our society is dominated by the female population and most agencies in the society were therefore dominated by women particularly

in educational institutions, according to Balindong and H.Usman (2014)^[5]. This confirmed on the study of Daluz (2009)^[7] that the current trend is that females constitute the bigger portion of the society nowadays. This implied that the population of the MSU-Saguiaran Community High School (MSU-SCH) is dominated by females. Thus, for the gender differences, there are also differences in their perceptions of the nature of Mathematics and their attitudes towards Mathematics, even in the students that are in the same age have their differences.

II. Perceptions of the Respondents on the Nature of Mathematics

On the perceptions of the nature of Mathematics of students, the overall results revealed that students *agreed* that the perceptions of students affected on their view in the Nature of mathematics. The statement "*Mathematics is a group of numbers and rules for doing calculations*" ranked onewith the Mean 4.293 descriptively defined as *strongly agreed*. Katz (2009)^[8] and Kuster (2015)^[9], cited in noted that students often believe that Mathematics is simply about computation or numbers. This perception also corresponds with findings in the study of Young-Love ridge, et al., (2005)^[10] in which learners offered ideas about the nature of Mathematics referring to aspects of the number domain. One group of students referred to particular aspects of mathematical context in their explanations as what they have understood. The students agreed that math is a useful subject that will always be used in daily life. They agreed that mathematics is one way or another of finding solutions in a problem. It comprises seventy percent of the result. Respondents strongly agreed that math is used for mental ability and to develop it, and develop solving problems. The statement "*Mathematics is a cold subject with no place for emotions.*" got lowest ranked twenty respectively with Mean 2.813, descriptively define as *undecided*. It is implied that mathematics is not that hard subject. If only teachers will discuss will or at least understand their students where they lacked then, mathematics can be also enjoyable subject because on the statement "*Mathematics is a tool for developing our ability to think*" ranked two with Mean 4.293 meaning the students *strongly agreed* that mathematics helped in developing their critical skills and decisions.

III. Attitudes of the Respondents towards Mathematics

The results revealed that students' responded was almost all unsure. However, the statement "*I'll need mathematics for my future work*" ranked one; this seemed that mathematics is part of their living which is opposite to the statement "*Mathematics will not be important to me in my life's work.*" ranked twenty five, descriptively defined as *strongly disagree*. Mathematics is part of living but it does not mean very important in life's work but it is a lack of confidence in handling mathematics. The results implied that students are not taking for granted the mathematics subject but rather they find it difficult especially when they do not understand the teachers' discussion, this supported by Belbase (2013)^[4] that mathematics in school has unintended outcomes, it serves training that shapes thinking that need to attend more closely.

Table 1: Relationship Between the Respondents' Perceptions About the Nature of Mathematics and Attitudes Towards Mathematics

Relationship Profile		Test Statistic	p-value	Remarks
Attitudes towards Mathematics	Perceptions on the Nature of Mathematics	$r = -0.014$	0.866	Not Significant

Table 1 displayed the relationship between the conceptions about the nature of Mathematics and attitudes towards Mathematics among the respondents. As shown, there is no significant relationship between the students' conceptions about the nature of Mathematics and their attitudes towards Mathematics as evidenced by the computed statistics $r = -0.014$ with corresponding significance value of 0.866 which is greater than 0.05 level of significance. This means that the respondents' conceptions about the nature of Mathematics do not necessarily affect their attitudes towards Mathematics.

Conclusion

The study examined the perceptions of Grade 9 and Grade 10 students about the nature of Mathematics and their attitude towards Mathematics. Data revealed that students conceived Mathematics as a group of numbers and rules for doing calculations. This view may be related to the response from the open-ended question as Mathematics being difficult and complicated subject because they perceived it as about numbers and calculations. On the other hand, the students consider Mathematics as a mental exercise that helps develop intellectual abilities. It can be said that students have different perceptions on the nature of Mathematics and also their attitude towards it. Hence, it can be concluded that students may not yet fully decided about the nature of Mathematics may be because they are not sure of their confidence in doing Mathematics works and some still view it as hard and complicated subject as the study revealed. Although the students perceived the statements as undecided, they show a positive response and still view Mathematics as an important tool for their future and for their daily routines. The Students cannot resist mathematics because it has an important rule to everyone's living.

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