



Teaching Strategies and Math Anxiety of Intermediate Pupils of Eugenio S. Daza Pilot Elementary School

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Abstract. This study investigated the relationship between teaching strategies and the level of mathematics anxiety among intermediate pupils of Eugenio S. Daza Pilot Elementary School. Specifically, it aimed to identify the teaching strategies commonly employed by mathematics teachers and determine the extent of math anxiety experienced by pupils in terms of learning activities, classroom participation, and assessment situations. The descriptive-correlational research design was utilized, with data gathered through survey questionnaires administered to selected intermediate pupils. Results revealed that student-centered teaching strategies such as collaborative learning, use of instructional materials, and interactive activities were frequently employed by teachers. The findings further indicated that pupils generally experienced a moderate level of mathematics anxiety. Statistical analysis showed a significant relationship between teaching strategies and pupils' math anxiety, suggesting that effective and engaging instructional approaches contribute to reduced anxiety in mathematics learning. The study concludes that the use of varied, learner-centered teaching strategies can help create a supportive learning environment and lessen math anxiety among intermediate pupils. Recommendations include continuous teacher training and the integration of interactive and engaging instructional methods to improve pupils' attitudes toward mathematics.

keywords: Teaching Strategies; Mathematics Anxiety; Intermediate Pupils; Mathematics Education; Elementary School.

I Introduction

In this study, knowledge is very important to mankind who wants to succeed and get a good job in the future. For those who want to survive in this competitive world, holding a good qualification in education is the main key. However, there are many students who do not use the chance that they have in the right way.

Math anxiety is also a big problem in which students suffer from an irrational fear of mathematics that affects their ability to learn, comprehend, practice, and perform mathematical problems and procedures. This anxiety can cause an inability to think and process to answer mathematical problems. Students are not born with math anxieties; they are victims to the system. (Miller & Mitchell,)

Huberty (2012) state that anxiety is a reaction to certain situations. A small level of anxiety is normal, but severe anxiety can be a serious problem. Math anxiety can become more detrimental over time.

According to Jameson (2010) mathematics anxiety not only affects individuals' achievement in mathematics, but also their attitudes toward mathematics and their feelings about themselves. Pupils with high level of fear on mathematics have negative attitude towards mathematics which may lead to avoidance of mathematics throughout their schooling.

Math anxiety can also affect pupil's academic performance. If a pupil has math anxiety, the student might not be able to complete group tasks or might not feel comfortable in asking for help in class. Math anxiety can lead to academic anxiety. Teaching student self-regulation can reduce anxiety and increase academic performance (Ader & Erkin, 2010). In similarity with study of Prescott (2001) doing mathematics in groups can also be a successful way of reducing math anxiety.

Nowadays, pupils feel down in facing mathematics courses which they believe that similar opinions tend to feel them defeated before they even begin the course., (Holley et.al 2005). The intermediate pupils from Eugenio S. Daza Pilot Elementary School find themselves frustrated by their lack of success in mathematics. This situation then may develop a phobia due to fear or even antipathy towards mathematics. Therefore, it is necessary to understand the type of Teaching Strategies that will help the teachers to reduce the Math Anxiety Level of the intermediate pupils in ESDPES School year 2020-2021.

Background of the Study

Mathematics anxieties are not new in the educational system and have been studied for many decades. Callahan (1971) cited Wilber H. Dutton's 1956 article Attitudes of Junior High School Pupils Toward Arithmetic that related the importance of how students

feel and how this impacted the work they did, the effort they exhibited, and their reactions to the expectations for the class. Educators specifically mathematics teachers have a big responsibility towards the performance of the students, if the students performed poorly in math, the tendency of this is that the people will blame the teacher (Stites 1993). However,

Temple professor and mathematician John Allen Paulos (as cited in Stites,1993) directed this problem in a certain factor, he attributed this problem to the educational system that “Emphasizes practice without incorporating the concept.” There is also an impact of having a negative mindset about mathematics such as math is not for everyone and it is only for a selected few or the left-brained ones (as cited in Stites ,1993). However, Paulos (as cited in Stites,1993) disagreed with this as everyone has the ability to do mathematics and problem solving as long as they know the basic.

Objectives of the Study

Specifically, the primary objectives of this study is to determine the following;

1. To determine the type of Teaching Strategy, utilized by the Mathematics Teachers in terms of:
 - Direct Instruction Method
 - Demonstration Method
 - Indirect / Exploratory Method
 - Cooperative Learning
- 2.To determine the frequency of utilization in Teaching Strategy
- 3.To determine the level of Anxiety of pupils towards Mathematics
4. To determine if there is a significant relationship between the frequency of utilization of Teaching Strategy and the Math Anxiety of the pupils.

Significance of the Study

The researcher believe that the findings of the study will be of significant in exploring and better understanding of student’s journey in the learning process.

Further, the importance of this study is the type of teaching strategies that are effective in reducing pupil’s math anxiety. This study is deemed significant to the following:

Future Researchers – this will serve as a reference for additional information for those who would make a similar investigation and study about the subject matter and this will serve as a guide when they are already conducting their research.

Parents - Enable the parents to guide their children and fully understand their role in monitoring them in school. Thus, this will let them comprehend what their children are going through and will give them an idea on how they can give the support and encouragement that their children need.

Researcher – as educator and continuing professional development, this study will serve as guidelines on how to help students with the same kind of problems.

Students – this study will provide them awareness of their present condition and knowledge on how to cope with it.

Teachers – as a front liner in education, they can gain insight on what strategies can effectively reduce Mathematics anxiety of pupils. It is also expected reduced anxiety level of pupils will concomitantly improve their perceptions in Mathematics.

Scope and Limitations

The study will be conducted from June to August with the aim to determine whether there is a significant relationship between the type teaching strategies used by the Mathematics Teachers of Eugenio S. Daza Pilot Elementary School and the Intermediate Pupils in their Math Anxiety Level.

The respondents of the study are mathematics teachers and intermediate pupils of Eugenio S. Daza Pilot Elementary School year 2025-2026.

Definition of Terms

For better understanding, the following terms are defined according to their use in this study:

Math anxiety is where the student suffers from irrational fear of mathematics that affects their ability to learn, comprehend, practice and perform mathematical problems and procedures.

Teaching Strategies- are strategies that teachers use to lessen their students' math anxiety and concomitantly improve their performance in mathematic.

II. Review On Related Literature and Studies

This chapter presents the article and studies reviewed that bear significance and relevance to the problems under study.

Math Anxiety

Math anxiety can be defined as being a state of discomfort that one experiences when involved in situations requiring the use of mathematics and can affect people of all ages - from elementary school children to adults (Ashcraft, 1995; Cemen, 1987; Wu, 2014). Many who suffer from math anxiety perceive mathematical tasks as being threatening to their self-esteems and may also experience physical changes such as tension, sweaty palms, difficulty breathing, and inability to concentrate (Burns, 1998; Bursal & Paznokas, 2006; Dutton & Dutton, 1991; Hembree, 1990; Trujillo & Hadfield, 1999). Research has shown that the anxiety levels of early childhood education majors are comparable to students enrolled in developmental math courses, whereas elementary education teachers have been shown to have greater levels of math anxiety and less confidence in their ability to learn mathematics than those students pursuing other college degrees (Bursal & Paznokas, 2006; Hembree, 1990; Perry 2011; Vinson, 2001; Zientek et al., 2010).

This could be detrimental to their future students considering that it is possible for math-anxious teachers to inadvertently pass their anxiety and negative attitudes regarding mathematics on to their students (Buhlman & Young, 1982; Karp, 1988, 1991; Middleton & Spanias, 1999; Scholfield, 1981). Math-anxious teachers also have a tendency to teach in the same manner in which they had been taught, employing traditional lecture-style methods that are inconsistent with the NCTM recommendations for mathematics education, which emphasize conceptual understanding through problem solving and cooperative learning (Bush, 1981; National Council of Teachers of Mathematics, 2000, 2014; Wilkins, 2002).

Math Anxiety Causes, Effect, and Preventative Measures

This article of Megan R. Smith (2004) has a similarity to the study, in which teacher's teaching strategy has an impact in reducing pupil's math anxiety.

According to Jackson and Leffingwell, (1999) mathematics teachers have a great role in reducing pupil's math anxiety. The teacher should help the students to overcome math anxiety. Math teacher needs to have a positive mindset for the learning of the students. It has been shown that students tend to internalize their instructor's interest in for teaching mathematics.

In similarity to the study, Megan R. Smith cited, Buxton, (1981) that cooperative learning is one way students can get support to which students need to have people they can go to when they are having difficulty who will help them look at the problem through a different view point and encourage them not to give up on the problem.

Research by Ascraft and Moore 2009 looks into how math anxiety effects mathematics achievements. They state

THEORITICAL FRAMEWORK

To find positive learning experience that may reduce math anxiety of the pupils, this study will use theoretical framework that will focus in Cooperative Learning Theory

Cooperative Learning Theory practice of new knowledge upon the foundation of previous learning. It incorporates the idea that the best learning occurs when students, of mixed levels of ability, are actively engaged in the learning process work in collaboration with other students to accomplish a shared goal.

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Conceptual Framework

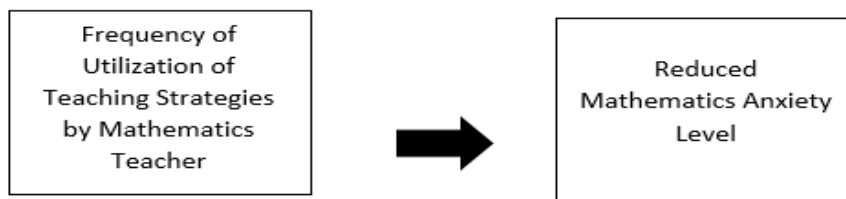


Figure 1.

The framework shows the research perspective of teaching strategies by the mathematics teacher in utilizing the relevant teaching strategies to reduced mathematics anxiety level. It shows the essence of teaching strategies through proper utilization and application, it will create a great and positive impact in reducing children math anxiety.

Null Hypothesis

There is no significant relationship between the type of Teaching Strategy and the level of Math Anxiety

III. Methodology

Research Design

This study will be utilizing a quantitative descriptive - correlational approach survey of research. This method is appropriate because in this study, it will measure the association of two or more quantitative variables and it is concerned with the relationship in the changes and movements of two variables and it will show the impact of the independent variable on the behavior of the dependent variable.

Locale of the Study

This study will be conducted at Eugenio S. Daza Pilot Elementary Schools(ESDPES) where mathematics teachers and intermediate pupils are the respondents.

Respondent of the Study

This study will involve a total of three hundred twenty three (323) of respondents consisting of two hundred ninety (290) pupils and thirty three (33) Mathematics Teachers of Eugenio S. Daza Pilot Elementary Schools(ESDPES) in the City of Borongan in SY 2020-2021

Sampling Procedure

The proportionate random sampling will be employed in identifying respondents that were selected in Intermediate Pupils of Eugenio S. Daza Pilot Elementary School. We will take randomly intermediate pupils to every section. All Mathematics teachers from that we also count as the respondent.

Research Instruments

The research instrument that will be used in gathering the data is checklist for mathematics teacher and a survey questionnaire among intermediate pupils.

The first part is a checklist of the types of Teaching Strategy use by the Mathematics Teachers.

The second part is a survey questionnaire that is for the intermediate pupils in ESDPES that we adapted from Ellen Freedman (2006) and modified it to suit to our study.

Measurement of Variable

To interpret the data of the Teaching Strategies, the researcher will follow this format:

- Types of Teaching Strategy
- 5- Always Utilized
- 4- Often Utilized
- 3- Sometimes Utilized
- 2- Seldom Utilized
- 1- Never Utilized

To interpret the data of the Level of Math anxiety of the Intermediate Pupils the researcher will follow this format:

- 5- Very Highly Agreeable
- 4- Highly Agreeable
- 3- Moderately Agreeable
- 2- Slightly Agreeable
- 1 – Not Agreeable

Data Gathering Procedure

Before we gathered all the necessary data, we requested permission from the principal to conduct a checklist of teaching strategies they use.

A survey questionnaire as used for Intermediate pupils in ESDPES that we adapted from Ellen Freedman (2006) was used.

When permission was given, we immediately started administering the survey questionnaire to the respondents.

Data Analysis

The information and the data gathered were summarized, computed and tabulated using the discipline of statistics. The following statistical measures were employed:

1. Mean will be used to statically treat the data on the type of Teaching Strategies and the Level of Anxiety of the Intermediate Pupils.
2. Standard Deviation will be used to statistically treat the data on how frequency of utilization of the Teaching Strategies
3. To test the significant relationship between the frequency of utilization of Teaching Strategy and the Math Anxiety of the pupils. Pearson Product Moment Coefficient of Correlation (r)

Ethical Consideration

We are asking you to participate in a study “TEACHING STRATEGIES ON THE MATH ANXIETY OF INTERMEDIATE PUPILS OF EUGENIO S. DAZA PILOT ELEMENTARY SCHOOL”

The purpose of this investigation is to find the significant relationship of the Types of Teaching Strategies and the Math Anxiety Level of the Intermediate Pupils.

In this investigation, you have been selected to respond to statements relating to Teaching strategy and the Level of Anxiety. There are no foreseeable risks (legal/physical/social/economic/ and emotional) discomfort that may arise out of your participation in this study. Further, your involvement in this scientific endeavor does not provide any form of benefit, except that it will help you gain information that may benefit now or in future as a regard to school improvement.

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