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# Effectiveness of the Division Unified Learning Materials to the Least Learned Competencies Of Grade 2 Pupils in Mathematics

**MARIA CRISTINA O. ASENSI**
Teacher II
Western Leyte College
Master of Arts in Education
Major in School Administration and Supervision
mariacristina.asensi@deped.gov.ph

Abstract — This study evaluated the effectiveness of the Division Unified Learning Materials to the Least Learned Competencies of the Grade 2 pupils 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 in Mathematics of the Grade 2 learners Before and After integration of the different unified Division-based learning materials in the delivery of the most essential learning competencies for not more the 4 weeks in the implementation of the identified intervention. In this table, it can be gleaned that in the pretest performance of the grade 2 learners is lower than the posttest performance. So, the null hypothesis which states that there is no significant difference between the pretest and posttest performance of the grade 2 learners in Mathematics before and after the integration of unified division-based learning materials using is rejected.

The result of this study which focuses on the significant difference in the pretest and posttest scores of the Grade 2 learners before and after the utilization of the Unified Division Based unified learning materials crafted by subject and curriculum set of experts in Mathematics implies that the new intervention is significantly effective in improving the performance of the grade 2 learners considering that the pretest scores of the learners is lower than the posttest scores which means that even though the learners have already knowledge or ideas and passed more main tasks and they can expound their ideas of the topics and help them increase their motivation in learning the topics and even though they are gaining a good level during the validation even before the intervention of the aforementioned innovation still they need another learning intervention that could increase more their different learning tasks and performances and that was really happening after the learners really gained learning from the identified intervention which means that the intervention is really effective learners have gained excellent performance during the delivery of the most essential learning competencies for the second grading period during the teaching and learning process of the teacher and learners. Which means that the researcher have already found significant findings of the performance based on the utilization of the Unified division based

learning materials in the delivery of the different topics given for almost 1 month if sharing the intervention to the identified learners. Furthermore, the intervention is really effective in improving the performance of the learners because they already acquired excellent performance from the different topics presented because they really loved and motivated to learn because of how the learning materials are being crafted. Moreover, the learners shows enthusiasm in learning the topics because based from the exposure of the learners to the different division unified learning materials the learners can already expound their ideas of the topics and help them increase their performance in every topics presented by the teachers. There are big possibilities that when the teacher really exposing the learners to the identified learning materials in the delivery of the most essential learning competencies in Mathematics for the second grading.

*Keywords — Effectiveness, Division Unified Learning, Materials, Performance, Grade 2 Pupils*

## I.  Introduction

Asynchronous distance learning is a major part of remote education especially this time of pandemic where the learners are allowed to study at home only. The asynchronous distance learning approach is a common solution that makes learning materials in mathematics more accessible but loses the responsiveness of a live teacher. In certain situations, it works incredibly well to connect remote learners to educational content, but it isn't a perfect system. Asynchronous learning approach is a type of learning in which the student and teacher are not directly communicating in real-time. In the world of online learning, this allows the pupils/learners to learn at their own pace regardless of timezone, location, or schedule. Thus, pupils/learners can make use of their time fully. It means that the teacher and student are likely on different schedules and not communicating live. Sometimes reffered to as being location independent, asynchronous learning can have enormous benefits in terms of education but can bring about disadvantages depending on what kind of learner.

One of the most useful aspects of learning asynchronously is the ability of the teacher and students to move at their own pace. This is made possible with a wide variety of digital teaching tools, which use online modules that can be checked 24/7 via home computer of the teacher. So if a teacher were to upload an assignment on Monday the students could log in and complete the module at their convenience and at their own pace, provided it's on par with the due date. Another is flexibility, the ability to control the speed and the pacing at which they complete a course give them a greater sense of freedom and at the same time more responsibility.

Teachers need to exert more time, effort and energy for struggling learners therefore asynchronous teaching approach will be one of the means to help them with the utilization of the learning materials provided by the division. Teaching beyond class schedule just like noon time and hours in the afternoon after class dismissal would probably create an impact to the performance

of the learners. Through asynchronous teaching approach it allows teachers to access the unified learning materials to address the needs of the learner and make them learn in their own pace.

The researcher personally chose this problem for the reason that She would like to know the effect of the learning materials provided by the division such as recorded video lesson, reading materials, writing assignments and etc., when utilize as a remedial material for struggling learners and as an enrichment material to provide extended learning opportunities and challenges to students who have already mastered the skill or lesson and to know the benefits of this asynchronous teaching approach which maybe allow teachers to design the own learning schedules based on the progress of the learner. Learner can spend more time on challenging areas and work toward mastery of the skill.

Each learner is unique. They have different learning style and capability. So, in classroom discussions there will be learners who would not easily master the lesson and there will be learners with learning difficulty which needs more attention and intervention. Individual pacing also helps address different learning styles.

Hence, this study will be conducted to evaluate whether the Asynchronous Learning Approach through the division unified learning materials has positive effect to the performance of the Grade 2 pupils in Mathematics.

This study was conducted in order to evaluate the Effectiveness of Asynchronous Learning Approach through the Division Unified Learning Materials to the Performance of the Grade 2 pupils in Mathematics. The findings of the study were the bases for the proposed Enhancement Plan.

Specifically, the study sought to answer the following questions:

1. What is the pre-test performance of the grade 2 pupils in Mathematics before the integration of the Division Unified Learning Materials in the delivery of the most essential learning competencies in the 1st grading?

2. What is the posttest performance of the grade 2 pupils in Mathematics after the Division Unified Learning Materials in the delivery of the most essential learning competencies in the 1st grading?

3. Is there a significant difference between the pretest and posttest performance before and after the integration of Division Unified Learning Materials in the delivery of the most essential learning competencies in Teaching mathematics subject for the 1st grading?

4. What enhancement plan can be proposed on the findings of the study?

Statement of Hypothesis:

Ho : There is no  significant difference between the pretest and posttest performance before and after the integration of Asynchronous Learning Approach Division Unified Learning Materials in the delivery of the most essential learning competencies  in Teaching mathematics subject for the 2nd grading.

## II.     Methodology

*Design.* This study utilized the Quasi-Experimental research design to determine the Effect of Synchronous Learning Approach through the unified learning materials to the Performance of the Grade 1 pupils in the delivery of the most essential learning competencies in 1st grading period in mathematics subject. The main local of the study is the Ipil Central  School which is located under the Ormoc City District 2 in the Division of Ormoc City. In the aforementioned locale where the study was conducted,, the main respondents that were chosen by the teacher-researcher was the Grade 2 pupils which was underwent evaluation prior to the integration of the intervention in the delivery of the different learning topics as well as  after the abovementioned intervention was done. During the conduct of the assessment, the gathering tool or tools from particular examinations were carefully validated by the teacher-researcher to monitor  the pretest and posttest performances of the respondents. This study is mainly focus on the results of the different tests to gather data: The pretest performance of the Grade 2 pupils before the implementation of the Synchronous Learning Approach through the use of the different Division Unified Learning Materials, The Posttest performance of the Grade 2 pupils after the implementation of the Synchronous Learning Approach through the use of the different Division Unified Learning Materials, as well as the significant difference of the pretest and posttest before and after the implementation of the Synchronous  Learning Approach through the use of the different Division Unified Learning Materials  in the delivery of the most essential learning competencies in teaching Mathematics for the First Grading Period. In the Quasi- experimental research design, the researcher  prepared different Unified Division 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 Intervention was taken based on the findings of the study as well as on the recommendations in order to improve the learning development of the learners.

*Sampling*. There are 30 who are included in the study. 14 respondents of the study were Males and 16 were Females and the primary means of reach is through face to face set up in  the gathering of data. Another way of contacting them are through cell phones of their respective parents. Universal Sampling technique was employed by the teacher-researcher.

*Research Procedure*. The researcher prepared the research design and tools utilized in the study. The different tools prepared by the Teacher-researcher were the ff: validated Summative

Test Questionnaire in Mathematics subject from the Self Learning Modules that were focused on the different competencies in the 2$^{nd}$ grading period. The test 20 items questions were used before the intervention were given to the pupils. After one month of the intervention or 4 weeks of the implementation, posttest was given to the grade 2 pupils with the same test questionnaire based from the different learning competencies in Mathematics following the Table of Specifications . Prior to the preparation of the tools prepared which were used by the teacher-researcher in determining their performances before and after the integration of the intervention together with the different Synchronous Learning materials through the use of the different Division Unified Learning Materials The Approval and recommendation from the Office of the Schools Division Superintendent being the Division-wide Coach of the study, 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. 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 under their care. 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 Intervention Plan was prepared.

*Ethical Issues*. The right to conduct the study was strictly adhered through the approval of the Schools Division Superintendent being to the Coach of the study as well as to the Assistant Schools Division Superintendent , to the Public Schools District Supervisor and to the School principal for proper asking of permission before conducting the study. Orientation of the respondents both the learners and the teachers including the School Principal was done.

*Treatment of Data*. The Effectiveness of Synchronous Learning Approach through the use of the different Division Unified Learning Materials to the Performance of the Grade 2 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 2 Pupils in Math**

| Score Range | Description | Experimental Group | |
|---|---|---|---|
| | | Frequency | % |
| 17-20 | Excellent | 0 | 0 |
| 13-16 | Very Good | 4 | 13 |
| 9-12 | Good | 18 | 60 |
| 5-8 | Fair | 8 | 27 |
| 1-4 | Poor | 0 | 0 |
| Total | | 30 | 100 |
| Weighted Mean | | 9.80 | Good |

Table 1 shows the Pretest Performances of the Grade 2 learners in Mathematics utilizing the different division Unified Learning Materials which was delivered during the second grading period. The results of the performance of the Grade 2 learners in Mathematics us based on the different process and procedures that they have learned from the past and considered those things as their stock knowledge before they will experience the new innovations to be introduced by the learners.

Based from the results shows in table 1 on the pretest performance of the Grade 2 Leaners in Mathematics subject before the delivery of the different learning competencies for the second grading period, In the excellent level of performance which caters the scores ranging from 17-20, considering that the highest number of item is 20 items, it was found out that there are none of the Grade 2 learners belong to this level of performance which also considers as the highest class limits. In the very good level of performance which caters the different learning skills of the grade 2 learners in Mathematics which the score ranging from 13-16, there were only 4 total number of respondents who took the pretest examination or 13 percent out from the 20 total number of respondents or 100 percent overall percentage of respondents who were given the pretest examination. On the other hand, in the good level of performance having the score ranging from 9-12 which was resulted to the identification of the class limits based on the scores gathered from the identified respondents, there were 18 total number of respondents or 60 percent out of the 100 overall total number of respondents who took the pretest examination and in this level of performance also identified as the highest number of respondents belong to this level of performance, on the fair level of performance having a score ranging from 5-8, it shows that there are still learners who are belong to this 2nd to the bottom level of performance which has an equivalent percentage of 27 percent or 8 out of 30 total number of respondents who took the pretest examination.

The results in table 1 on the pretest performance of the grade 2 learners in Mathematics which was based on the different learning competencies before the integration of the different division unified learning materials to the least learning competencies of the Grade 2 pupils in Mathematics from the different learning competencies in the second grading period which consist of not more than 8 competencies for the entire grading period of teaching and learning. Based from the results in table implied that the grade 2 learners have gained enough knowledge already regarding the different competencies in Mathematics presented by the researcher. They already acquired good performance from the different topics presented because there are tendencies that they have minute idea on how to learn the different learning competencies in the aforesaid subject. In other words, considering that these type or learners really wanted to see for themselves the different learning materials and learn from them even if they are on their own pace through the effort and guidance of their guidance and or parents, thus, they can really gain knowledge out of it which means that if the parents or guardian has the ideal to help the learners learning the subject specially Mathematics subject, they will really fully understand the value of learning the different topics to be presented. Furthermore, considering that the learners also really expose to the different learning materials such as technology-based learning materials e.g. video lesson, power point presentations, SIM and many more that the main tasks are to let the learners expound their ideas of the topics and help them increase their motivation in learning the topics, there are big possibilities that through the different aforementioned learning strategies, learners really learn the different topics thus, gaining a good level during the validation even before the intervention of the aforementioned innovation. Moreover, we need also to consider based from the results, Those students who are belong in the fair level of performances on how to improve their performance in the pretest in Mathematics subject , thus the researcher is considering and with high hopes that the Division Unified Learning Materials can really addressed and improved the identified least learned competencies from the Grade 2 learners.

**Table 2**
**Post Test Performance Of Grade 1 Pupils In Mathematics**

| Score Range | Description | Experimental Group | |
|---|---|---|---|
| | | Frequency | % |
| 17-20 | Excellent | 26 | 87 |
| 13-16 | Very Good | 4 | 13 |
| 9-12 | Good | 0 | 0 |
| 5-8 | Fair | 0 | 0 |
| 1-4 | Poor | 0 | 0 |
| Total | | 30 | 100 |
| Weighted Mean | | 18.50 | Excellent |

Table 2 shows the Posttest Performances of the Grade 2 learners in Mathematics utilizing the different division Unified Learning Materials which was delivered during the second grading period. The results of the posttest performance of the Grade 2 learners on the different topics in Mathematics are based on the things or different ideas that they have learned after the learners learned the topics in the second grading competencies which were delivered by the teacher integrating the division unified learning materials.

Based from the results shows in table 2 on the posttest performance of the Grade 2 Leaners in Mathematics subject after the delivery of the different learning competencies for the second grading period with the integration of division unified learning materials to address and improved the identified least learned competencies. In the excellent level of performance which caters the scores ranging from 17-20, considering that the highest number of item is 20 items, it was still found out that in this level of performance, this is consider as the highest level of performance having the highest percentage of learners belong to this level, in which there are 26 total number of the Grade 2 learners or 87 percent out of the 30 total number of respondents being tested. In the very good level of performance which caters the different learning skills of the grade 2 learners in Mathematics which the score ranging from 13-16, there were only 4 total number of respondents who took the pretest examination or 13 percent out from the 30 total number of respondents or 100 percent overall percentage of respondents who were given the posttest examination based from the 20 total number of items given to them which was the same number of items given in the pretest. On the other hand, in the good level of performance having the score ranging from 9-12, the fair level of performance having a score ranging from 5-8, and poor level of performance which has a score ranging from 1-4, none from the aforementioned level of performances our respondents have belong with zero percentage of results from the posttest being tested based from the identified learning competencies in Mathematics.

The results in table 2 on the posttest performance of the grade 2 learners in Mathematics which was based on the different learning competencies after the integration of the different division unified learning materials to address the identified least learned competencies of the Grade 2 pupils in Mathematics from the different learning competencies presented in the second grading period which consist of not more than 8 competencies for the entire grading period.

Based from the results in table 2 implied that the grade 2 learners have gained excellent performance during the delivery of the most essential learning competencies for the second grading period during the teaching and learning process of the teacher and learners. Which means that the researcher have already found significant findings of the performance based on the utilization of the Unified division based learning materials in the delivery of the different topics given for almost 1 month if sharing the intervention to the identified learners. They already acquired excellent performance from the different topics presented because they really loved and motivated to learn because of how the learning materials are being crafted. In other words, considering that these type or learners really learning the topics and learn from them even if they are on their own pace through

the effort and guidance of their guidance and or parents its really add up to the learning that they have gained , thus, aside from the things that they have  really gain knowledge from their parents or guardian, , they really fully understand the value of learning the different topics presented through the unified division based learning materials.

The learners shows enthusiasm in learning the topics because after the first  exposure  to the different division unified learning materials the learners can already expound their ideas of the topics and help them increase their performance in every topics presented by the teachers. There are big possibilities that when the teacher really exposing the learners to the identified learning materials in the delivery of the most essential learning competencies in Mathematics for the second grading.  It is quite amazing for the learners l that they have really learn the different topics considering that the subject thought is challenging on the part of the learners as well as the teacher.

**Table 3**
**Test Of Difference Between The Scores In The Pre-Test And Post-Test**
**Of Grade 2 Pupils In Mathematics**

| Groups | Test Scores | | Computed T | Critical T | Decision | Interpretation |
|---|---|---|---|---|---|---|
| Experimental | Pre Post | 9.80 18.50 | 4.238 | 1.721 | Reject Ho | Significant |

Table 3  presents the test of difference between the test scores in the pretest and posttest in Mathematics of the Grade 2 learners Before and After integration of the different unified Division-based learning materials in the delivery of the most essential learning competencies for not more the 4 weeks in the implementation of the identified intervention. In this table, it can be gleaned that in the pretest performance of the grade 2 learners which is equal to 9.80  which is lower than the posttest performance which is equal to 18.50 which resulted to the results in the computed t value of 4.238 and critical t value of 1.721. So, the null hypothesis which states that there is no significant difference between the pretest and posttest performance of the grade 2 learners in Mathematics before and after the integration of unified division-based learning materials using is rejected.

The result of this study which focuses on the significant difference in the pretest and posttest scores of the Grade 2 learners before and after the utilization of the Unified Division Based unified learning materials crafted by subject and curriculum set of experts  in Mathematics implies that the new intervention is significantly effective  in improving the performance of the grade 2 learners considering that the pretest scores of the learners  is lower than the posttest scores which means that even though the learners have already knowledge or ideas and passed  more main tasks and they can expound their ideas of the topics and help them increase their motivation in learning the topics and even though they are gaining a good level during the validation even before the intervention of the aforementioned innovation still they need another learning intervention that

could increase more their different learning tasks and performances and that was really happening after the learners really gained learning from the identified intervention which means that the intervention is really effective learners have gained excellent performance during the delivery of the most essential learning competencies for the second grading period during the teaching and learning process of the teacher and learners. Which means that the researcher have already found significant findings of the performance based on the utilization of the Unified division based learning materials in the delivery of the different topics given for almost 1 month if sharing the intervention to the identified learners. Furthermore, the intervention is really effective in improving the performance of the learners because they already acquired excellent performance from the different topics presented because they really loved and motivated to learn because of how the learning materials are being crafted. Moreover, the learners shows enthusiasm in learning the topics because based from the exposure of the learners to the different division unified learning materials the learners can already expound their ideas of the topics and help them increase their performance in every topics presented by the teachers. There are big possibilities that when the teacher really exposing the learners to the identified learning materials in the delivery of the most essential learning competencies in Mathematics for the second grading.

## IV. Conclusion

Based on the findings of the study, it showed that the Division Unified Learning Materials using in addressing the different topics in Mathematics particularly on the identified least learning competencies are significantly effective in improving the performance of the Grade 2 learners on the different learning competencies. Moreover, utilizing or integrating the intervention in the delivery of the most essential learning competencies in teaching the topics in Mathematics through the use of division unified learning competencies is highly suggested to be utilized and shared to other teachers teaching Mathematics subject.

## V. Recommendations

1. The School Learning Resources Team should be crafted School Unified Learning Materials to be submitted to the Division Learning Resource Team for quality assurance of the Materials and soon for approval and utilization.

2. The Division Unified Learning Materials approved by the Division Learning Resource Team should be utilized by the Grade 2 teachers handling Mathematics in order for them to be more familiar on the utilization of the learning materials aside from the different materials identified.

3. The CID personnel headed by CID Chief and Education Program Supervisor in Mathematics should monitor the teachers teaching utilizing the Division Unified Learning

Materials on how they are utilized on the different learning activities given to the learners specially the mathematics subject.

4. Each DFTACT Team should also monitor on the utilization of the aforementioned learning materials and give Technical assistance to those teachers who are struggling in the delivery and utilization of the learning materials in order for them to address the learning gaps between the teachers and to the learners.

5. The District Supervisor and the School Principal should check the activities during LAC Sessions and In-Service Training and focus their activities on how to improved or enhanced the learning materials which will focus on the least learned competencies in Mathematics as well as on how to improve learners learning motivation.

6. Furthermore, the researcher allows future researchers to conduct the same study to validate the results of the study whether the Division Unified Learning Materials focused on Grade 2 level in Mathematics subject really effective in increasing the skills or performance.

In addition, I want to sincerely thank the parents of my Grade 2 pupils for fostering and assisting their children in their academic achievements. Their involvement had a significant influence in the success of my research.

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### AUTHOR'S PROFILE



### MARIA CRISTINA O. ASENSI

The author is born on March 20, 1987 at Talibon, Bohol Philippines. She currently lives at Punta, Ormoc City, Leyte together with her husband and two children. She finished her Bachelor of Elementary Education at Visayas State University. She is currently finishing her Master's degree of Arts in Education major in Elementary Education at Western Leyte College of Ormoc City.

She is currently a teacher II in Department of Education and Grade 2 Teacher in Ipil Central School, Ormoc City, Leyte, Philippines. She has 13 years of experience in the teaching profession. She attended a variety of regional and division training sessions and seminars during her thirteen years in service. She is also one of the writers who developed the Regional Test Item Bank (specifically in mathematics), the Division Local Heritage Theme Matrix, and an identified writer and evaluator in Araling Panlipunan subject.