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MOTIVATIONAL TEACHING STRATEGIES OF GRADE 2 MATHEMATICS TEACHERS

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Abstract : This study focused on the motivational teaching strategies of Grade 2 Mathematics teachers of San Jacinto District, Pangasinan Division II during the school year 2023-2024 to improve the performance of the learners. It looked into the profile of the Mathematics teachers; performance level of the learners during second quarter; significant relationship between the profile of the teachers and their performance in Mathematics; learners' attitude in learning Mathematics. The researcher found out that most of the Mathematics teachers are educationally qualified, with minimum teaching experience, and attended various seminars about Mathematics. The learners obtained a very satisfactory performance. The profile of the teachers is significantly related to the level of performance of the learners in Mathematics. The attitude of the learners towards Mathematics along School – related factors such as study habits and peers; family – related factors like parents; and siblings; and teacher – related factor are the factors affecting the performance of the learners. The proposed motivational strategies could improve the attitude and performance of learners towards Mathematics. The researcher recommended that the proposed motivational strategies should be presented to the Superintendent for its reproduction and utilization to help the Mathematics teachers. Teachers should make instructional materials to improve the performance of the pupils. Such intervention/materials help them understand more clearly the concepts. Parents and teachers should join hands in improving the performance of the learners. Teachers should tell the parents about the difficulties encountered by their children in learning Mathematics. Parents should also monitor the performance of their children in the school. They should give their full support in their studies like attending PTA meetings and have follow-ups in their studies. The least learned skills in Mathematics should be given emphasis in teaching. Teachers should use appropriate strategy and techniques to develop the skills and give more exercise for the students to master the skills.

Keywords: teaching strategies, Mathematics, teachers, performance, attitude

INTRODUCTION

In today's rapidly advancing world of technology, it is crucial for any nation to embrace the latest scientific developments in order to achieve significant economic growth. However, the potential for scientific advancement is hindered if the population lacks a fundamental understanding and appreciation for mathematics. Therefore, it is imperative for educational institutions, with the backing of the government, to prioritize and encourage the study of Mathematics. This will ensure that the country remains competitive and able to keep up with the ongoing progress and innovation taking place globally.

The world we live in is a complex web of interconnected systems and relationships. Mathematics plays a crucial role in understanding and navigating these connections and the endless possibilities they present. It is important for young learners to start honing their math skills early on, as this will not only benefit them individually but also contribute to the overall progress and innovation of our society and country as a whole. By fostering a strong foundation in math from a young age, we are paving the way for a brighter and more prosperous future for generations to come.

Mathematics, with its intricate abstract symbolism, complex logical structures, and vast array of applications, holds a distinct and unparalleled significance in the realm of academia and beyond. It is undeniable that mathematical skills serve as invaluable tools in tackling a multitude of problems that individuals face on a day-to-day basis. The role of mathematics in liberal

education cannot be overstated, as it permeates virtually every discipline and area of study. Given its remarkable nature and undeniable importance, it is imperative that mathematics be taught with the utmost effectiveness and efficiency to ensure that individuals are equipped with the necessary knowledge and skills to navigate the complexities of the modern world.

Hence, in order to effectively educate students, it is crucial for teachers to have a deep understanding of the subject matter they are teaching before imparting knowledge, skills, and concepts to their students. This is particularly important when addressing the issue of students performing poorly in their academic studies. For example, when teaching Mathematics at the elementary level, educators must possess a strong foundation of mathematical knowledge and a comprehensive understanding of how various mathematical skills develop in students. By equipping teachers with the necessary expertise and insight, they can better support students in their learning journey and help them achieve academic success.

Based on the National Educational Testing and Research Center (NETRC) Statistical Data, the average National Achievement Test (NAT) mean percentage score (MPS) in NAT Grade 10 in all subjects of SY 2011 – 2012 is 48.90 percent distributed as follows: Mathematics 46.37; Filipino 51.27; English 51.80; Science 40.53; and Araling Panlipunan 54.22. On the Division level the overall MPS is 39.86 (http://www.netrc.sysportal.net/Default.Aspx). Based on the presented data, it could be deducted that mathematics is second to the lowest, among the tested subjects in the National Achievement Test MPS among the five subject areas.

Intervention materials play a crucial role in assisting teachers in providing the necessary support for students to make progress in their learning journey. These materials are carefully crafted to enhance and expand students' skills, knowledge, and understanding, guiding them from basic concrete concepts to more complex abstract ideas. By utilizing intervention materials, students are given the opportunity to delve deeper into their comprehension and interpretation of new scientific concepts, allowing them to explore and make sense of these ideas on their own. Moreover, these materials facilitate students in articulating their thoughts and understanding, enabling them to formalize their thinking process and communicate effectively with their teachers. In essence, intervention materials serve as a valuable tool to reinforce and re-teach concepts and skills that students may have struggled with in the classroom, ultimately helping them to master competencies that were not fully developed through traditional teaching methods.(http://www.recsam.edu.mycosmedcosmed09AbstractsFullPapers2009AbstractScience%20Parallel%PDFFull%20Paper 04.Pdf))

It is important for the Mathematics teacher to understand the learning style preferences of their students in order to effectively tailor their instruction. By knowing how each student learns best, the teacher can make informed decisions on how to teach the whole class and provide individualized support. This approach allows for a more personalized learning experience that caters to the diverse needs of students.

In the Philippine concept, as cited in a research conducted by Cabahug and Ladot (2005), the University of the Philippines' greatest failure is in Mathematics. It is also said that repetition in Mathematics is common among UP students that almost one out of three repeat a Mathematics course. Cabahug and Ladot (2005) also said that the faculty of the UP Cebu Natural Science and Mathematics Division or NSMD have felt the declining performance of student in basic Mathematics. It is also stated that the attitude towards mathematics and achievement in mathematics have always been a great concern.

NEED OF THE STUDY.

This study focused on the motivational strategies in Mathematics of public elementary school teachers in San Jacinto District, Pangasinan Division II during the school year 2023-2024.

Specifically, it sought to answer the following sub-problems:

1. What is the profile of the Mathematics teachers in terms of the following:
    1.1 Highest Educational Attainment;
    1.2 Length of Service; and
    1.3 Relevant Training Attended;
2. What is the performance level of the learners during second quarter?
3. Is there a significant relationship between the profile of the teachers and their performance in Mathematics?
4. What is the extent of learners' attitude in learning Mathematics along the following concerns:

a. School – related factors
    a.1 Study habits
    a.2 Peers
b. Family – related factors
    b. 1 Parents; and
    b.2 Siblings
c. Teacher – related factor
    c.1 Teaching method

5. Based on the findings, what motivational strategies can be proposed in teaching Mathematics?

Theoretical framework

The study is supported by the following underlying learning principles and theories: Experiential and Situated Learning, Reflective Learning, Constructivism, Cooperative Learning and Discovery and Inquiry-based Learning.

Experiential Learning, as introduced by David Kolb, is a dynamic approach to education that emphasizes the importance of learning through hands-on experiences and reflection. According to Kolb's Experiential Learning Theory, knowledge is not simply acquired passively, but rather actively constructed through the process of engaging with direct experiences. In this model, learning is seen as a continuous cycle of grasping new information, transforming it through reflection, and applying it in practical situations. By actively engaging with the world around us, individuals are able to develop a deeper understanding of complex concepts and skills.

Situated Learning, on the other hand, is a theory developed by Jean Lave and Etienne Wenger that highlights the significance of learning within a specific social context. According to this theory, learning is not a solitary activity, but rather a social process that takes place within a community of practice. Situated Learning focuses on the relationship between the learner and the environment in which learning occurs, emphasizing the importance of active participation, collaboration, and real-world application of knowledge. By immersing oneself in authentic learning experiences, individuals are able to develop a deeper understanding of concepts and theories, as well as build meaningful connections with others in their field.

Reflective Learning is a process where individuals engage in learning through reflective thinking. It goes beyond simply encountering real-life situations; it involves deepening the learning experience by reflecting on one's experiences and processing them to gain a deeper understanding and derive meaning. Reflective Learning emphasizes that learning is derived from personal experiences and can be continually enhanced by documenting and reflecting on these experiences. This approach has gained prominence in the field of education, as it encourages students to not only absorb information but also to critically think about what they have read, done, or learned. By relating the lesson to their own lives and extracting meaning from the material, Reflective Learning moves beyond rote memorization of facts, formulas, or dates. It is a transformative process that allows individuals to grow and develop through introspection and analysis of their experiences.

RESEARCH METHODOLOGY

Research Design

The study used descriptive-developmental method with questionnaire as the research instrument. Descriptive research method obtains facts about existing conditions or significant relationship between current phenomena. Developmental because it developed problem-solving instructional materials in Mathematics for the learners.

This study focused on the motivational strategies in Mathematics of public elementary school teachers in San Jacinto District, Pangasinan Division II during the school year 2023-2024. It looked into the profile of the Mathematics teachers; performance level of the learners during second quarter; significant relationship between the profile of the teachers and their performance in Mathematics; learners' attitude in learning Mathematics.

Sources of Data

The respondents of this study were the Mathematics teachers and learners of San Jacinto District, Pangasinan Division II during the school year 2023-2024.

Instrumentation and Data Collection

The main data-gathering instrument of the study was a questionnaire checklist.

The questionnaire was formulated by the researcher and was validated by the Mathematics Supervisor and teachers. Suggestions were incorporated in the final draft of the test.

A formal permission to conduct the study and to float the questionnaire was secured from the Schools Division Superintendent of Pangasinan II.

The researcher personally administered the questionnaire to the respondents in each section and immediately checked the papers in order to get the least learned skills.

Tools for Data Analysis

In this study, the researcher used the following statistical measures to analyze the data for the problems.

To answer sub-problem 1 on the profile of the Mathematics teachers, frequency counts and percentages were used.

$$\text{Percentage} = \frac{F}{N} \times 100$$

Where:

F = Frequency

N = total number of respondents

To answer sub-problem 2 on the performance of the learners in during the third quarter, frequency and percentage were used.

To answer sub-problem 3, the significant relationship between the profile of the learners and their performance during the second quarter, Pearson-r was used.

To answer sub-problem 4 on the learners' attitude in learning Mathematics, average weighed mean was used.

RESULTS AND DISCUSSION

Profile of the Mathematics Teachers

The profile of the Mathematics teachers in terms of highest educational attainment, number of years of experience in teaching; and relevant in-service training attended is presented in Tables 1A-1C.

Table 1A. Profile of the Mathematics Teachers in Terms of Highest Educational Attainment

Highest Educational Attainment		Frequency	Percentage
With MA Units		42	72.41
MAEd/Med		16	27.59
Total		**58**	**100**

In Table 1A, it is evident that a significant percentage of Mathematics teachers hold MA units, specifically 72.41% with 42 units. On the other hand, 27.59% have completed MAEd or MEd programs. The data highlights a trend where many teachers are furthering their education in pursuit of career advancement and increased salaries. This indicates a strong belief in the value of professional development among educators. Additionally, a portion of teachers pursuing master's degrees are motivated by aspirations for higher positions such as school head or Master Teacher roles. The statistics reflect a dedication to continuous learning and career progression within the field of education.

Table 1B. Profile of the Mathematics Teachers in Terms of Length of Service

Length of Teaching Experience	Frequency	Percentage
0-5 years	16	27.59
6-10 years	28	48.27
11-15 years	14	24.14
Total	**58**	**100**

It is reflected in Table 1B that most of the Mathematics teachers have been teaching or 6-10 years with 28 or 48.27%. This is followed by 0-5 with 16 or 27.59% and 11-15 years with 14 or 24.14%. The result shows that the teacher-respondents have average length of service.

Table 1C. Profile of the Mathematics Teachers Terms of Relevant Training Attended

Level	Frequency	Percentage
Division	58	100
Regional	39	67.24

***Multiple Responses**

It is shown in Table 1C that all Mathematics teachers had attended Division training. On the other hand, 39 or 67.24% of them had attended Regional training. The results show that Mathematics teachers give importance to training or seminars because of the belief that experience is the best teachers. Through seminars, they can improve their competencies and skills in teaching.

Performance Level of Learners during Second Quarter

The performance level of the learners in terms of academic rating during second quarter is presented in Table 2.

Table 2. Performance Rating during Second Quarter

Academic Rating during Second Quarter	Frequency	Percentage
Outstanding (90 and above)	48	35.56
Very Satisfactory (85-89)	54	40.00
Satisfactory (80-84)	20	14.81
Fair (75-79)	13	9.63
Total	**135**	**100**

It can be seen in Table 2 that majority of the learners obtained a performance rating of Very Satisfactory with 54 or 40%. There are also 48 or 35.56% who got an Outstanding Performance. Some of the received a Satisfactory performance with 20 or 14.81%. The remaining 13 or 9.63% got a Fair rating.

Relationship Between the Profile of Teachers and the Level of Performance of the Learners

Table 3. Correlation between the Profile of Teachers and the Level of Performance of the Learners

Profile of Teachers	Pearson Correlation	Sig. (p)	Interpretation	Correlation Interpretation
Highest Educational Attainment	.211	.002	Significant	**Low Correlation**
Length of Service	.214	.001	Significant	**Low Correlation**
Relevant Training Attended	.181	.001	Significant	**Low Correlation**
Overall Score	**.221**	**.001**	**Significant**	**Low Correlation**

The results revealed that statistically, profile of teachers and the level of performance of the learners (r=.221) had low correlation. The p-value 0.001 would suggest that, overall, correlations made are highly significant which gives probability of error less than 1% (i.e. 0.1%) in the null hypothesis.

It concludes that statistically, there is no enough evidence to say that there is a significant relationship between the profile of the teachers and the level of performance of the Grade 2 learners during the third quarter examination. Thus, the null hypothesis is accepted since the statistics reveals that the correlations made were under the range of low correlation to negligible correlation. This is also consistent with the p-values computed that out of four competencies, three are considered to be significant either at 0.01 or 0.05 level. This implies that it exceeds the value of probability to be considered in order to determine that the null hypothesis made is true.

Learners' Attitude in Learning Mathematics

The learners' attitude in learning Mathematics in terms of school-related factors, family-related factors, and teacher-related factors is shown in Table 4A-4C.

It is clearly shown in Table 4A that learners' attitude in learning Mathematics in terms of practice/habits is moderate extent as reflected by the average weighted mean of 3.22.

A. School - Related Factors

Table 4A. Learners' Attitude in Learning Mathematics in Terms of Practice/Habits

Practice / Habits	WM	DE
1. Studies Math lessons daily because it is a must.	3.50	ME
2. Studies Math only if there are assignments.	3.24	ME
3. Studies Math only when there is a quiz / test scheduled.	3.06	ME
4. Studies Math only when told by parents.	3.25	ME
5. Studies Math only when told by teachers.	3.01	ME
6. Studies Math only when told by friends, classmates, and peers.	3.22	ME
7. Studies Math only when seen others studying the subject	3.09	ME
8. Studies Math because they like the subject.	3.14	ME
9. Studies Math because they like the teacher.	3.54	ME
10. Studies Math only when there is no work to do at home.	3.12	ME
AWM	**3.22**	**ME**

Legend

Statistical Limits	Descriptive Equivalent
4.21 – 5.00	High Extent
3.41 – 4.20	Extent
2.61 – 3.40	Moderate Extent
1.81 – 2.60	Low Extent
1.00 – 1.80	Very Low Extent

The indicator "Studies Math because they like the teacher" got the highest mean rating of 3.54 while the lowest mean rating of 3.01 was given to the indicator "Studies Math only when told by friends, classmates, and peers" though both were described as moderately extent. The result shows that teachers need to encourage the learners to improve their attitude towards Mathematics so that their performance will also improve.

Table 4B. Learners' Attitude in Learning Mathematics in Terms of Peer Influence

Peer Influence	WM	DE
1. Joining classmates for a group work in Math.	3.16	ME
2. Joining classmates who cut classes especially during Math periods because it is difficult and boring.	2.54	LE
3. Going with classmates who do not mind Math subjects because the teacher is unlikable.	3.12	ME
4. Joining friends do assignment.	2.76	ME
5. Prefer going with friends and classmates than attending Math period because I feel sleepy listening to lecture.	3.35	ME
6. Joining friends and classmates who can teach me solve exercises and problems.	2.99	ME
AWM	**2.99**	**ME**

Legend

Statistical Limits	Descriptive Equivalent
4.21 – 5.00	High Extent
3.41 – 4.20	Extent
2.61 – 3.40	Moderate Extent
1.81 – 2.60	Low Extent
1.00 – 1.80	Very Low Extent

In terms of peer influence, a 2.99 average weighed mean was generated which is described as moderate extent. The indicator "Prefer going with friends and classmates than attending Math period because I feel sleepy listening to lecture" got he

highest mean of 3.35 which means that learners are disinterested in learning Mathematics because of the influence of peers and sometimes due to teacher's strategy in teaching the lesson. On the other hand, the indicator "Joining classmates who cut classes especially during Math periods because it is difficult and boring" received a weighted mean of 2.54 which is also described as low extent.

B. FAMILY – RELATED FACTORS

In terms of family- related factors such as parents, learners' attitude in learning Mathematics obtained an average weighed mean of 3.21 which is described as moderate extent. The indicator "The parents praise good work and high grades achieved by the pupils in Mathematics" received the highest mean of 3.32 while the lowest mean rating of 3.14 was given to the indicator "The parents of the pupils give them enough time to study their lessons". The result shows that parents moderately influence their sons/daughters to study Mathematics harder.

Table 5A. Learners' Attitude in Learning Mathematics in Terms of Parents

Parents	WM	DE
1. The parents of the learners encourage them to devote more time to study Mathematics very well.	3.23	ME
2. The parents of the pupils give them enough time to study their lessons.	3.14	ME
3. The parents of the learners do not disturb them when they are studying.	3.17	ME
4. The parents of the learners discuss assignment in Mathematics with me them.	3.19	ME
5. The parents praise good work and high grades achieved by the learners in Mathematics.	3.32	ME
	3.21	**ME**

Legend

Statistical Limits	Descriptive Equivalent
4.21 – 5.00	High Extent
3.41 – 4.20	Extent
2.61 – 3.40	Moderate Extent
1.81 – 2.60	Low Extent
1.00 – 1.80	Very Low Extent

The Grade 2 learners' attitude in learning Mathematics in terms of siblings got an average weighed mean of 3.24 which is described as moderate extent. The highest mean rating was given to the indicator "The siblings of the learners view television programs / VCD's about Mathematics with them, with proper assistance and guidance" with 3.43 which is described as "extent". On the other hand, the lowest mean rating of 3.12 was given to the indicator "The siblings of the learners give them Mathematics book as gift." The result shows that the learners' siblings influence them moderately in learning Mathematics.

Table 5B. Learners' Attitude in Learning Mathematics in Terms of Siblings

Siblings	WM	DE
1. The siblings of the learners give them Mathematics book as gift.	3.12	ME
2. The siblings of the learners view television programs / VCD's about Mathematics with them, with proper assistance and guidance.	3.43	E
3. The siblings of the learners check them if they prepare their things and other materials in Mathematics before going to school.	3.18	ME
4. The siblings of the learners help them to do their assignments regularly especially in Mathematics.	3.14	ME
5. The siblings of the learners check the answers to their assigned Mathematics problems / concepts	3.35	ME
	3.24	**ME**

Legend

Statistical Limits	Descriptive Equivalent
4.21 – 5.00	High Extent
3.41 – 4.20	Extent
2.61 – 3.40	Moderately Extent
1.81 – 2.60	Low Extent
1.00 – 1.80	Very Low Extent

C. TEACHER – RELATED FACTORS

Table 6. Learners' Attitude in Learning Mathematics in Terms of Teaching Method / Strategy

Teaching Method / Strategy	WM	DE
1. Uses the chalk and board in lecturing.	3.45	E

2. Explains the lesson before giving exercises to learners.	3.41	E
3. Gives exercises to students before explaining the lesson.	3.54	E
4. In problem - solving, explains the procedures / steps, then solve the problem and after which let the learners solve similar problems.	3.61	E
5. Presents a solved problem and requires the learners discover the procedures or steps in solving the problem.	3.31	ME
AWM	**3.46**	**E**

Legend

Statistical Limits	Descriptive Equivalent
4.21 – 5.00	High Extent
3.41 – 4.20	Extent
2.61 – 3.40	Moderately Extent
1.81 – 2.60	Low Extent
1.00 – 1.80	Very Low Extent

In terms of the learners' attitude in learning Mathematics along teaching method/strategy of teachers, it obtained an average weighted mean of 3.46 which is described as "extent". The highest mean rating of 3.61 was given to the indicator "In problem - solving, explains the procedures / steps, then solve the problem and after which let the learners solve similar problems." The lowest mean rating on the other hand was given to 3.31 which is considered "moderate extent". The result shows that Mathematics teachers are exerting a lot of effort in order to teachers the learners well. They possessed positive attitude towards the learners and towards the subject.

Recommendations

On the basis of the foregoing findings and conclusions, the following are recommended:

1. The proposed motivational strategies should be presented to the Schools Division Superintendent for its reproduction and utilization to help the Mathematics teachers.
2. Teachers should make instructional materials to improve the performance of the pupils. Such intervention/materials help them understand more clearly the concepts.
3. Parents and teachers should join hands in improving the performance of the students. Teachers should tell the parents about the difficulties encountered by their children in learning Mathematics. Parents should also monitor the performance of their children in the school. They should give their full support in their studies like attending PTA meetings and have follow-ups in their studies.
4. The least learned skills in Mathematics should be given emphasis in teaching. Teachers should use appropriate strategy and techniques to develop the skills and give more exercise for the students to master the skills.

REFERENCES

Chandler, B.J. Education and the Teacher. New York Mc Graw Hill, 1988.

Elsbree, W.S.et.al. Elementary School Administration and Supervision. New York American Book Co., 1959.

Frempong, G. Socio-economic Gradients in Mathematics Achievement: Finding for Canada from the Third International Mathematics and Science Study. Ph.D. Dissertation, University of British Columbia, Vancouver, B.C., 2000

Mansergh, Gerald, Dynamics of Management by Objective for School Administration, Danville: The Interstate Printers and Publishers, Inc., 1988.

Mort,P. Modern Educational Practice. New York: Mc Graw Hill. 1988.

Ainley, Janet; Pratt, Dave Hansen, Alice "Connecting Engagement and Focus in Pedagogies Task Design", British Educational Research Journal, 2006.

Alagic, Mara; Palenz, Diana "Teachers Explore Linear and Experimental Growth: spreadsheets as Cognitive Tools, 2006.

Bafumo, Mary Ellen, "Best Practices: The Power of Language", 2006.

Barker, Lawrence A., "Making It happen First in the World in Science and Mathematics Education "The Modern Teacher" Vol LVI No. 4, 2007.

Cavanagh, Jean; Samuels, Cristina A. "Advocates Urge Bush to Boost Federal Role in Math and Science. 2006.

Dickenson, D.J., & Butt, J.A., "The Effects of Success and Failure on the task Behavior of High Achieving Students. Education and Treatment of Children, 2010.

Furgasz, Helen "Factors that Encourage or Inhibit Computer Use for Secondary mathematics Teaching, 2006.

Gathercole, Susan Elizabeth; Alloway, Tracy Packiam; Willis, Catherine, "Working Memory in Children with Reading Disabilities", 2006.

Harell, Pamela Espricalo; Harris Marry, "Teacher Preparation Without Boundaries:A Two Year Study of an Online Teacher Certification Program" Journal of Technology and Teacher Education, 2006.

Hohowar, Vaishali, "Adjunct Teachers" Could Do End Run Around NCLB Act", 2006.

Lubienski, S. T., "Problem Solving as a means toward Mathematics for All", An Exploratory look through a Class Lens, Journal for Research in Mathematics Education, 2010.

Jones Kristie K, Byrnes, James P. "Characteristics of students Who Benefit from High Quality Mathematics Instruction" Contemporary Educational Psychology, 2006.

Johnson, Clarence; Kritsnits, William. "The Achievement Gap in Mathematics: A Significant Problem for African-American Students" Online Submission, 2006.

Matteson, Shirley M. "Mathematical Literacy and Standardized Mathematical Assessments, 2006.

Nesbit, Paul L; Burton, Susan, "Student Justice Perceptions Following Assignment Feedback", 2006.

Shaftel, Julia; Betton-Kocher Evelyn; Glasnapp, Douglas, Poggio, John "The Impact of Language Characteristics in Mathematics Test Items on the Performance of English Language Learners and Students with Disabilities" Educational Assessment, 2006.

Yun-peng; Ching-Chung Lam; Ngai-ving, Wong "Chinese Primary Schols Mathematics Teachers Working in a Centralized Curriculum System: A Case Study of Two Primary Schools in North East China" Compare: A Journal of Comparative Education, 2006.

Bautista, Emer, "**Comparison of the Achievement in Mathematics of 3rd year Students Taught by Modern Technique and Those Taught by Traditional Method"**, Unpublished Master's Thesis, PNU Manila, 2007.

Cefre, Tito R. "**Effectiveness of Teaching Mathematics by Specialization in Aporao Elementary School",** Unpublished Action Research, PSU-OUS Lingayen, 2007.

Delabajan, Rowena Roma, "**The Mathematical Performance of Grade Six Pupils in Solving Word Problems, Tiburcio Tancino Memorial Institute of Science and Technology,** Unpublished Action Research, PSU-OUS Lingayen, 2011.

De Guzman, **Rachel N., "Reading Comprehension and Mathematics Performance of Grade IV Pupils in Agno District",** Unpublished Master's Thesis, Pangasinan State University-Open University Systems, Lingayen, Pangasinan, 2008.

Domingo, Jose C. **"Relationship Between Word Solving Ability and Some Variables Among Grade V Pupils of Gerona South District",** Unpublished Master's Thesis, Tarlac State University, Tarlac City, 2010.

Dua, G., "**The Correlation of Mathematics Achievement among Fourth Year College Students in Selected Public and Private Schools in North Cotabato Province**, Unpublished Master's Thesis, NDU-NDKC Consortium, Kidapawan City, 2005.

Ekman, George A. "**Comparative Study of Mathematics Achievement",** Unpublished Master's Thesis, University of Mindanao, 2006.

Elevados, Maria R. **"Effectiveness of Modern and the Traditional Method in Teaching Rational Numbers**", Unpublished Master's Thesis, Colegio Milagrosa Sorsogon, Sorsogon, 2008.

Estrada, A. **"Analisis de las actitudes y conocimimientos estadicos elementales en la formacion del profesorado"**, Unpublisher Dissertation, Universidad Autonoma de Barcelona, 2004

Fortea, Felicidad, "**Factors Contributing to the Attitudes of College Students Towards Mathematics,** Unpublished Master's Thesis, Saint Louis University, Baguio City, 2006.

Mapangdol, Paul M. **Causes of Low Performance of Grade VI Pupils in Mathematics in Bauko District, Division of Mountain Province,** Unpublished Master's Thesis, 2005.

Mina, Belen, "**Mathematics Skills and Competencies of Senior Mathematics Majors from Selected Universities in Baguio City**, Unpublished Master's Thesis, Saint Louis University, Baguio City, 2007.

Montecalvo, Teresita P. "**Problem Solving Skills in Foundation, Decimals and Percentage of Grade VI Pupils of Linamon District, S.Y. 2009-2010"** Unpublished Master's Thesis, Mindanao State University, Iligan Institute of Technology, Iligan City, March 2010.