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Effectiveness Of Using Drill Cards To The Performance Of Grade 1 & 2 Pupils In Mathematics

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Abstract — This study evaluated the effectiveness of the use of drill cards to the performance of the grade 1 & 2 learners in Mathematics. The findings of the study were the bases for a Proposed enhancement Plan. The study utilized the Quasi Experimental type of research Design to validate the effectiveness of the intervention. The researcher utilized Universal Sampling in identifying the respondents of the study. The test of difference between the test scores in the pretest and posttest performances gained by the Grade 1 & 2 learner before and after the teacher-researcher integrated the drill card in Teaching Mathematics. In this table, the researcher shows how the Grade 1 & 2 learners improved their skills in mathematics after they were exposed to the new interventions given by the teacher during the delivery of the most essential learning competencies that was done in a 4 weeks' time.

Table 3 showcased the results above that the pretest performance where learners are not yet exposed to the intervention set by the teacher to the Grade 1 & 2 learners which is lower compared to the posttest performance gained by the learners after they have exposed to the individualized assessment. The results in the pretest and the posttest performances of the Grade 1 & 2 learners resulted to the computed t value and it is greater than the critical t value. So, the null hypothesis which states that there is no significant difference between the pretest and posttest performance of the grade 1 & 2 learners in Mathematics before and after the integration of the drill cards is rejected.

The result of this study which focuses on the significant difference in the pretest and posttest scores of grade 1 & 2 learners before and after the integration of the Drill cards in the delivery of the different topics in Mathematics implied that the applied intervention is significantly effective, meaning that the results is statistically significant which means that the improvement of the scores gained by the learners observed after the intervention is not due to chance but because of the intervention applied by the teacher in teaching the topics. The rejection of the hypothesis connotes that the intervention has a substantial effect on the learner's performances which reflects a meaning improvement when the scores in the pretest is compared to the posttest performance of the grade 1 & 2 learners.

Keywords — Effectiveness Drill Cards Performance Grade 1 &2 Learners Mathematics

I. Introduction

A drill is a classroom technique to aid memorization by way of spaced repetition. Drills Promote the acquisition of knowledge or skills through repetitive practice. Drill is a useful technique to introduce a new lesson and to familiarize learners with new concepts. Flashcards help pupils to engage in active recall or a process wherein pupils actively engage in learning by stimulating our memories and creating lasting connections to the materials. When you create flashcards, you should incorporate images as well as words to help improve your active recall. (https://www.open.edu). Flashcards are effective because they promote active recall in your brain, which is the process by which we retrieve a memory. Seeing a term and then actively attempting to remember the meaning helps to move it from short-term to long term memory.

To enhance computation skills. It develops confidence and a sense of achievement in students. Learned material can be retained for a long time. This technique develops speed and accuracy in learning mathematics. They can be used to build confidence as more answers are correctly provided. They also help to reinforce important materials. Learners are also provided an opportunity to practice critical skills and knowledge sets. Several goals can be attributed to drill and practice exercises. They can be used to build confidence as more answers are correctly provided. They also help to reinforce important materials. Learners are also provided an opportunity to practice critical skills and knowledge sets.

It develops confidence and a sense of achievement in the students. In drill work learned material can be retained for a long time. This technique of learning is good for beginners. It develops speed and accuracy in the learning of mathematics. Drill and practice emphasize on repetition, remedial action, and feedback to reinforce the mastering of each subskill as well as to automate certain performance. The main aim of exercise drill work in mathematics teaching is to enhance computation skills. It develops confidence and a sense of achievement in students. Learned material can be retained for a long time. This technique develops speed and accuracy in learning mathematics.

The problem that I had encountered for my grade 1 pupils is that some of my grade 1 pupils are does not know how to recognize numbers, but he/she can count numbers in their own. What I made is that I keep presenting the numbers and let them read and count the numbers that I presented to them regularly until he/she can recognize the numbers and count the numbers. Secondly do not know how to add and subtract numbers some are know how to add and subtract but easily forgotten in their mind and with used of drill cards, window card constant practice every 3:00 - 4:00 o’clock in the afternoon until the grade 1 pupil of mine are able to add and subtract numbers. Thirdly Lack

of follow -up and used of cellphone or gadget. The parents allowed their child to used cellphone or gadget that's why they can't focused to numbers and unable to add and subtract numbers. Some guardians are busy that's why they can't follow up.

In Grade 2 the problem that I had encountered is that lack of mastery in four basic facts some are knew the operation but have no retention in there in mind. When I used the drill cards and window card it brings backs the eagerness to learn the four basic facts. Secondly lack of follow -up by the guardian of the pupils and always using the gadget or cellphone that's why the attention of the pupils to numbers is lost. What I did is that I used drill card and window card for the practice of my pupils every 3:00 - 4:00 o'clock in the afternoon until the grade 2 pupil of mine have the knowledge of the four basic facts. And I let them answers the activity given to them to their respective home or bring home activity instead of gadget or cellphone played at home.

This study was conducted to determine the effectiveness of using drill cards to the performance of the Grade 1 & 2 pupils in Mathematics. This study was a basis for an Enhancement plan.

Specifically, the study sought to answer the following questions:

1. What is the performance of the Grade 1 & 2 pupils before the integration of drill card in Mathematics?
2. What is the performance of the Grade 1 & 2 pupils after the integration of drill cards in Mathematics?
3. Is there a significant difference between the performances of the Grade 1 & 2 pupils before and after the integration of drill cards in Mathematics?
4. What enhancement plan can be proposed based on the findings of the study?

Null Hypothesis:

There is no significant difference between the performances of the Grade 1 & 2 pupils before and after the integration of drill cards in Mathematics.

II. Methodology

Design. This research applied the quasi-experimental study that used the pre-test - post-test scores in doing the comparative analysis. The experimental part of the study was the learners' test performances in Mathematics . Quantitative analysis was used to determine the significant difference between the pre-test and post-test mean scores in Matam-is Elementary School in the Division of Baybay based from the different most essential learning competencies in first grading

period delivered in Mathematics subject which purely focused on the different competencies. The main local of the study is in the Matam-is 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 1 & 2 learners which was identified based on their test performances prior to the integration of using Drill cards) 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 1 & 2 learners, the different steps in conducting the identified approach were undertaken in order to validate their performances before and after the implementation of drill cards of 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 1 & 2 learners before the implementation of the drill cards in identifying the performance of the respondents, The Posttest scores performance of the Grade 1 & 2 learners after the implementation of the drill cards as well as the significant difference of the pretest and posttest performances before and after the implementation of the drill cards in the delivery of the most essential learning competencies in teaching English for the first Grading Period. In the Quasi- experimental research design, the researcher prepared the different materials which integrating drill cards. The focus of this study was the Grade 1 & 2 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 Enhancement Plan was taken based on the findings of the study.

Sampling. There are 10 who are included in the study. The respondents or the grade 1 & 2 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 drill cards 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) of San Isidro District for his awareness.

The researcher conducted the pretest before the integration of the drill cards in teaching Mathematics After conducting the pretest, the researcher now integrating the drill cards to the

different most essential learning competencies (MELCs) in English for 4 weeks. After 4 weeks of integrating the drill cards to the lesson, the posttest was conducted to validate the learning of the Grade 1 & 2 students.

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 following statistical formulas were used in this study:

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

The responses of the Grade 1 & 2 pupils in will be tallied and tabulated and treated using the Weighted Mean.

T-Test for Mean Difference- This tool was used to calculate the significant difference between the pretest and posttest performances.

III. Results and Discussion

Table 1
PRE-TEST PERFORMANCE OF THE GRADE 1-2 LEARNERS

Score Range	Description	PRETEST	
		Frequency	%
17-20	Excellent	0	0
13-16	Very Good	1	6
9-12	Good	9	56
5-8	Fair	6	38
1-4	Poor	0	0
Total		16	100
Weighted Mean		**9.25**	**Good**

Table 1 shows the Pretest Performances of the grade 1 & 2 learners in the Mathematics subject for the first grading period. We all know that teaching to the learners the Mathematics subject is really challenging specially of the learners are not really exposed to the different drills, activities or exercises due to some of the issues of the recently concluded challenges of educational system due to the pandemic which makes both teachers and learners not really engaged in the teaching and learning process. It is further explains that the results in this table signifies the different learnings gained by the learners is only from the stock knowledge that they have gained from the past and some are the learning experience from their parents or guardian during the limited face to face thus, theh are not really learned the best way in which teachers can only do the task of bringing and giving the exact learning of the learners specially to the subject which is very challenging to learn, the Mathematics subject. This is the subject where the teacher needs to give extra efforts to let the identified non-numerates learners or those learners who are not really capable enough to the basic mathematical operations.

Based from the results shows in table 1 on the pretest performance of the grade 1 & 2 learners in which the basis of answering the different assessment are based from what they have learned from the past in Mathematics subject. It was shown based from the results in table 1 that in the Excellent level having the scores ranging from 17-20, it was found out based in this particular category, there was none from the Grade 1 & 2 learners belong to this highest level of performance or it has a zero percent out of the 16 total of learners being assessed or validated based from the things that they have learned from the past or before they will be exposed to the identified intervention to be integrated during the delivery of the lessons particularly on the learning competencies in the second grading period. In the 2nd highest level of performance having the scores ranging from 13-16 and considered to be the 2nd to the highest level of performance which

said to be the very good level have 1 respondent only or it has an equivalent percentage of 6 percent out of the 100 percent of grade 1 & 2 learners being tested or validated while in the good level of performance having the score ranging from 9-12, there were 9 total number of respondents who took the pretest assessment with an equivalent percentage of 56 percent. In this level of performance, it is said to be dominant compared to other level of performances considering that majority of the learners being tested is in this particular level. On the other hand, in the fair level of performance which has a score ranging from 5-8, there were 6 total number of respondents or it has an equivalent percentage of 38 percent from the total number of respondents or out of the 100 percent or 16 overall total number of respondents who took the pretest examination. In the poor level of performance having a score ranging from 1-4, there were none of the respondents belong to this level out of the 16 total number of respondents who were identified as respondents in this study.

The results in table 1 on the pretest performance of the grade 1 & 2 learners in Mathematics on the identified learning competencies before the use of drill cards to be integrated from the different learning competencies of the aforementioned subject for the first grading period demonstrates a relatively even when it comes to the distribution of scores which is focused on the good and fair level of performances. Based from thee results it was further implied that since there were no learners in the excellent and poor level of performances, it really shown that there was really a limited variation on the capacity of the learners to do the basic mathematical problems or operation which means that the abilities of the learners is very limited. It was there suggest that the teachers should give different activities for them to be exposed more on the different problems in mathematics before they will be introducing to the different teaching approaches. On the learners belong to the good level of performance, in order for them to learn more and improve more on their learning abilities, teachers should employ different or varied activities to test the learners their abilities and encourage them to improve their performance to the very good or even in the excellent level of performances.

Table 2
POST TESTPERFORMANCE OF GRADE 1 & 2 LEARNERS IN MATHEMATICS

Score Range	Description	POST TEST	
		Frequency	%
17-20	Excellent	2	13
13-16	Very Good	13	81
9-12	Good	1	6
5-8	Fair	0	0
1-4	Poor	0	0
Total		16	100
Weighted Mean		**15.25**	**Excellent**

Table 2 shows the Posttest Performances of the grade 1 & 2 learners in the Mathematics subject for the first grading period. Based from the results given by the grade 1 & 2 learners. It was a good results after they experience the intervention for 4 weeks teaching or delivering the different learning competencies even we all knew that teaching to the learners the Mathematics subject is quite difficult and challenging specially of the learners are not really exposed to the different drills, activities or exercises. This results gives us also a clear views on how the learners improve their mathematical skills based on the distribution of the number of learners present in each category. It is further explains that the results in this table signifies the different learnings gained by the learners is based from the things that they have gained from the 4 weeks of learning experience from the teachers during the face to face.

Based from the results shows in table 2 on the posttest performance of the grade 1 & 2 learners in which the basis of answering the different assessment are based from what they have learned from the the 4 weeks of implementation of the intervention in Mathematics subject. It was shown based from the results in table 2 that in the Excellent level having the scores ranging from 17-20, it was found out based in this particular category, there were 2 learners from the Grade 1 & 2 learners belong to this highest level of performance or it has a 13 percent out of the 16 total of learners being assessed or validated based from the things that they have learned after they exposed to the identified intervention to be integrated during the delivery of the lessons particularly on the learning competencies in the first grading period. In the 2nd highest level of performance having the scores ranging from 13-16 and considered to be the 2nd to the highest level of performance which said to be the very good level have 13 respondent or it has an equivalent percentage of 81 percent out of the 100 percent of grade 1 & 2 learners being tested or validated. In this level of performance, it is said to be dominant compared to other level of performances considering that majority of the learners being tested is in this particular level while in the good level of performance having the score ranging from 9-12, there was 1 total number of respondent

who took the posttest assessment with an equivalent percentage of 6 percent. On the other hand, in the fair level of performance which has a score ranging from 5-8, there were none from total number of respondents or it has an equivalent percentage of zero percent from the total number of respondents or out of the 100 percent or 16 overall total number of respondents who took the posttest examination. In the poor level of performance having a score ranging from 1-4, there were none of the respondents belong to this level out of the 16 total number of respondents who were identified as respondents in this study.

The results in table 2 on the posttest performance of the grade 1 & 2 learners in Mathematics on the identified learning competencies after the use of drill cards to be integrated from the different learning competencies of the aforementioned subject for the first grading period showcased a substantial results which means that there was improvement of the leaners in terms of their numeracy skills improvement and further discuss that the intervention being integrated in the teaching and learning process is significantly effective to improve the skills in solving different problems in mathematics. The integration of the intervention indicates positive results and showcased a positive impact to the learners learning impact. Furthermore, it can be explained more that the results in the posttest can boost their motivation and confidence to learn even the math subject and it will also given them the chance to help other learners to learn the subject. The teachers should give different activities for them to be exposed more on the different problems in mathematics to practice more their mathematical skills for future preparation and in order for them to learn more and improve more on their learning abilities.

TABLE 3
Test of Difference Between the Scores in the Pre-test and Post-test of Grade 1-2 Pupils in Math

Aspects	Test Scores		Computed T	Critical T	Decision	Interpretation
GRADE 1-2 Pupils	Pre Post	9.25 15.25	0.996	0.153	Reject H_o	Significant

Table 3 presents the test of difference between the test scores in the pretest and posttest performances gained by the Grade 1 & 2 learner before and after the teacher-researcher integrated the drill card in Teaching Mathematics. In this table, the researcher shows how the Grade 1 & 2 learners improved their skills in mathematics after they were exposed to the new interventions given by the teacher during the delivery of the most essential learning competencies that was done in a 4 weeks' time.

Table 3 showcased the results above that the pretest performance where learners are not yet exposed to the intervention set by the teacher to the Grade 1 & 2 learners is equal to 9.25 which is lower compared to the posttest performance gained by the learners after they have

exposed to the individualized assessment which is equal to 15.25. The results in the pretest and the posttest performances of the Grade 1 & 2 learners resulted to the computed t value which is equal to 0.996 and it is greater than the critical t value of 0.153. So, the null hypothesis which states that there is no significant difference between the pretest and posttest performance of the grade 1 & 2 learners in Mathematics before and after the integration of the drill cards is rejected.

The result of this study which focuses on the significant difference in the pretest and posttest scores of grade 1 & 2 learners before and after the integration of the Drill cards in the delivery of the different topics in Mathematics implied that the applied intervention is significantly effective, meaning that the results is statistically significant which means that the improvement of the scores gained by the learners observed after the intervention is not due to chance but because of the intervention applied by the teacher in teaching the topics. The rejection of the hypothesis connotes that the intervention has a substantial effect on the learner's performances which reflects a meaning improvement when the scores in the pretest is compared to the posttest performance of the grade 1 & 2 learners.

IV. Conclusion

Based on the findings of the study, it shows that the drill cards is significantly effective in improving the performance of the grade 1 & 2 learners in the delivery of the different learning competencies in Mathematics subject. Furthermore, it means that Using drill cards as a primary teaching tool in an intervention plan offers a multifaceted approach to improving mathematical abilities. This intervention plan aims to create a stimulating and effective learning environment by addressing diverse learning needs, encouraging active engagement, improving retention, boosting confidence, supporting mastery learning, and supporting healthy competition and collaboration. Through focused and organized practice, students can build a solid mathematical foundation that will enable them to solve challenging problems and succeed in school and beyond.

V. Recommendations

1. The enhancement plan should be utilized by the Grade 1 & 2 teachers to further enhance the skills or performance of the learners in Mathematics particularly on the different mathematical operations.

2. The Teachers should create different learning activities in mathematics that will accommodate diverse types of learners specially to the learners who are really in need of special attention.

3. The Master Teachers should always give technical assistance and provide comprehensive validation of assessment crafted by the teacher to have a comprehensive and substantial learning materials.

4. Teachers should implement regularly the practice assessment as well as different activities which could give them motivation to learn mathematics subject.

5. The School Principal should validate the different learning assessment utilized by the teachers vis a vis to their prepared daily lessons and give Technical Assistance if necessary if there are things that need improvement.

6. The school Head should always connect with the parents or guardian specially to those learners experiencing difficulties in learning the topics in order for them to improve their performances. Regular parent-teacher conferences can help to foster open communication with parents and involve them in their child's education, resulting in a positive home-school collaboration.

7. Furthermore, the researcher allows future researchers to conduct the same study to validate the results of the study whether the use of drill cards is really effective in increasing the skills or performance of the grade 1 & 2 learners in mathematics.

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