Differentiated activities: An intervention to improve Multiplication Skills among Grade VI pupils of Dela Paz Main Elementary School

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ABSTRACT

Numeracy and literacy remain key domains of learning which are essential for success at school; provide a bridge to further study and work; and ensure children are well prepared for future economic and social prosperity.

Promoting numeracy in all schools is a task. It is a key task for those engaged in school leadership – principals and curriculum leaders – in developing schools policies, in allocating resources and supporting teachers. Achieving better outcomes in numeracy is, of course, a key responsibility of teachers. School Councils too have an important role in supporting the development of appropriate policies and ensuring that achieving high standards of numeracy is incorporated into the school's cycle of goal setting, planning for school improvement and cycle review of performance in these areas.

Numeracy is the capacity to bridge the gap between mathematics learned at school and the many contexts where it needs to be used in daily life.

To assist students to bridge the gap, several important things need to happen at school. In the first place, for students to become numerate, they must be given opportunities to practice and apply the mathematics they have learned. This should take place, not only in the mathematics classroom, but in other areas of the curriculum. What is taught in school probably plays a greater role in the development of numeracy than in the case of literacy.

Teacher's knowledge and classroom culture have been factors frequently researched as contributors to effective teaching. Project Good Start (Thomson et al. 2009) found that effective teachers: have high expectations of all students and challenging tasks and goals appropriate for each student, integrate their content knowledge and their teaching skills to make connections that engage student interest and maintain involvement, monitor student progress using their knowledge of each student's current achievement and the next steps appropriate for them, and provide feedback to the student, and enjoy mathematics and take pleasure in students' enjoyment and success.

Mathematics equips pupils with uniquely powerful ways to describe, analyze and change the world. It can stimulate moments of pleasure and wonder for all pupils when they solve a problem for the first time, discover a more elegant solution, or notice hidden connections.

Keywords: numeracy, classroom culture, curriculum, school's setting

INTRODUCTION

Mathematical thinking is important for all members of a modern society as a habit of mind for its use in the workplace, business and finance, and for personal decision-making. Mathematics is fundamental to national prosperity in providing tools for understanding science, engineering, technology and economics.

Mathematics is a creative discipline. The language of Mathematics is international. The subject transcends cultural boundaries and its importance is universally recognized.

DO 47, S. 2017 – AMENDMENT TO DEPED ORDER NO. 18, S. 2017 (GUIDELINES ON THE UTILIZATION OF THE 2017 EVERY CHILD A READER PROGRAM FUNDS FOR THE EARLY LANGUAGE, LITERACY, AND NUMERACY PROGRAM: PROFESSIONAL DEVELOPMENT COMPONENT)

Dela Paz Main Elementary School is one of the biggest public schools in the City of Biñan. It has a total enrolment of 2,485 students and 58 faculty members. This study focuses on 30 or 75% low skills in multiplication out of 40 students in Grade VI-Diamond. The target is to make 100% achievement rate in multiplication skill among Grade VI-Diamond this SY 2018-2019.

Math Teacher is directly responsible for the success of the academically challenged in multiplication in his/her curriculum experience.

Differentiated activities use in this study are as follows:

- Every Child A Numerate (ECAN)
  Expose pupils to a constructivist learning environment.
  Have pupils join remedial classes where they can use their mathematical skill in multiplication.
  Output: Reduce numbers of non-numerates in multiplication.
- Program of Excellence in Mathematics (POEM)
  Enhance pupils' problem solving abilities, provide multiplication materials for classroom use. Encourage use of cooperative learning approach.
  Output: Increase in proficiency level.
- Speed and Accuracy (Window Cards)
  Enhance pupils' multiplication skills in solving numbers correctly with the least possible time.
  Output: Pupils are able to finish solving window cards accurately and fastly.
- Educational Television (ETV)
  Utilize multi-media materials in remedial classes.
  Use power point presentation, video and ICT integration.
  Output: Pupils enjoy learning and easily understand the lesson through visual learning.

Math Teachers in this school have observed that Grade VI learners had low mastery level in recognizing Multiplication Table, can't multiply 1 digit number nor solving one step word problem. This is the challenge for Math Teachers to make them a multiplicative person before they finish their elementary level.

In this study, the teachers also shaped the Mathematics into a molded subject that will help to ease the pain in saying that Mathematics is a difficult subject. Wherein in a special way teachers can deliver the most effective way to enhance the ability of the pupils to learn the magic of Math. In all prospect of reality there are also things to consider good things to develop child's mind in solving math problems, it is the teacher's teaching strategy.

The real world that goes round and round is totally the merging of pupils capability to understand, the teachers as the modulator of the skills and the Mathematics itself as a whole which help to enumerate the hindrances to embrace the truth about counting and solving figures and problems.

METHODOLOGY

Purposive and convenience sampling will be used in choosing the respondents for this study. The respondents of the study were the (40) pupils of Grade VI for the SY 2018-2019 and (3) Math Teachers of Grade VI.

Data Gathering Methods

- ***Various instruments***

The researcher asked the permission of the Officer-in-Charge and parents of the learners to conduct the study.

The researcher made the questionnaires. They showed them to their adviser for some suggestions and had them pre-test to select non-numerates pupils to the Grade VI, then to the leader of the group explained to them how to answer the questionnaires.

The researcher asked the consent of the Math teachers and advisers before distributing window cards to the pupils. There were three Math teachers from grade VI involved in the study.

Data Collection instruments on the respondents' level of satisfaction to the school procedures of the unit before and after the study; on the tracking of the start and end line of every procedure; and on the effectiveness of the process will be employed in this research.

a. Standardized Tests. This include questions that would describe the non-numerates pupils in Mathematics.
b. Observation Records. This include the observation behaviour and analytical thinking of those who are non-numerates.
c. Questionnaires. This include statement about pupils' personal feeling about their mathematical abilities.
d. Focus Group Discussion. This is a group discussion of teachers on the use of effective strategies to be used for non-numerates.

Respondents will also be interviewed to verify their responses in these data collection instruments.

The data collection through questionnaires / test / observation and group discussion will be done in (3) months by asking concerned school officer-in-charge, teachers and low mastery pupils in multiplication skill to answer the mentioned instruments as they transact with the unit within the time of study. As soon as all instruments are accomplished by the selected respondents, consolidation of results will be done. These results will then be disseminated to the office clientele.

- ***Procedures for data collection***

The data that will be collected in this study will organize and classified based on the research design and the problems formulated. The data will be encoded, will be tallied and will tabulate to facilitate the presentation and interpretation of results using the following:

A. **Percentage Method**- used in determining the percent or part of a variable. It follows the formula;

$$P = \frac{F \times 100}{N}$$

Where: P = Percentage

F = Frequency

N = Sample Size

B. **Descriptive statistics**: Total Weighted Average (mean) was used to answer the problem.

Formula: $$X = \frac{x1 + x2 + x3 + x4 + x5}{n}$$

Where:

X = Mean

x = Individual Item

n = Number of Items

C. **Weighted Mean (WM)** – since the response to the questionnaires were chosen from options, weighted points were assigned for each item for qualitative analysis. WM was used to measure the typicality of the responses. It has the formula;

$$W = \frac{\Sigma fx}{n}$$

Where:

W = Weighted Mean Summation
f = frequency of the response
x = weighted mean
n = total number of respondents

RESULTS

According to Pre-Test on Multiplication Skill June 8, 2018

Pre-test	Scores	Frequency	Percentage	Rank
5 – Outstanding	91-100	2	5%	5
4 – Very Satisfactory	71-90	4	10%	3.5
3 - Satisfactory	50-70	4	10%	3.5
2 – Fair	20-49	19	48%	1
1 - Poor	0-19	11	27%	2
TOTAL		40	100%	

This shows the frequency, percentage and rank distribution according to Pre-test on Multiplication Skills of Grade VI respondents; 19 pupils or 48% ranked 1 with fair results with scores of 20-49, 11 pupils or 27% ranked 2 with poor results with scores of 0-19, 4 pupils or 10% ranked 3.5 both satisfactory (50-70) and very satisfactory results with scores of 71-90, 2 or 5% ranked 5 with outstanding results with scores of 91-100.

According to Post Test on Multiplication Skill October 11, 2018

Post test	Scores	Frequency	Percentage	Rank
5 – Outstanding	91-100	9	23%	3
4 – Very Satisfactory	71-90	18	45%	1
3 - Satisfactory	50-70	13	32%	2
2 – Fair	20-49	0	0%	4.5
1 - Poor	0-19	0	0%	4.5
TOTAL		40	100%	

Table 6 shows the frequency, percentage and rank distribution according to Post test on Multiplication Skills of Grade VI respondents; 18 pupils or 45% ranked 1 with very satisfactory results with scores of 71-90, 13 pupils or 32% ranked 2 with satisfactory results with scores of 50-70, 9 pupils or 23% ranked 3 with outstanding results with scores of 91-100, 0 or 0% ranked 4.5 both fair and poor with scores of 20-49 and 0-19.

DISCUSSION

The Grade VI pupils who are academically challenged in multiplication skill of Dela Paz Main Elementary School for SY 2018-2019 will participate in the research.

There are forty respondents in grade 6. All of them together with their parents and advisers will be asked to voluntarily participate in the research.

In this study, information from the Math teachers and pupils with low multiplication skill about the facts, attitudes and feelings, were gathered and also the academic progress of non-numerates in school. It secures free prior and informed consent from respondents and/or parents and guardians of learners.

Purposive and convenience sampling will be used in choosing the respondents for this study. The respondents of the study were the (40) pupils of Grade VI for the SY 2018-2019 and (3) Math Teachers of Grade VI.

The researcher asked the permission of the School Head and parents of the learners to conduct the study.

This action research will use window cards and technology like tv for visual presentation and computers for ICT/ power point in applying differentiated activities for multiplication skill intervention.

It will employ differentiated activities for the multiplication skill intervention among grade 6 pupils. The intervention will consist of three (3) phases: preparation phase, implementation phase, and post-implementation phase. The data collection techniques to be used are experiencing, enquiring, and examining.

The phenomenon is the difficulty of grade 6 learners to solve multiplication problems, mainly because they don't have knowledge in multiplication table and basic skills in multiplying numbers.

Mixed methods will be used in this action research, namely qualitatie and quantitative methods.

Qualitative data will be coded, organized, compared, analyzed, and major themes will be identified. Thereafter, the themes will be presented, analyzed, interpreted and linked with literature.

Statistical tool will be used in analyzing quantitative data. The results will be presented in table form, analyzed, interpreted and linked with literature.

In the analyzes, the researcher will also write her insights and reflections on the findings to be generated, using her field notes as additional inputs.

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REFERENCES

Online Resources – www.education.vic.gov.au/studentlearning/
Department of Education and Early Childhood Development
Numeracy in practice: teaching, learning and using mathematics
Paper No.18 June 2009

Books

Harold, G. "Psychology of Learning and Teaching", New York Mc Graw Hill Book Co.,2005, pp. 435-436.

Palardy, Michael J. "Teaching Today", (Tasks and Challenges)

Kelly, William. "Educational Psychology", New York Mc Graw Hill Book Co., 2005, pp.108-109.

Lucas, Joseph E. "Approaches to Teaching" , New York, Teacher College Press 2008.

Journals

Brown, W., Company Publisher Dubuguel Lowa, Educators Journal, "Published Phoenix Publishing", House of Educators", Vol.XIV and Vol. VII.

Soriano, Gliceria. "The Scheme of Continuos Progression", The Modern Teacher, July 2008.