Effectiveness of Prototype and Contextualized Daily Lesson Plans in the Performance Level of Grade I Pupils in Mathematics

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ABSTRACT:- This study aimed to determine the effectiveness of prototype and contextualized daily lesson plans the performance level in Mathematics of 30 Grade One pupils along the identified least learned competencies in First Quarter at Bulan South Central School, School Year 2019-2020. Based from the result of the study, the identified least mastered competencies during the first quarter test are Nababasa asin nasusurat an ordinal na numero 1st, 2nd, 3rd, sagkod 10th *(to read and write ordinal numbers 1st, 2nd, 3rd until 10th)* with a mastery level of 64.4.%; Naaaraman an pagkasunod-sunod kan mga bagay *(to recognize the order of things)* with a mastery level of 64.7, Nasasaro –saro an kwartang papel kan Pilipinas *(enumerate the Philippine paper bills)* with a mastery level of 68.1% and Nasusunod- sunod an mga numero *(arrange the numbers in increasing or decreasing order)* with a mastery level of 69.7% and adjectival description of least mastered. The level of performance of the pupils before using the materials in the said four competencies fall within the description of beginning level with 50.2%, 50.3%, 49.9%, and 50.75 respectively and a class mean and PL of 10.06 and 50.3 %. However, an increased was observed after using the instructional materials where pupils got a description of proficient level along the four competencies in mathematics with a class mean of 17.13 and a PL of 85.6. There is also a significant increase in the performance level of the Grade one pupils after using the prototype and contextualized daily lesson plan in teaching mathematics as reflected in the computed t test of 14.69. Further, it could be inferred that the null hypothesis is rejected at .05 level of significance, having the degree of freedom of 29. Hence, it denotes that there is a significant increase in the performance level of Grade one pupils after using prototype and contextualized daily lesson plan. It is recommended that mathematics teachers be encouraged to innovate instructional materials that can be used in teaching to improve the performance level of pupils. The developed instructional materials may be used by teachers and pupils to heighten the academic performance of learners particularly in mathematics. The intervention material in Mathematics hereby developed be given importance to be used by the grade one pupils during the Independent Cooperative Learning (ICL). It may also be mass produced to be utilized by teachers and pupils in Bulan South District. And Further researches may be conducted on the development, validation and effectiveness of instructional materials on the other grade levels, or subjects.

Keywords: Level of Performance, least mastered competencies, prototype and contextualized daily lesson plan, instructional materials, mathematical competency

I.   INTRODUCTION

According to Basic Education Curriculum Primer, we have to educate Filipino learners by learning facts and knowledge critically and creatively to become globally competitive so that they can survive, overcome problem, and realize a gracious life in this risky new world. However, with the present situation of Philippine educational system in which there are scarcity of teachers, insufficient classrooms and lack of instructional materials greatly affect our learners to be an active maker of meaningful life.

As shown in Trends in International Mathematics and Science Study (TIMSS) examination, where the Philippines ranked 36th in the Science test among thirty-eight participating countries. By 2003, the country yielded a similar devastating result, ranking 23rd in Grade 4 Science among 25 countries. The shock reverberated as the country started talking about the crisis in the Philippine educational system [1].

By 2010, the Philippines ranked 85 out of 139 countries in terms of overall quality education. This result points to one painful conclusion that Philippine education is deteriorating. Such results are intended to guide the

Department of Education in its effort towards the improvement of the quality of education in public schools and to provide appropriate intervention for the pupils [2].

The aforementioned problems in the education system are now being addressed by the government through the K-12 program. DepEd also continuously implements innovations particularly in Mathematics. An example of this is the Training in Contextualization in Mathematics which aimed to enhance teachers' skill in test analysis and interpretation and capacitate them in developing various intervention materials for remediation and enrichment of learning [3].

Contextualization for enrichment purposes is one of the solutions employed by the Department of Education to enhance academic achievements of students performing low in the field of mathematics. Contextualized lesson plans affect not only teachers' instruction but classroom management as well. It helps students deeply engaged with their work [4].

This is strengthened by the results of local and international studies which have shown that instructional materials such as contextualized daily lesson plan proven to be effective in teaching and learning process. Bottge [5] investigated the effects of contextualized math instruction on problem solving of 17 middle school students in one remedial class. The study employed quasi and experimental designs to compare the impact of word problem instruction and contextualized problem instruction on competition skills and problem-solving performances. Results showed that the contextualized problem remedial in pre-algebra groups outperformed students in the world problem groups in a contextualized and a transfer problem. In an extended problem activity, students in the remedial class applied what they had learned in order to plan and build two skateboard ramps. Results support the use of contextualized problems to enhance the problem-solving skills of students in general and remedial classes.

In addition, Nesari and Heidare [6], attempted to survey 93 English teachers' views concerning contextualized lesson plan at secondary high schools and institutions. Data analysis was done by utilizing descriptive statistics and T-test. The results showed that English teachers agreed with utilizing lesson plan. No significant difference was observed among teachers' views concerning the given variable. The findings revealed that due to the importance of lesson plan, holding specialized workshops may provide information for developing better course plans.

More so, Courtney, et.al [7] examined the role of lesson plans play in mathematics. Study participants consisted of two samples: (a) 28 practicing teachers comprised of middle (grades 5-8) and secondary (grades 9-12) school mathematics teachers and intervention specialists (special education teachers); and, (b) 32 prospective teachers comprised of early childhood (grades K-3), middle childhood (grades 4-9), secondary (grades 7-12), and special education (grades K-12) license seeking teacher candidates. Potential participating teachers were emailed a link to an online survey designed to make explicit their perspectives on the role formal lesson plans play in their practice. The results showed that practicing teachers identified their use of formal lesson plans as a reflective tool and for organization purposes, whereas for prospective teacher lesson plans served as a guide and for accountability reasons. Moreover, Ornstein [8] states that instructional materials can affect students in many ways. They motivate students, contribute to their understanding, provide experiences, reinforce learning, allow different activities to the place, encourage participation, provide experiences that might not have otherwise and change attitudes and feelings.

Inspite of the efforts offered by the Department of Education and the workshops and training conducted Mathematics teachers, still the performance in the National Achievement Test shows that mathematics continues to be the most difficult field of study in the basic education. These low achievement levels indicate that pupils' achievement descriptive equivalent is below the standard of 75 passing score/cut-off score set by the Department of Education. These also show that regular lessons and peer monitoring are not enough to address the low performance in certain competencies [9]. These conditions call for a serious change in the way education business is being done in the country. Hence, the researcher of this study embarked to determine the effectiveness of contextualized and prototype daily lesson plan.

II.   OBJECTIVES OF THE STUDY

This study determined the effectiveness of prototype and contextualized daily lesson plan in Mathematics in the performance level of Grade One pupils in Bulan South Central School, Bulan South District.

Specifically, it determined the least learned competencies in Mathematics of Grade I pupils in the first quarter. It also aimed to determine the learned competencies before and after using the prototype and contextualized daily lesson plan in mathematics. Moreover, it aimed to know if there is there a significant increase in the performance level of Grade one pupils before and after using the prototype and contextualized daily lesson plan in mathematics

III.   MATERIALS AND METHODS

This study utilized a pre-experimental research design. An adapted test in Mathematics approved and reviewed by Department of Education composed of 20 items was the instrument used in the study. Thirty (30) pupils with 14 males and 16 females selected from Section One were chosen as the respondents of the study through purposive sampling. To determine the least mastered competency, the modified scale from DepEd was used: 78% and above- mastered; 50%- 74% -least mastered; 49% and below- not mastered.

The mastery level was determined using the following formula:

Mastery Level = (No. of pupils with correct answer ÷ Total No. of Actual Examinees) X 100%

To determine the performance level of pupils in pre-test and post-test the following formula was used [9]:

$$PL= \frac{X}{No.\ Of\ items\ (Ni)} \ X\ 100$$

Where:

Mean,

$$\overline{X} = \frac{Total\ Score}{Total\ No.\ of\ Respondents}$$

After determining the performance level of the respondents in the test, the following descriptions was used (DepEd Order No. 73,s. 2012):

Scale

Description

Learning Competencies	Mastery Level	Mastery Level Interpretation
1. Nababasa asin nasusurat an ordinal na numero 1st, 2nd, 3rd, sagkod 10th	64.4%	Least Mastered
2. Naaaraman an pagkasunod-sunod kan mga bagay	64.7%	Least Mastered
3. Nasasaro –saro an kwartang papel kan Pilipinas	68.1%	Least Mastered
4. Nasusunod-sunod an mga numero	69.2%	Least Mastered

90% and above - Advanced (A)

85% - 89% -   Proficient (P)

80% - 84% -   Approaching

                    Proficiency (AP)

75% - 79&   -   Developing (D)

74% - and Below - Beginning (B)

To determine the significant differences between the pre-test and post-test, t-test for dependent samples was used with the following formula [11]:

$$t\ test = \frac{\overline{X}1 - \overline{X2}}{\overline{SD}\ x}$$

Where:

$\overline{X1}$ is the mean of population 1
$\overline{X2}$ is the mean of population 2
SDx is standard error of the difference between two means

IV.   RESULTS AND DISCUSSION

1.   The Least Mastered Competencies of Grade I- Pupils in First Quarter in Mathematics

Table (1) shows the least mastered competencies of the pupils in mathematics during first quarter. This table includes the percentage of mastery level in the competencies and its description.

Table 1. The Least Mastered Competencies in Mathematics of Grade I- Pupils In First Quarter

It is reflected in the table that in the first quarter, four (4) of the competencies were identified to be within the level of *least mastered*. These are on Nababasa asin nasusurat an ordinal na numero 1st, 2nd, 3rd, sagkod 10th with a mastery level of 64.4.%; Naaaraman an pagkasunod-sunod kan mga bagay with a mastery level of 64.7, Nasasaro –saro an kwartang papel kan Pilipinas with a mastery level of 68.1% and Nasusunod- sunod an mga numero with a mastery level of 69.7% and adjectival description of least mastered.

These results show that the Grade I pupils found the least learned competencies as a very hard topics Mathematics. This further indicates that the lessons need a remediation in order   to comprehensively understand the competencies. Hence, such findings implied that there is really a need to innovate instructional materials to improve the level of performance of the pupils. Teachers also need to exert extra efforts to motivate their learners and stimulate effective transfer of learning. Consequently, the study on hand proposed that a contextualized daily lesson plans be adapted as instructional material in teaching to facilitate effective teaching and learning and improve academic performance of the pupils.

2.   Performance Level in Mathematics of Grade I-Pupils On The Identified Least Learned Competencies Before Using Prototype And Contextualized Daily Lesson Plan.

Table 2 provides the necessary information relative to the performance level in Mathematics of Grade I pupils before using the prototype and contextualized daily lesson plan. The learning competencies, mean scores, and the description are also reflected

TABLE 2.

Performance Level in Mathematics of Grade I-Pupils Before Using Prototype And Contextualized Daily Lesson Plan.

Learning Competencies	Mastery Level	Mastery Level Interpretation
1. Nababasa asin nasusurat an ordinal na numero 1st, 2nd, 3rd, sagkod 10th	50. 2%	Beginning
2. Naaaraman an pagkasunod-sunod kan mga bagay	50.3%	Beginning
3. Nasasaro –saro an kwartang papel kan Pilipinas	49.9%	Beginning
4. Nasusunod- sunod an mga numero	50.7%	Beginning

Class mean score = 10.06
Class PL= 50.3% – Beginning

It can be viewed from the table that the level of performance of the pupils before using the materials in all competencies fall within the description of beginning level with the competency on Nababasa asin nasusurat an ordinal na numero 1st, 2nd, 3rd, sagkod 10th with a mastery level of 50.2%; Naaaraman an pagkasunod-sunod kan mga bagay with a mastery level of 50.3, Nasasaro –saro an kwartang papel kan Pilipinas with a mastery level of 49.9 % and Nasusunod- sunod an mga numero with a mastery level of 50.7% and adjectival description of beginning. A class mean score of 10.06 with a class PL of 50.3 % describes as *beginning* denotes that the pupils have a very low performance in Mathematics I. The class PL is far below the targeted performance level of DepEd which is 75%. It can be gleaned from the table that the pupil's level in Mathematics along competencies, fall under beginning level. This result implies that the pupils have difficulties in analyzing the test before using the developed instructional materials. This may mean that unavailability of instructional materials resulted to the poor performance in the subject.

3. Performance Level in Mathematics of Grade I -Pupils on The Identified Least Learned Competencies After Using Prototype And Contextualized Daily Lesson Plan.

Table 3 discloses the performance level in Mathematics of Grade I- pupils after using contextualized and prototype daily lesson plans in terms of the four competencies. The mean score, performance level and description.

Table 3. Performance Level in Mathematics of Grade I -Pupils After Using Prototype and Contextualized Daily Lesson Plan

Learning Competencies	Mastery Level	Mastery Level Interpretation
1. Nababasa asin nasusurat an ordinal na numero 1st, 2nd, 3rd, sagkod 10th	85.8%	Proficient
2. Naaaraman an pagkasunod-sunod kan mga bagay	86%	Proficient
3. Nasasaro –saro an kwartang papel kan Pilipinas	85.2%	Proficient
4. Nasusunod- sunod an mga numero	85.4%	Proficient

Class mean score =   17.3
Class PL= 85.6 - Proficient

The table indicates that all the competencies are belonged to orofocient level. These competencies are: Nababasa asin nasusurat an ordinal na numero 1st, 2nd, 3rd, sagkod 10th, Naaaraman an pagkasunod-sunod kan mga bagay, Nasasaro –saro an kwartang papel kan Pilipinas and Nasusunod- sunod an mga numero having a PL of 85.8%, 86%, 85.2% and 85.4% respectively. An improvement was noted from the former figure of 10.06 as mean corresponding to 50.3 PL. The result signifies that the performance level of the pupils has increased much above the performance level of 75% in this competency after using the prototype and contextualized daily lesson plans.

This implies that the said educational tools contributed largely and that the development and utilization of it in the teaching-learning process is effective.

4. Significant Increase in The Performance Level of Grade I Pupils Before and After Using the Prototype and Contextualized Daily Lesson Plan

Table 4. Significant Increase in The Performance Level of Grade I Pupils Before and After Using Prototype and Contextualized Daily Lesson Plan

Statistical Bases	Pre-test	Post-test
Mean	10.06	17.13
Mean Difference	7.066	
Degree of freedom	29	
Computed t-test	14.69	
T value at 5%	2.043	
Decision on Ho	Rejected	
Conclusion	Significant	

Pre-test- 50.3% (Beginning)
Post-test- 85.6 % (Proficient)

The table above provides the necessary information relative to the comprehension level of Grade one pupils after the exposure to the prototype and contextualized daily lesson plan in Mathematics. The performance level, mean, difference in the pre-test and post-test, the degree of freedom as well as the computed t-test are also reflected.

It can be gleaned from the table that the level of performance of the pupils before using prototype and contextualized daily lesson plan had a performance level (PL) of 50.3% and with a mean score of 10.06. Whereas the pupils' PL in the post –test is 85.6 % with a mean score of 17.13.

Analysis of these result shows that there is a significant increase in the performance level of the Grade one pupils after using the prototype and contextualized daily lesson plan in teaching mathematics as reflected in the computed t test of 14.69. Further, it could be inferred that the null hypothesis is rejected at .05 level of significance having the degree of freedom of 29. Hence, it denotes that there is a significant increase in the performance level of Grade one pupils after using prototype and contextualized daily lesson plan.

From the presented results, it can be inferred that employing prototype and contextualized daily lesson plan as an instructional material is needed and that there is really a need to develop an instructional material that is useful, effective, appealing and attractive for the learners.

V.   CONCLUSIONS AND RECOMMENDATIONS

The least learned competencies of the pupils in mathematics during first quarter test are the competencies on nababasa asin nasusurat an ordinal na numero 1st, 2nd, 3rd, sagkod 10th, naaaraman an pagkasunod-sunod kan mga bagay, nasasaro –saro an kwartang papel kan Pilipinas, nasusunod- sunod an mga numerowhich fall under the description of least mastered because they do not master the concepts and lack of conceptual understanding in mathematics. The performance level in mathematics of pupils before using the prototype materials in all four competencies fall within the description of beginning or very low performance level. However, a significant increase in the performance level of the respondents had been observed after the use of the developed instructional materials. Pupils along the four competencies were on the description of proficient level. Thus, the class performance level in mathematics was classified as proficient. The prototype and contextualized daily lesson plans are effective materials in improving the performance level of Grade I pupils. There was a significant increase on the performance level of Grade one pupils after using the prototype and contextualized daily lesson plan.

Based on the results of the study, mathematics teachers be encouraged to innovate instructional materials that can be used in teaching to improve the performance level of pupils. The developed instructional materials may be used by teachers and pupils to heighten the academic performance of learners particularly in mathematics. The intervention material in Mathematics hereby developed be given importance to be used by the grade one pupils during the Independent Cooperative Learning (ICL). It may also be mass produced to be utilized by teachers and pupils in Bulan South District. And further researches may be conducted on the development, validation and effectiveness of instructional materials on the other grade levels, or subjects

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