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Difficulties Encountered by the Students in Learning Mathematics

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ABSTRACT

The study looked into the difficulties encountered by the students in the learning of Mathematics among freshmen of Adiong Memorial Polytechnic State College-Laboratory High School in Ditsa-an Ramin, Lanao del Sur. This study prepared the questionnaire for first-year high school students. The data gathered were tabulated, analyzed, and interpreted using the frequency and percentage distribution and the weighted mean. It was found that the instruction and teacher/teaching methodologies ranked as the main cause of the difficulties encountered by the students in learning Mathematics. In the light of the findings, conclusion, and implications of the study the following recommendations are given: (a) teachers in Mathematics must be able to check the kind of instruction and methodologies they were applying to their students; (b) parents should give their full support to their children. This can be done by coordinating and cooperating with the school where their children are studying; (c) school administrators must observe the teacher at least every grading so that they know their standing in terms of teaching; and (d) future researchers should conduct on the same study but of different coverage and different subject.

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1. INTRODUCTION

People said that mathematics subject is one of the most difficult subjects (Langoban & Langoban, 2020; Acharya, 2017; Baki & Guveli, 2008). That is why people found it difficult to learn the subject especially since it often deals with problem - solving , fundamental operations, and mathematical concepts are always encountered. Mathematics is one of the most useful and fascinating divisions of human knowledge. It includes many topics of study. For this reason, the term mathematics is difficult to define. It comes from the Greek word meaning "incline to learn". The world of mathematics is in a way like the physical universe that surrounds us (Tegmark, 2008). We can admire its greatness, contemplate its vastness, solve some of its mysteries , and even appreciate some of its gems without a formal or extensive study of all its many facets (Tegmark, 2008). Depending on the knowledge of the beholder, the world of mathematics may appear to be a variety of things, it may appear to be a tool created by man to assist him in solving many of the complex problems that comfort him in a society or it may be world shrouded in mystery because the opportunity to survey its vastness and search out its measure has, either by necessity or design , been ignored (Ayalon & Even, 2008). Mathematics is the study of quantities and relations through the use of numbers and symbols (Kemeny, 1959; Ernest, 2006). It is one of the most useful and fascinating divisions of human knowledge. It helps us in many important areas of study and has the power to solve some of the deepest puzzles man must face. Therefore, learning mathematics is important, useful, and enjoyable.

However, in learning mathematics, students frequently encounter mathematics problems involving calculation, understanding of concepts, principles, and mathematical relationships with other subjects. Mathematics as a subject is one of the interesting and important subjects to learn but because some concepts and ideas behind the subject are abstract and difficult to understand, it makes the subject difficult to learn (Murtonen & Lehtinen, 2003). In addition, according to Boero and Szendrei (1998), mathematics is a subject of some contradictions. It is commonly perceived as being impersonal, rational, fixed, and rule-bound. But according to McLeod (1992), it is associated with strong, typically negative emotional reactions, perhaps more so than any other subject area. In line with this, it is the purpose of this study to explore the difficulties encountered by the students in the learning of mathematics among freshmen of Adiong Memorial Polytechnic State College-Laboratory High School now known as Adiong Memorial State College.

2. METHOD

The research design used in this study is a descriptive type of the research. Descriptive research is concerned with conditions or relationship that exists, practices that prevail, point of view or attitude that are held, process that are going on effects that are being felt, and trends that are developing.

For a systematic gathering of data, this study seeks firstly permission form. And, upon the approval of the request, this study distributed the questionnaire to the respondents and retrieved it right after the session. Then, the data was tabulated and subjected to statistical treatment.

3. RESULTS AND DISCUSSION

Table 1 shows the demographic profile of the respondents in terms of gender, parents' educational attainment, parents' occupation, and parents' monthly income. In regards to gender, the males have a frequency of 12 and a total percentage of 24; the females have a

frequency of 38 and a percentage of 76. It shows that the majority of the respondents were females with a frequency of 38 and a total percentage of 76. More girls come to school and study compared to boys. Secondly, the demographic profile of the respondents in terms of parents' educational attainment, the first part is for the fathers' educational attainment and the second part is for the mother's educational attainment. In terms of father, none has a frequency of 4 and has a total percentage of 8; elementary level has a frequency of 8 and has a total percentage of 16; secondary level has a frequency of 12 and has a total frequency of 24; college level has a frequency of 26 and has a total percentage of 52. On the other hand, the educational attainment was as follows; none has a frequency of 2 and has a total percentage of 4; elementary has a frequency of 14 and has a total percentage of 28; secondary level has a frequency of 14 and has a total percentage of 28; college level has a frequency of 20 and has a total frequency of 40. The majority of the respondents were college graduates with a frequency of 26 and a total percentage of 52 for the father and a frequency of 20 and a total percentage of 40 for the mother. This implied that their parents were in the right position to help their children with whatever problem they encountered regarding academic matters Thirdly is the demographic profile of the respondents according to parents' occupation, the first part is for fathers' occupation and the second part is for mothers' occupation. In terms of fathers' occupation, self-employed has a frequency of 42 and a total percentage of 84; wage earners have a frequency of 8 and a total percentage of 16. In terms of mothers' occupation, self-employed has a frequency of 42 and a total percentage of 84; wage earners have a frequency of 8 and a total frequency of 16. The majority of respondent's fathers and mothers were both self-employed with a both frequency of 42 and a total percentage of 84. This signifies that these parents were capable of sending their children to school. However, it does not necessarily mean that they could support all the financial necessities of their children at school, thus they were sent to a government-owned school. Fourthly is the demographic profile of the respondents in terms of parents' monthly income, it shows that students-respondents are classified into five categories depending on the income of their parents, below P5,000 has a frequency of 9 and has a total percentage of 18; P5,000-P9,999 has a frequency of 25 and has a total frequency of 50; P10,000-P15,000 has a frequency of 8 and has a total percentage of 16; P15,001-P19,999 has a frequency of 4 and has a total percentage of 8; P20,000 and above has a frequency of 4 and has a total percentage of 8. The majority of the monthly income of the respondents was P5,000-P9,999 with a frequency of 25 and a total percentage of 50. This indicated that their monthly income barely can sustain the basic needs of a large family.

Table 2 shows the level of the respondents' difficulties in instruction, the teacher does not encourages the students to solve has a weighted mean of 2.23 which is in line with the seldom encountered; teacher does not know how to catch the attention of the students has a weighted mean of 2.56 which is in line with the always encountered; the teacher continues the discussion while some students are not listening has a weighted mean of 2.54 which is in line with the always encountered; teacher does not give clear instruction has a weighted mean of 2.45 which is in line with the always encountered; teacher does not give full instruction during class activities has a weighted mean of 2.48 which is in line with the always encountered; teacher gives the students' assignment has a weighted mean of 2.08 which is in line with the seldom encountered; teacher requires the students to make project has a weighted mean of 2.30 which is in line with the seldom encountered; teacher gives quizzes has a weighted mean of 2.24 which is in line with the seldom encountered; there is an interaction between the teacher and the students has a weighted mean of 2.27 which is in line with the seldom encountered; teacher does not teach mathematical rules has a weighted

mean of 2.23 which is in line with the seldom encountered which is based on the interpretation of data; and lastly the level of respondents' difficulties in instruction has an average weighted mean of 23. 58 which is in line with the always encountered based on the in perpetration of data. This implied that the respondents have difficulty in learning mathematics in instruction. Moreover, this implied also that their teacher in Mathematics lacks the qualities of an effective and efficient teacher.

Table 1. Demographic profile of the respondents.

	Frequency	Percentage
Gender		
Male	12	24.00%
Female	38	76.00 %
Parents' Educational Attainment		
Father		
None	4	8.00%
Elementary	8	16.00%
Secondary Level	12	24.00%
College Level	26	52.00%
Mother		
None	2	4.00%
Elementary	14	28.00%
Secondary Level	14	28.00%
College Level	20	40.00%
Parents' Occupation		
Father		
Self-employed	42	84.00%
Wage earners	8	16.00%
Mother		
Self-employed	42	84.00%
Wage earners	8	16.00%

Table 2. Level of the respondents' difficulties in instruction.

Statements	Weighted Mean	Remarks
The teacher does not encourage the students to solve	2.32	Seldom Encountered
The teacher does not know how to catch the attention of the students.	2.56	Always Encountered
The teacher continues the discussion while some students are not listening.	2.54	Always Encountered
The teacher does not give clear instruction	2.45	Always Encountered
The teacher does not give full instruction during class activities	2.48	Always Encountered
The teacher gives the students assignment	2.08	Seldom Encountered
The teacher requires the students to make the project	2.30	Seldom Encountered
The teacher gives quizzes	2.24	Seldom Encountered
There is an interaction between the teacher and the students	2.27	Seldom Encountered
The teacher does not teach Mathematical rules	2.23	Seldom Encountered
Average Weighted Mean	23.58	Always Encountered

Table 3 shows the level of the respondents' difficulties in teacher/teaching methodologies, teacher always come late to class has a weighted mean of 2.33 which is in line with the seldom

encountered; teacher well-prepared when entering the class which has a weighted mean of 1.93 which is in line with the seldom encountered; teacher always in bad mood which has a weighted mean of 2.29 which is in line with the seldom encountered; teacher discussions are not satisfied you which has a weighted mean of 1.92 which is in line with the seldom encountered; teacher does not use problem solving activities which has a weighted mean of 2.57 which is in line with the always encountered; teacher reviews the past lessons by giving question and encourages students to answer so that participation will be fully maximized has a weighted mean of 2.55 which is in line with the always encountered; teacher combines two subjects in curriculum, the Mathematics and character education has a weighted mean of 2.55 which is in line with the always encountered; teacher has sense of humor has a weighted mean of 2.29 which is in line with the seldom encountered; method/techniques used by your teacher effective has a weighted mean of 2.57 which is in line with the always encountered; teacher discusses the lesson from simple to difficult has a weighted mean of 2.33 which is in line with the seldom encountered; and this is implied that the respondents have always encountered difficulties in teach/teaching methodologies which has an average weighted mean of 23.43 which is in line with the always encountered based on the interpretation of data. This further implied that the methodologies used by the teachers of the said school were not suited for the subject and could not easily be understood by the students. As the data showed, always encountered was the response. This would mean that the respondents find difficulties in the strategies that were being used by their teacher in mathematics. This further implies also that the respondents have not adopted the different methodologies being applied to them by their teacher.

Table 3. Level of the respondents' difficulties in teaching/teaching methodologies.

Statements	Weighted Mean	Remarks
The teacher always comes late to class	2.33	Seldom Encountered
The teacher was well-prepared when entering the class	1.93	Seldom Encountered
The teacher is always in a bad mood	2.29	Seldom Encountered
The teacher discussions are not satisfying you	1.92	Seldom Encountered
The teacher does not use problem-solving activities.	2.57	Always Encountered
The teacher reviews the past lessons by giving questions and encourages students to answer so that participation will be fully maximized.	2.55	Always Encountered
The teacher combines two subjects in the curriculum, Mathematics, and character education.	2.55	Always Encountered
The teacher has a sense of humor.	2.29	Seldom Encountered
The methods/techniques used by your teacher are effective.	2.57	Always Encountered
The teacher discusses the lesson from simple to difficult.	2.33	Seldom Encountered
Average Weighted Mean	23.43	Always Encountered

Table 4 shows the level of the respondents' difficulties in instructional material, not enough available books on Mathematics has a weighted mean of 1.93 which is in line with the seldom encountered; reference books/textbooks are available has a weighted mean of 2.06 which is in line with the seldom encountered; calculator is allowed during examination has a weighted mean of 1.26 which is in line with the never encountered; students are required to solve or self-practice the exercises given in the Mathematics books has a weighted mean of 1.08 which is in line with the never encountered; photocopying or xerox machines are available within the school vicinity has a weighted mean of 1.65 which is in line with the never encountered; no compass, protractor or meter stick are showing related to the topic being discussed has a

weighted mean of 1.93 which is in line with the seldom encountered; no students view educational film has a weighted mean of 1.33 which is in line with the never encountered; educational tour/fieldtrip are discouraged has a weighted mean of 2.36 which is in line with the always encountered; no visual aids to supplement class discussion has a weighted mean of 2.39 which is in line with the always encountered; graphing board are being used during graphical presentation has a weighted mean of 1.52 which is in line with the never encountered; and lastly the level of respondents' difficulties in instructional material has a average weighted mean of 15.96 which is in line with the never encountered based on the interpretation of data. This implied that the respondents had difficulties with instructional materials with a weighted. Moreover, the respondents not found difficult to learn without the presence of the different instructional material needed in the subject.

Table 4. Level of the respondents' difficulties in instructional material.

Statements	Weighted Mean	Remarks
Not enough available books on Mathematics	1.93	Seldom Encountered
Reference books/textbooks are available	2.06	Seldom Encountered
The calculator is allowed during the examination	1.26	Never Encountered
The students are required to solve or self-practice the exercises given in the Mathematics books	1.08	Never Encountered
Photocopying or Xerox machines are available within the school vicinity	1.65	Never Encountered
No compass, protractor, or meter stick is showing related to the topic being discussed	1.93	Seldom Encountered
No students view the educational film	1.33	Never Encountered
Educational tours/field trips are discouraged	2.36	Always Encountered
No visual aids to supplement class discussion	2.39	Always Encountered
Graphing boards are being used during the graphical presentation	1.52	Never Encountered
Average Weighted Mean	15.96	Never Encountered

Table 5 shows the level of the respondents' difficulties in learning environment, classrooms are not all ventilated has a weighted mean of 2.06 which is in line with the always encountered; classrooms are provided with blinds and curtains that can help minimize or eliminate glare has a weighted mean of 1.26 which is in line with the seldom encountered; direct rays of the sun on the black board has a weighted mean of 1.08 which is in line with the never encountered; school is located near the road where many vehicles pass by from time to time has a weighted mean of 1.65 which is in line with the never encountered; school is located near residences has a weighted mean of 1.93 which is in line with the never encountered; school is always flooded during heavy rains has a weighted mean of 1.33 which is in line with the seldom encountered; not enough chairs provided for the students has a weighted mean of 2.36 which is in line with the seldom encountered; size of the classroom is not enough to accommodate the number of the students has a weighted mean of 2.39 which is in line with the never encountered; blackboards are placed where students will fall the light has a weighted mean of 1.52 which is in line with the never encountered, there is no limit on the number of the students inside has a weighted mean of 1.96 which is in line with the never encountered; and lastly the level of respondents' difficulties in learning environment has an average weighted men of 14.41 which is in line with the never encountered based on the interpretation of data. The result signified that the school environment was ideal for learning.

Table 5. Level of the respondents' difficulties in a learning environment.

Statements	Weighted Mean	Remarks
The classrooms are not all ventilated	2.06	Always Encountered
The classrooms are provided with blinds and curtains that can help minimize or eliminate glare	1.26	Seldom Encountered
Direct rays of the sun on the blackboard	1.08	Never Encountered
The school is located near the road where many vehicles pass by from time to time	1.65	Never Encountered
The school is located near residences	1.93	Never Encountered
The school is always flooded during heavy rains	1.33	Seldom Encountered
Not enough chairs are provided for the students	2.36	Seldom Encountered
The size of the classroom is not enough to accommodate the number of the students	2.39	Never Encountered
Blackboards are placed where students will fall the light	1.52	Never Encountered
There is no limit on the number of students inside	1.96	Never Encountered
Average Weighted Mean	14.41	Never Encountered

Table 6 shows that the overall mean rank of difficulties in learning Mathematics, instruction has a weighted mean of 23.58 which is in line with the always encountered; teacher/teaching methodologies has a weighted mean of 23.43 which is in line with the always encountered; instructional materials has a weighted mean of 15.96 which is in line with the never encountered; and lastly learning environment has a weighted mean of 14.41 which is in line with the never encountered. The study showed that difficulties encountered by the respondents in learning Mathematics are in the instruction and teacher/teaching methodologies needed in the subject. This meant that the respondents lack the qualities of an effective and efficient teacher. They have not adopted the different methodologies being applied to them by their teacher. With regards to the other factors in terms of the instructional material and learning environment were problems for them. This meant that the teacher in Mathematics was capable to impart learning to the students because of the presence of instructional materials and of the school environment conducive to learning the students found it easier to learn the subject.

Table 6. Overall Mean and Rank of Difficulties in Learning Mathematics.

Learning Difficulties Encountered	Weighted Mean	Remarks	Rank
Instruction	23.58	Always Encountered	1
Teacher/teaching Methodologies	23.43	Always Encountered	2
Instructional Materials	15.96	Never Encountered	3
Learning Environment	14.41	Never Encountered	4

4. CONCLUSION

Based on the findings, the majority of the respondents were females, whose parents were college graduates, self-employed, and have a family income of P5,000.00-P9,000.00. Through this study, difficulties encountered by the students in learning mathematics were determined. Instruction/teaching methodologies were the main source of these difficulties as compared to other factors of the teaching-learning process. In the descriptive interpretation of the study, the instruction and teacher/teaching methodologies needed for better learning were the main causes of the difficulties which were interpreted as always encountered.

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6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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