Effectiveness Of Daily Skip Counting Strategy To The Test Performance Of Grade 4 And 5 Pupils In Mathematics

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Abstract — This study aimed to determine the Effectiveness of daily skip counting to test performance of the Grade 4 pupils in Mathematics. The findings of the study served as a basis of a proposed intervention plan. This study used the Quasi- Experimental method of research to determine the significant difference of the aforementioned variables. The researcher utilized Universal Sampling in identifying the respondents of the study. The test of difference between the Scores in the Pre-test and Post Test of Grade 4-5 pupils in Math before and after the integration of skip counting strategy in the delivery of the most essential learning competencies in teaching Mathematics to the identified pupils. Based on the findings of the study there were a positive result brought about by the skip counting strategy when it comes to the performance of Grade 4-5 pupils particularly the Mathematics subject considering that in the pre-test the respondents is producing good level of performance and resulted to the posttest performance lower in value and has computed T value which is greater than the critical value and based from the results given the hypothesis which stated that there is no significant difference between the pretest and posttest performance of the grade 4-5 pupils before and after the integration of the skip counting strategy is rejected which means that the intervention is significantly effective inn improving the performance of Grade 4-5 pupils. The results further explains that the Grade 4-5 pupils experiencing great impact on the type of strategy applied to them. The strategy used by the teacher guided the learners to improve their performance in Mathematics.

The result of this study further explained that integrating such strategy like skip counting, it will improve the technique for learning multiplication facts, deepen their understanding on number patterns, improves logical thinking, builds confidence and enhances their sense of numbers and quantity.

Keywords — Effectiveness Daily Skip Counting Strategy Grade 4 & 5 Learners Mathematics

I. Introduction

Numeracy is the ability to recognize and apply math concepts in all areas of life. Numeracy is important to individuals to develop logical thinking and reasoning strategies in their everyday activities. We need numeracy to solve problems and make sense of numbers, time, and patterns and shapes for activities like cooking, reading receipts, reading instructions and even playing sports.

For me as an ordinary person and as a mother of two school-aged children, numeracy plays a vital role in their lives. Being numerates will enable them to understand the why's and how's of mathematics which is very applicable to their daily activities. Thus, as early as 6 year-old, I let my grade 1 daughter memorize skip counting by 2 to 10. And after 2 weeks, she was able to memorize the skip counting. And after a month, she was able to solve the regional numeracy test perfectly. Same as to my 9 year-old son, he has no difficulty in the numeracy test because he had mastered the skip counting and the concepts of all the fundamental operations.

For me, as a professional teacher, the numeracy level of the pupils is a reflection of how well the pupils understand and mastered the four fundamental operations in Mathematics. If the pupils failed to master the concepts of the 4 operations, then they will fail to be called highly numerates. If the pupils got zero even in one operation, then they will be called non-numerates. Thus, it is the main concern of every teacher to teach these operations eagerly, patiently and with full understanding on the basic concepts of the operations.

As a grade 4 teacher, it is very alarming on my part that pupils reached key stage 2 having a numeracy level of non-numerates. For the current school year, numeracy results of the moved in pupils from other school showed that a lot number of non-numerates and a lot number of moderately numerates. I cannot help but asked myself why they are still non-numerates and moderately numerates. And based from the results of the numeracy test conducted, most of the pupils had no mastery of the four fundamental operations. Many of them got zero in the multiplication and division operations. Some failed to answer addition and subtraction perfectly. With this problem, I came to realization on implementing the daily skip counting in order to improve the numeracy level of the pupils. Since mastery of skip counting was very evident to my 2 children I will apply this strategy to zero out non-numerates and elevate the moderately numerates. Daily skip counting will surely contribute mastery of the skip counting and will surely help on the numeracy level of the pupils. Mastery of the skip counting will lead the pupils to answer multiplication and division easily and immediately.

In the study of Paula Varaidzai Makondo and Davison Makondo (2020), amongst the causes of poor academic performance in Mathematics are attitudes of the learners towards the subject, lack of teaching experiences, economic conditions, lack of appropriate teaching methods and low motivation of teachers and attitudes. Hence, strategic intervention must be implemented to develop pupils' interest and progress their level of achievement.

The researcher purely believes that this study will help the performance of the Grade 4 pupils in the different learning competencies and overcome the different least learning competencies that considers difficult to learn as they will be started in the key stage 2 in their educational career.

This study evaluated the effectiveness of Daily Skip Counting Strategy to the test performance of the Grade 4 and 5 pupils in Mathematics in Higuloan Elementary School in the Division of Baybay City. The findings of the study were the bases for a proposed Integration Plan.

Specifically, the study sought to answer the following questions:

1. What is the pretest level of performance of the Grade 4 & 5 pupils in Mathematics?
2. What is the posttest level of performance of the Grade 4 & 5 pupils in Mathematics?
3. Is there a significant difference between the scores of Grade 4 and 5 learners before and after the integration of the daily skip counting?
4. What integration plan can be proposed based on the findings of the study?

NULL HYPOTHESIS:

Ho: There is no significant difference between the scores of Grade 4 & 5 learners before and after the integration of the daily skip counting.

II. Methodology

Design. This research applied the quasi-experimental study that will be used the pre-test - post- test experimental designs. The experimental part of the study was the learners' performance (Scores) of the Grade 4 & 5 pupils in Mathematics. Quantitative analysis was used to determine the significant difference between the pre-test and post-test mean scores. In this study, the researcher used the Summative Test Questionnaires in Mathematics to determine the least mastered competencies. Based from the identified least mastered competencies that were the basis in implementing the daily skip counting strategy. The study were conducted for one month period or depending on the number of least learned competencies in mathematics which were divided per week. The participants for this study will be the grade 4 & 5 pupils handled by the researcher it has the lowest Mean Percentage Score. In this study, the selected participants were exposed to the entire content of daily skip counting strategy during remedial or vacant time of the learners.. The findings of the study were the bases for a proposed intervention plan. The researcher utilized Universal Sampling in identifying the respondents of the study. Quantitative analysis was used to determine the significant difference between the pre-test and post-test mean scores in Higuloan Elementary School in the Division of Baybay City based from the different most essential

learning competencies in first grading period delivered in English subject which purely focused on the different competencies. The main local of the study is in Higuloan elementary School which is located under the in the Division of Baybay City. Based from the aforementioned locale, the main respondents that were chosen by the teacher-researcher was the Grade 8 learners which was identified based on their test performances prior to the integration of daily skip counting strategy in the delivery of the different learning competencies. The assessment given to the respondents was carefully validated by the teacher-researcher himself which are the pretest and posttest test performances of the Grade 4 & 5 learners, the different steps in conducting the identified approach were undertaken in order to validate their performances before and after the implementation of daily skip counting strategy to the respondents. This study is mainly focus on the results of the different test validation to gather data: The pretest scores performance of the Grade 4 & 5 learners before the implementation of the daily skip counting strategy in identifying the performance of the respondents, The Posttest scores performance of the Grade 4 & 5 learners after the implementation of the daily skip counting strategy as well as the significant difference of the pretest and posttest performances before and after the implementation of the daily skip counting strategy in the delivery of the most essential learning competencies in teaching Math for the first grading Period. In the Quasi- experimental research design, the researcher prepared the different materials which integrating daily skip counting strategy . The focus of this study was the Grade 4 & 5 learners and those readers who are in the fair and good level of performance in order to improve their performance those on the average level of performance as well as those learners who were independent learners as well as facilitating in the giving of pretest and posttest to the identified respondents in order to gather necessary data that will be significant in the study; The proposed Intervention Plan was taken based on the findings of the study.

Sampling. The respondents of the study were the Grade 4 and 5 pupils Higuloan Elementary School with total enrollment of 10 pupils in grade 4. 6 of them are males and 4 are females. In the grade 5 respondents, there were 13 males and 6 females with a total of 19 total number of respondents. All in all, the respondents are 29 grade 4 and 5 pupils. They were selected using the universal sampling method. The respondents or the grade 4 & 5 learners were being identified based on the performance of learners, and the primary means of reach is during the actual conduct of the study as well as during the gathering of data in the school where the study was conducted.. Another way of contacting them are through cell phones of their respective parents.

Research Procedure. The researcher prepared the research design which is the quasi-experimental research design and tools which are the different learning materials embedding the Daily Skip Counting Strategy based from the numeracy test given to the respondents . The researcher formulated the following steps or procedures to be guided during the gathering of data. The steps are the following:

The researcher sent a letter to the Schools Division Superintendent of Baybay City Division for approval in conducting the study to the said school, After which, the approved letter coming from the Schools Division Office was given to the Public School District Supervisor (PSDS) for his awareness.

The researcher conducted the pretest before the integration of Daily Skip Counting Strategy. After conducting the pretest, the researcher now integrating the Daily Skip Counting Strategy to the different most essential learning competencies (MELCs) in Mathematics for 4 weeks. After 4 weeks of integrating the Daily Skip Counting Strategy to the lesson, the posttest was conducted to validate the learning of the Grade 4 & 5 learners..

The results were analyzed and interpreted in order to find out if there were increased on the performance level from the pretest to the posttest. Then after the posttest and pretest were analyzed, the posttest result was treated statistically using the test for mean difference. The Approval and recommendation from the Office of the Schools Division Superintendent, as well as to the Assistant Schools Division Superintendent being the Chairman of the Schools Division Research Committee through the Senior Education Program Specialist in Planning and Research. After the Approval of the Schools Division Research Committee, the Approved or endorsement letter from the body together with the approved letter of intent were forwarded to the Office of the Public School District Supervisor as well as to the office of the School principal in order to get full support on the conduct of the study as well as to get also approval from their end. The proposed title and design was submitted to the School Division Office for approval. Upon approval, the Division released endorsement to the District Office where the school is located. When the research was approved by the Schools Division Office and District Office, the researcher began the process of data gathering. Validation of the instruments through Experts such as the Master Teacher and in coordination with the school head and lastly to the Education Program Supervisor in Learning Resource was sought. Orientation of the participants was done. Answering and retrieval of the research tool followed. Tallying of results and treatment of data. Analysis and Interpretation of Data. Making of Proposed Enhancement Plan.

Ethical Issues. The right to conduct the study was strictly adhered through the approval of the principal, approval of the Superintendent of the Division. Orientation of the respondents both the learners and the teachers including the School Principal was done.

Treatment of Data. The following statistical formulas were used in this study:

The quantitative responses were tallied and tabulated. The data was treated statistically using the following statistical tool.

Weighted Mean. This was utilized to assess the literacy performance of the Grade 4 &5 learners.

The statistical tool was used to find if there is significant difference between the Pre and Post test scores of Grade 4 & 5 pupils using the t-test for two sample means. A t-test for independent samples was also used to find if there is significant difference between the Pre-test and Posttest scores of Grade 4 & 5 pupils.

III. Results and Discussion

Table 1
PRE-TEST PERFORMANCE OF GRADE 4 & 5 LEARNERS IN MANTH

Score Range	Description	PRETEST	
		Frequency	%
33-40	Excellent	0	0
25-32	Very Good	1	3
17-24	Good	5	17
9-16	Fair	22	77
1-8	Poor	1	3
Total		29	100
Weighted Mean		**14.62**	**Good**

Table 1 above shows the pre-test performance of Grades 4-5 pupils in Mathematics, before, the identified respondents did not enjoy the teaching learning process because of less knowledge on the basic numeracy. Key stage 1 learners should master the four fundamentals and table of multiplication so that when they reached hey stage 2 they can participate well the competencies of Grades 4 to 6. Basic numeracy needs to be emphasized or as foundation in order to understand higher level of competencies or skills in Mathematics.

Based on the result in table 1 which focuses on the pre-test performance of Grades 4-5 pupils before the introducing the strategy of skip counting whether the identified strategy is effective or not. Based from the results shown in table 1 (pre-test performance of Grades 4-5 pupils), it was revealed that form the score ranging from 33-40 in the excellent level, there were 0 percent or none of the 29 total number of identified respondents who took the examination, while in the score ranging from 25-32 with the description of very good level of performances, there were 1 or 3 % from the total of 29 learners got the level of very good, from the score ranging from 17-24 with the description of good, among the 29 learners, 5 pupils or 17% of the total population reached this score. Furthermore, in the score ranging from 9-16 which is said to be fair, 22 out of 29 learners or 77% of the total population got this level of fair, which means fair level has the highest number of pupils in testing the performance of Grades 4-5 Mathematics subject. While in

poor level of performance, the score ranging from 1-8,1 out of 29 pupils or 3% from the total population belong to this level of performances. Based from the results given in table 1 it can be gleaned that it resulted to the weighted mean of 14.62 percent which is considered as good level of performances.

The result in table 1 having the overall weighted mean of 14.62 percent implied that majority of the Grades 4-5 pupils who took the pre-test in Mathematics were not that ready and exposed to some fundamentals in Mathematics considering that 22 out of 29 pupils belong to fair level which needs attention to improve their numeracy skills in order to participate and engage in learning competencies in Mathematics Grade 4-5 easier to understand.

The results further explain that the Grade 4-5 pupils need to master first the level of numeracy, moderately numerates or numerates pupils. Considering the fact that Grades 4-5 learners, their key stage 1 time was during the modular distance learning there were no direct contact with Teachers as to discuss the basic skills in Mathematics. Teachers and Parents are doing their best to help those learners improve their numeracy skills. Parents as partners or stakeholders of school must follow up their child in order to be motivated to learn and love the Mathematics subject. Today our teachers have vast access on the different learning strategies and methods that could help them improve their teaching technique and impart those learnings to the pupils in the delivery of the most learning competencies.

Table 2
POST TESTPERFORMANCE OF GRADE 4 & 5 LEARNERS IN MATH

Score Range	Description	POST TEST	
		Frequency	%
33-40	Excellent	26	90
25-32	Very Good	3	10
17-24	Good	0	0
9-16	Fair	0	0
1-8	Poor	0	0
Total		29	100
Weighted Mean		**35.72**	**Excellent**

Table 2 above shows the post-test performance of Grade 4-5 pupils in Mathematics after the identified respondents which are Grades 4-5 pupils are already enjoying learning the topics based on the different learning competencies in the delivery of the desired skills that is being improved using the skip counting strategy. Based from the results, those pupils who were already

experiencing the identified strategy in the delivery of the most essential learning competencies in teaching Mathematics is already is already capable to learn with their own with the different mathematics or numeracy skills based on the type of strategy that they have learned from the time that they have learned things or improved their numeracy skills. This learning also was made possible because of their Parents or guardians who are always there to support them along the way.

Based on the result in table 2 which focuses on the post-test performance of Grade 4-5 pupils in Mathematics after the exposure of such strategy which is the skip counting strategy and integrated already to different Mathematics skills, pupils post test results were improved after integrating such strategy. Based from the results shown in table 2 (Post-test performance of Grade 4-5 Pupils in Mathematics) it was revealed that from the score ranging from 33-40 in the excellent level,26 out 29 pupils or 90% of the total population got the level of excellent and 3 out of 29 pupils or 10% got the score ranging from 25-32 which is very good and 0% or none form the Grade 4-5 pupils got the score ranging from 17-24 which is good level of performance, 0% form the score ranging from 9-16 or fair level of performance and none or 0% form score ranging from1-8 or poor level of performance.

The result in table 2 having the overall weighted mean of 35.72 Percent which was based from the results or assessment given by the researcher to the identified respondents implied that 90% of the total respondents who took the post-test performance in Mathematics are in the excellent level of performance which means that after using the intervention or strategy used by the researcher to conduct the assessment, pupils were able to understand the strategy used by the teacher and applied it to the learning competencies in Mathematics particularly Grade 4-5 competencies. Collaboration between teacher's effort and pupils willingness to learn and understand the lesson made the result successful and excellent.

TABLE 3

Test of Difference Between the Scores in the Pre-test and Post-test of Grade 4-5 Pupils in Math

Aspects	Test Scores		Computed T	Critical T	Decision	Interpretation
GRADE 4-5 Pupils	Pre Post	14.62 35.72	1.664	0.232	Reject H_o	Significant

The table 3 presents the test of difference between the Scores in the Pre-test and Post Test of Grade 4-5 pupils in Math before and after the integration of skip counting strategy in the delivery of the most essential learning competencies in teaching Mathematics to the identified pupils. Based on the findings of the study there were a positive result brought about by the skip counting strategy

when it comes to the performance of Grade 4-5 pupils particularly the Mathematics subject considering that in the pre-test the respondents is producing 14.62 which is good, resulted to 35.72 during the posttest still lower in value which is resulted to the computed T value of 1.664 which is greater than the critical value of 0.232 and based from the results given the hypothesis which stated that there is no significant difference between the pretest and posttest performance of the grade 4-5 pupils before and after the integration of the skip counting strategy is rejected which means that the intervention is significantly effective inn improving the performance of Grade 4-5 pupils. The results further explains that the Grade 4-5 pupils experiencing great impact on the type of strategy applied to them. The strategy used by the teacher guided the learners to improve their performance in Mathematics.

The result of this study further explained that integrating such strategy like skip counting, it will improve the technique for learning multiplication facts, deepen their understanding on number patterns, improves logical thinking, builds confidence and enhances their sense of numbers and quantity.

IV. Conclusion

Based on the findings this study the integration of skip counting is significantly effective in increasing or enhancing the numeracy skills or performance of the grade 4-5 learners in particularly on problem solving and data analysis of the different word problems presented by the teacher. Furthermore skip counting strategy could also one way of giving another solution to fill in the low percentage of the learners in numeracy and improving the teaching strategies of the teachers in the delivery of the most essential learning competencies.

V. Recommendations

1. The proposed integration plan should be utilized by the Grade 4-5 and other intermediate Teachers so that they will be guided on how to properly implement the plan or strategy as well as to know how to address the gap on numeracy difficulties of the pupils specially the Grade 4-5 pupils.

2. The teachers should religiously identify who are those learners that experiencing difficulty in understanding concept in Math as well as solving word problems so that the intervention could be properly be integrated and practice based on the need of the learners during the delivery of the most essential competencies.

3. The school head should conduct INSET or LAC Session to all the teachers not only in numeracy and reading but also to other major subjects so that teachers will be guided on

how to deliver or teach to the learners how to analyze word problems, interpret data based on the different procedures or guidelines set in conducting the intervention.

4. The School Head should closely monitor the teacher's performance on the integration of the Intervention and give technical assistance if it's necessary in order to test the effectiveness of the strategies vis a vis to the numeracy skills performance.

5. In relation to the abovementioned, the researcher is giving the authority to those future researchers to conduct the same study to test the veracity of the results using the Daily Skip Counting Strategy.

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AUTHOR'S PROFILE

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The author is born on June 18,1989 at Baybay City, Leyte, Philippines. She finished with flying colours her Bachelor's degree in Elementary Education at Franciscan College of the Immaculate Conception. In her college days, she actively joined the Student Body Organization(SBO) and was elected as representative.

When she was a newly hired Teacher, she heartily helped her school heads on the tasks of the latter that helped her developed and grew personally and professionally. Having knowledge on the tasks, roles and responsibilities of the school head made her decide to take administration and supervision as her field of specialization for her master's degree. She is currently finishing her Master's degree of Arts in Education major in Administration and Supervision at Western Leyte College of Ormoc City.

She is currently a Master Teacher I in the Department of Education and a Grade –IV Teacher at Higuloan Elementary School at Barangay Higuloan Baybay City, Leyte, Philippines. She has been designated as the school OIC since 2017 until present. As the school OIC, she is doing the job of the school head in the absence of the latter. As a Master Teacher, she is in the field of supervision. She is currently conducting supervision to her co-teachers and conducting technical assistance to the teachers through School Learning Action Cell(SLAC), Focused-Group

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