

Effectiveness Of Individualized Assessment Using Contextualized Modules to The Test Performance Of Grade 4 Pupils in Mathematics

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Abstract — This study evaluated the effectiveness of the individualized assessment using contextualized modules to the performance of the grade 4 pupils in Mathematics. The findings of the study were the bases for a Proposed Improvement 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 4 learner before and after the teacher-researcher integrated the individualized assessment using contextualized modules in Mathematics. In this table, the researcher shows how the learners performed or gained or improved their skills in mathematics after they have experience the new learning intervention in the delivery of the most essential learning competencies which composed of more or less 4 to 6 competencies which set to be done in a 4 week's time or 1 month in the implementation. 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 4 learners is in a very good level of performance. But this pretest performance is lower compared to the posttest performance gained by the grade 4 learners after they have exposed to the individualized assessment using the contextualized modules. The results in the pretest and the posttest performances of the Grade 4 learners resulted to the results in the computed t value 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 4 learners in Mathematics before and after the integration of the individualized assessment using Contextualized Modules using is rejected. Moreover, the intervention is improving the performance of the learners in Mathematics subject.

The result of this study which focuses on the significant difference in the pretest and posttest scores of grade 4 learners before and after the integration of the individualized assessment using Contextualized Modules in the delivery of the different topics as well as validate the skills of the learners in Mathematics implies that the applied intervention is significantly effective in improving the performance of the grade 4 learners specially in improving their skills particularly to the different mathematical operations introduced by the teacher to the learners considering that the pretest scores is lower than the posttest scores which means that utilizing the said

individualized assessment using Contextualized Modules in the delivery of the most essential learning competencies in mathematics subject is significantly effective and help the learners in improving their performances. Though they have gained a very good performance from the assessment conducted by the teacher, Some of the reasons why they really gained a very good performance because some of them have already exposed to the different learning assessment from the past 2 years and they were also exposed to the different learning gadgets that help them to be more motivated in learning the subject and loving the process of studying the different topics specially to those topics which are very difficult to understand by them. But we should also consider that individualized assessment using the contextualized Modules that were integrated from the different learning competencies of the Mathematics subject for the 2nd grading period implied that the intervention given to them is significantly effective because they have really gained an excellent performance from the assessment conducted by the teacher in validating their mathematical skills after they were experiencing the identified learning intervention This further explains that it is very important that the teacher really identify or validate the strength and weaknesses of each of the learner in order to give to them a specific intervention or strategy in learning the subject so that they will be more guided.

Keywords — Effectiveness Individualized Assessment Contextualized Modules Performance Grade 4 Pupil Mathematics

I. Introduction

As stipulated in the DepEd Order No. 39, s. 2012, interventions have to be made in order to address learning gaps.

Mathematical methods pervade literally every field of human endeavor and play a fundamental role in economic development of a country. Among all approaches aimed at reducing poor Mathematics achievement, adaption of appropriate methods of teaching appears to be more rewarding. The Department of Education had employed a solution for the deteriorating academic performance of pupils.

Learning mathematics is essential part of our daily lives. It can be applied to our daily tasks and work.

When I was young, my mother taught me to know the basic operations such as addition, subtraction, multiplication, and division because it's a need especially that we had a store at the market. I should be alert in giving the change to the customer. She always said that we, together with my sister, must memorize the multiplication table so it's easy for us to answer division.

Then I realized that knowing mathematics is a must. And it is easily understood with the use of contextualization of individualized instruction in the classroom.

During pandemic, modular learning is important especially if its contextualized so that the learner can easily comprehend the lesson, they can relate it to their personal lives and immediately use it.

The effectiveness of individualized instruction using contextualized modules can improve the test performance of the Grade 4 pupils in Mathematics.

During pandemic, most of the school uses teacher-made contextualized modules for individualized instruction of Grade 4 pupils so that learners can relate, had more interest, and easily understood the topic because the word problem, name of person in the community were used to discuss the specific topic. Teacher should simplify the instruction.

It is better for this time because it is face-to-face, teacher can discuss thoroughly the math topic, use contextualized modules to increase the test performance of Grade 4 pupils.

Every learner differs in learning capabilities. Teachers must have a varied learning activities especially if she has heterogenous class.

With the aforementioned details, the researcher as Elementary School Teacher wanted to know whether the Individualized Instruction using contextualized modules contextualized can improve the performance of the grade 4 pupils in Mathematics.

This study aimed to determine Effectiveness of Individualized Assessment Using Contextualized Modules to the performance of the Grade 4 pupils in Mathematics. The findings of the study were the basis for a proposed Improvement plan.

Specifically, this study sought to answer the following questions.

1. What is the pretest performance of the Grade 4 pupils in Mathematics before the integration of Individualized Assessment using Contextualized Modules;
2. What is the posttest performance of the Grade 4 pupils in Mathematics after the integration of Individualized Assessment using Contextualized Modules?
3. Is there any significant difference on the pretest and posttest performance of the Grade 4 pupils in Mathematics before and after the integration of Individualized Assessment using Contextualized Modules?
4. What improvement plan can be proposed based on the findings of the study?

Statement of Null Hypotheses

Ho1.: There is no significant difference on the pretest and posttest performance of the Grade 4 pupils in Mathematics before and after the integration of Individualized Assessment using Contextualized Modules.

II. Methodology

Design. This study utilized the Quasi-Experimental research design to determine the Effectiveness of Individualized Instructions using contextualized Modules to validate the Performance of the Grade 4 pupils in the delivery of the most essential learning competencies in 2nd grading period in Mathematics subject. The main local of the study is the Balion Elementary School which is located in Ormoc City District 7 in the Schools Division of Ormoc City. In the aforementioned locale, the main respondents that was chosen by the teacher-researcher was the Grade 4 pupils. The aforementioned respondents of the study were carefully chosen and validated by the teacher researcher and were experienced the Individualized Instructions using contextualized Modules which was the intervention of the study and after the aforesaid intervention was done. These particular test questionnaires which were used by the teacher-researcher to use in the study was carefully validated by the teacher-researcher. The aforementioned tool for assessment were used in order to gather the necessary data which are the pretest and posttest performances. This is also the time that in between the pretest and posttest, the different learning materials aligned in the intervention which is the Individualized Instructions using contextualized Modules was undertaken in order to validate their performances before and after the implementation of the Intervention. This study is mainly focus on the results of the different tests to gather data: The pretest performance of the Grade 4 pupils in Mathematics before the implementation of the Individualized Instructions using contextualized Modules, The Posttest performance of the Grade 4 pupils after the implementation of the Individualized Instructions using contextualized Modules, as well as the significant difference of the pretest and posttest before and after the implementation of the Individualized Instructions using contextualized Modules in the delivery of the most essential learning competencies in teaching Mathematics for the second Grading Period. In the Quasi- experimental research design, the researcher prepared different learning materials that were focus on the least learned learning competencies 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 improvement plan was crafted based on the findings of the study as well as on the recommendations based on the Teacher-researcher findings.

Sampling. There are 37 who are included in the study. 14 respondents of the study were Males and 14 were Females and the primary means of reach is through the actual meeting of the learners since the school where the study was conducted is implementing the face to face classes

thus, the gathering of data, was happening inside the classroom.. Another way of contacting them are through cell phones of their respective parents.

Research Procedure. The researcher prepared the research design was chosen the quasi-experimental research design that was applied throughout the completion of the study. The instrument used in the study was the synopsis of formative test questions based on the Self-Learning Modules or Learners Activity Sheets in Mathematics which comprises on the 2nd Grading period. Another Materials used was the individualized instruction using the contextualized modules in the delivery of the most essential learning competencies in Mathematics in the 2nd grading period. The test questions were used before the intervention were given to the pupils. After one month of the intervention, posttest was given to the grade 4 pupils with the same test questionnaire. Prior to the preparation of all validation tools which will be used by the teacher-researcher in determining their performances before and after the integration of the individualized Instruction using contextualized modules together with the different Learning materials which were utilized for the identified approach in teaching, 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. 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 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 Improvement Plan were crafted.

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 Effectiveness of individualized Instruction using contextualized module to the Performance of the Grade 4 pupils in Mathematics on the area focused was treated through a Simple percentage, weighted mean and T-Test of Mean Difference respectively.

III. Results and Discussion

Table 1
Pre-Test Performance of Grade 4 Pupils In Math

Score Range	Description	Experimental Group	
		Frequency	%
33-40	Excellent	5	18
25-32	Very Good	16	57
17-24	Good	7	25
9-16	Fair	0	0
1-8	Poor	0	0
Total		28	100
Weighted Mean		28.49	Very Good

Table 1 shows the Pretest Performances of the grade 4 learners to one of the challenging subjects to be taken by the learners. This is the subject where the teacher needs to give extra efforts to deliver the different topics specially to those learners who are identified as non-numerates learners or those learners who are not really capable enough in solving problems using the different basic mathematical operations. Therefore, the teachers who will be teaching Mathematics should utilize different learning strategies to encourage or motivate the learners specially that for the past 2 years in the implementation of the modular distance learning, the teachers are utilizing Self-Learning Modules based on the most essential learning competencies and the students are just learning the topics most of the time on their own. The results of the pretest performance showcasing by the Grade 4 pupils are just based and merely focused on their learning from the things that they have learned from their experience on the different learning topics shared by their teachers in lower grade level or even on the topics where they have started learning in the first Grading period. Therefore, the Grade 4 learners are not yet exposed to the identified intervention in the delivery of the most essential learning competencies in Mathematics.

Based from the results shows in table 1 on the pretest performance of the grade 4 learners in which are coming from the things that 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 starting from 33-40 with an interval of 7, it was found out based in the table that there are still Grade 4 learners belong to this highest level of performance with a total of 5 learners or 18 percent out of the 20 total of learners being tested before they will be experiencing 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 with a class internals or having the scores ranging from 25-32 have the highest the number of respondents gained in this level of performance considering that there are 16 total number of respondents or 57 percent who were dominating to the entire the levels of performances presented in the pretest performance which revealing out from the overall total of 28 respondents tested while in the good level of performance having the score ranging from 17-24, there were 7 total number of respondents who took the pretest

examination or simply 25 percent from the 28 total number of respondents or 100 percent. In addition, on the fair level of performance which has a score ranging from 9- 16, there were none from the total number of respondents or 28 percent out of the 100 overall total number of respondents who took the pretest examination which is the same happening on the poor level of performance having a score ranging from 1-8 out of the 28 total number of respondents who were identified in this study.

The results in table 1 on the pretest performance of the grade 4 learners in Mathematics subject before the integration of individualized assessment using the contextualized Modules to be integrated from the different learning competencies of the aforementioned subject for the 2nd grading period implied that they have really gained very good performance from the assessment conducted by the teacher in order to validate their skills in Mathematics. In other words, they already learned some of the learning competencies through the table of specifications. Some of the reasons why they really gained a very good performance because some of them have already exposed to the different learning assessment from the past 2 years in the implementation of the modular distance learning as well as on the implementation of the limited face to face while delivering the lessons. Some of these learners were also exposed to the different learning gadgets that help them to be more motivated in learning the subject and loving the process of studying the different topics specially to those topics which are very difficult to understand by them.

Table 2
Post Test Performance of Grade 4 Pupils In Math

Score Range	Description	Experimental Group	
		Frequency	%
33-40	Excellent	13	46
25-32	Very Good	15	54
17-24	Good	0	0
9-16	Fair	0	0
1-8	Poor	0	0
Total		28	100
Weighted Mean		32.61	Excellent

Table 2 shows the Posttest Performances of the grade 4 learners to one of the challenging subjects to be taken by the learners which is the Mathematics subject that needs more push by the teacher and show more efforts to deliver the different topics specially to those learners who are identified as non-numerates learners or those learners who are not really capable enough in solving problems using the different basic mathematical operations. This time, based from the results the teacher, who were teaching Mathematics already utilize different learning strategies based on the individualized learning assessment to encourage or motivate the learners specially those learners who are struggling in learning. The teachers are utilizing the identified the intervention based on the most essential learning competencies which they learned not from their own way of learning but this time, through the guidance of the teacher where they are learning together. The results of

the posttest performance showcasing by the Grade 4 pupils are based from the things that they have learned from their new experience using the intervention on the different learning topics shared by their teachers from the 2nd grading period which were lasted from 4 weeks or 1 month.

Based from the results shows in table 2 on the posttest performance of the grade 4 learners in which are coming from the things that they have learned from the new learning in Mathematics subject. It was shown based from the results in table 2 that in the Excellent level having the scores starting from 33-40 with an interval of 7, it was found out based in the table, the number of respondents were increased to this highest level of performance with a total of 13 learners or 46 percent out of the 28 total of learners being tested before they will be experiencing 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 with a class internals or having the scores ranging from 25-32 have the highest the number of respondents gained in this level of performance considering that there are still 15 total number of respondents or 54 percent who were still dominating to the entire the levels of performances presented in the posttest performance which revealing out from the overall total of 28 respondents tested while in the good level of performance having the score ranging from 17-24, there were none of the respondents who took the pretest examination or simply 0 percent from the 28 total number of respondents or 100 percent. In addition, the same happens to the fair level of performance which has a score ranging from 9- 16 which means that there were none from the total number of respondents or 28 percent out of the 100 overall total number of respondents who took the posttest examination likewise on the poor level of performance having a score ranging from 1-8.

The results in table 2 on the posttest performance of the grade 4 learners in Mathematics subject after the integration of individualized assessment using the contextualized Modules that were integrated from the different learning competencies of the Mathematics subject for the 2nd grading period implied that the intervention given to them is significantly effective because they have really gained an excellent performance from the assessment conducted by the teacher in validating their mathematical skills after they were experiencing the identified learning intervention to help the learners passed the different validation of skills conducted considering also that the average weighted mean by the grade 4 learners is 32.61 which have description of excellent level of performance. This further explains that it is very important that the teacher really identify or validate the strength and weaknesses of each of the learner in order to give to them a specific intervention or strategy in learning the subject so that they will be more guided. Another reason why they really gained an excellent performance based from the post assessment conducted by the teacher because some of them were already guided not only by the teachers but also to their parents and guardians as well as to their classmates specially if there are things that need to be clarified.

Table 3
Test of Difference Between the Scores in the Pre-test and Post-test
of Grade 4 PUPILS IN MATH

Groups	Test Scores		Computed T	Critical T	Decision	Interpretation
Experimental	Pre	28.49	0.963	0.554	Reject Ho	Significant
	Post	32.61				

Table 3 presents the test of difference between the test scores in the pretest and posttest performances gained by the Grade 4 learner before and after the teacher-researcher integrated the individualized assessment using contextualized modules in Mathematics. In this table, the researcher shows how the learners performed or gained or improved their skills in mathematics after they have experience the new learning intervention in the delivery of the most essential learning competencies which composed of more or less 4 to 6 competencies which set to be done in a 4 week's time or 1 month in the implementation. 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 4 learners is equal to 28.49 which resulted to a very good level of performance. But this pretest performance is lower compared to the posttest performance gained by the grade 4 learners after they have exposed to the individualized assessment using the contextualized modules which is equal to 32.61. The results in the pretest and thr posttest performances of the Grade 4 learners resulted to the results in the computed t value which is equal to 0.963 which can be gleaned that that result is greater than the critical t value of 0.554. So, the null hypothesis which states that there is no significant difference between the pretest and posttest performance of the grade 4 learners in Mathematics before and after the integration of the individualized assessment using Contextualized Modules using is rejected. Moreover, the intervention is improving the performance of the learners in Mathematics subject.

The result of this study which focuses on the significant difference in the pretest and posttest scores of grade 4 learners before and after the integration of the individualized assessment using Contextualized Modules in the delivery of the different topics as well as validate the skills of the learners in Mathematics implies that the applied intervention is significantly effective in improving the performance of the grade 4 learners specially in improving their skills particularly to the different mathematical operations introduced by the teacher to the learners considering that the pretest scores is lower than the posttest scores which means that utilizing the said individualized assessment using Contextualized Modules in the delivery of the most essential learning competencies in mathematics subject is significantly effective and help the learners in improving their performances. Though they have gained a very good performance from the assessment conducted by the teacher, Some of the reasons why they really gained a very good performance because some of them have already exposed to the different learning assessment from the past 2 years and they were also exposed to the different learning gadgets that help them to be more motivated in learning the subject and loving the process of studying the different topics

specially to those topics which are very difficult to understand by them. But we should also consider that individualized assessment using the contextualized Modules that were integrated from the different learning competencies of the Mathematics subject for the 2nd grading period implied that the intervention given to them is significantly effective because they have really gained an excellent performance from the assessment conducted by the teacher in validating their mathematical skills after they were experiencing the identified learning intervention This further explains that it is very important that the teacher really identify or validate the strength and weaknesses of each of the learner in order to give to them a specific intervention or strategy in learning the subject so that they will be more guided.

IV. Conclusion

Based on the findings of the study, it shows that the Individualized Assessment using Contextualized Modules is significantly effective in improving the performance of the grade 4 learners in the delivery of the different learning competencies in Mathematics subject. Furthermore, it means that creating individual assessment of each of the learner is very important in order for the teacher to specifically give assistant in accordance to the needs of the learners. Moreover utilizing or integrating the intervention in the delivery of the most essential learning competencies in teaching the topics in Mathematics is highly suggested as well as identifying or validating the level of skills in mathematical operations of the learners could also be helpful in assisting the learners in providing the needs of the learners specially those learners who are identified as struggling learners or non-numerates.

V. Recommendations

1. That individualized assessment using contextualized Modules should be utilized by the Grade 4 teachers to further enhance the skills or performance of the learners in Mathematics particularly on the different mathematical operations.
2. 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.
3. The Master Teachers if there are any, should always give technical assistance and provide comprehensive validation of assessment crafted by the teacher if its align to the norms or standard in providing learning resources.
4. The CID personnel headed by the Education Program Supervisor in Mathematics should monitor the teachers regarding their different learning activities which covers from Week 1 to week 10 and provide ample time to the teachers in giving Technical Assistance on how to craft assessment that is learner-centered.

5. Lr personnel should religiously evaluate the learning resources specially the assessment if it is really following the standards set by the central office.
6. Furthermore, the researcher allows future researchers to conduct the same study to validate the results of the study whether the individualized assessment using contextualized modules is really effective in increasing the skills or performance of the grade 4 learners in mathematics.

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Few things about the author. She was born in a beautiful city of Ormoc on February 26, 1991. She was married last October 2021 with Jig Castillo and currently lives at Brgy. Sabang Bao, Ormoc City. She enjoys cooking, gardening, travelling, spending time with the family and even watching Korean soap operas. She is an online seller, selling gold jewelries in facebook.

She finished her elementary education at Ormoc City Central School and secondary at New Ormoc City National High School, she took up Bachelor of Elementary Education major in General Education at Western Leyte College which she graduated from on March 2012.

And was luckily hired in Department of Education- Ormoc City Division on June 4, 2013. Her first school assignment was in a remote school located in Barangay Labrador. She is still currently teaching in that school handling grade 4 pupils as her advisory class. Her current teaching position is teacher I.

Because she loves her profession, she was motivated to pursue her Master’s degree of Arts in Education major in School Administration and Supervision at Western Leyte College of Ormoc City, with the hopes to finish it with flying colors.

The goal is to inspire young ones that education is important. Impart knowledge and values to the learners that they can apply to their own lives.