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Numeracy Skills Performance of Grade 6 Pupils in Modular Distance Learning

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***Abstract*—** This study aimed to determine the Numeracy Skills Performance of Grade 6 Pupils using Modular Distance Learning (MDL) at Gimaloto Elementary School in Sorsogon West District for School Year 2021-2022. This study concluded that the numeracy skills performance of the pupils is very good in basic mathematics and interpretation of numbers whereas satisfactory in problem solving. The pupils are mostly challenged with modular distance learning in numeracy especially problem solving. The action plan was proposed in order to improve the numeracy skills performance of the pupils. It was recommended that the pupils may be provided additional exercises and drills that may improve their numeracy skills performance in problem solving. Also, the teachers may be equipped with strategies on how assist pupils on this aspect. The challenges encountered by the pupils in numeracy be addressed and given priority by the teachers and school heads. The learning activity sheets may be forwarded to the concerned authorities so as it will be further reviewed and evaluated before its adoption and implementation. Further study may be done that may include other schools in order for the scope to be widened and if possible, the inclusion of other variables not covered.

***Keywords*—** basic mathematical operations, interpretation of numbers, modular distance learning, numeracy, problem solving.

I. INTRODUCTION

Numeracy is the understanding of how the numbers are used in the real world and being able to apply it in our daily lives. Numeracy is the one needed by students or learners in order for them to use mathematics in a wide range of circumstances since it gives them the knowledge, skills, behaviors, and standing in life. Numeracy is important as it takes part in the decision making of the learners and is strengthened as they progress (Piaget, 1968) through their years of schooling during the teaching-learning process exposing them to the different mathematical skills such as understanding, fluency, problem solving and reasoning. These skills allow the students or learners to respond in any stimulus (Thorndike, 1922) involving mathematics in making decisions and solve problems effectively (UCAA, 2017).

The numeracy skills of the learners are assessed physically in the learning environment which is in the school. It is assessed through the standardized tests administered by the teachers to identify the level of numeracy skills a student has.

Now, an unprecedented event has emerged. The epidemic caused by the highly contagious virus which is the Coronavirus-19 or COVID-19. The schools closed down and the educational activities have been halted. This led to the implementation of different learning modalities in assessing the performance of the learners which is not the same as the traditional method of assessment.

In addition, different countries from the globe are adjusting to the disruption in education made by the COVID-19 pandemic. The Educational Global Practice of the World Bank Group's (WBG) Education Technology (EdTech) team have worked together with the Ministries of Education and multilateral organizations in providing guidance and technical support to effective implement their remote learning strategies which include the use of Radio-Based Instructions, TV learning program, mobile learning, and audio-learning guides across the five countries: Brazil, Kenya, Nigeria, Sierra Leone, and Peru (World Bank, 2021).

Furthermore, PISA (2018) have evaluated the Philippine students of 15 years of age wherein they scored lower in reading mathematics and science than those 79 other countries. The Philippines scored the lowest in the OECD with an average of 90%. Also, none of the countries other than the Philippines and Dominican Republic scored low in reading. Moreover, the Philippines is second to the last country that performed in a low level in math and science.

In light of the Global Pandemic which was caused by the COVID-19, Philippines have also imposed the guidelines for the confirmation of learning embodied in the DepEd Order no. 18 s. 2020 which is the Policy Guidelines for the Provision of Learning Resources in the Implementation of the Basic Education Learning Continuity Plan. It stated that all of the children have the right to quality education and that education must be free to all elementary and high school levels in which the learning resources must correspond to the needs of the learners as well as the community (1987 Philippine Constitution, Article XIV, Section 1 and 2). Under it is the D.O. no. 21 s. 2019 that embodies the Flexible Learning for the accessibility of education for the students.

In addition, DepEd (2020) conducted a survey for the alternative learning delivery modes to be implemented in the educational institutions. It had shown that Modular Distance Learning is the most preferred learning modality among the 5 indorsed modalities that had 8.8 million of choice (Rappler, 2020).

Modular Distance Learning is the use of individualized instructions by means of the self-learning modules in print or digital structure (DepEd, 2020). It can be accessed through the different educational platforms. The output of the learners can be submitted online or be submitted to the teacher in their school through the answered printed materials. With this process, the education personnel cannot assess properly the performance of the learners in their outputs especially in the mathematics subject. Learning Activity Sheets in Math specifically to the learners in the Elementary Level they need assistance from the more knowledgeable others which was emphasized on the study of Vygotsky (1934) to answer the modules, making the assessment for the Numeracy Skills Performance of the learners not reliable.

Relatively, Bayucca (2021), presented in her study the challenges encountered by the parents and learners. She found out that the learners find it difficult in answering their self-learning modules due to the lack of reference materials, limited guidance by their parents because of their limited knowledge on the content of the SLMs, and the difficulty in understanding the medium of instruction used in modules which is the English Language. Moreover, some of the parents answer the modules of their children jeopardizing the learning of the pupils since they are not able to learn the needed skills embodied in the modules (Anzaldo, 2021) making the assessment of numeracy skills in math not reliable since the performance and written outputs are the ones needed in the assessment (D.O. # 31 s. 2020).

Furthermore, when it comes to remote learning or virtual learning, the Philippines ranked last in reading and second to the last in mathematics as well as in Science among the 79 countries in the Program for International Student Assessment (Magsambol, 2020). The pandemic has truly affected the educational system of our country.

In the two years duration of COVID-19 Pandemic, the government and educational institutions have implemented different measures to ensure quality education and that learning is continuous. The education sector gave different seminars to give effective and efficient self-learning modules to the students/learners through zoom and Google meetings, but, there are still SLMs that weren't checked thoroughly because of the errors found in it. Teachers were not also properly trained in developing the said learning resources.

The dilemma in which the education sectors including the City of Sorsogon faced such an unexpected event. The Schools Division of Sorsogon City particularly in Sorsogon West District has conducted different ways or interventions such as Radio-Based Instruction and Video Lesson to address the declining mathematical performance of the learners.

In the same manner, the implementation of the said interventions were not applicable to the learners who have no gadgets or internet connectivity that heavily relies on the instructions in the self-learning modules making it more challenging to identify the level of numeracy skills of the learners.

With this assumption, the researcher was motivated to venture on a study which has looked into the Numeracy Skills Performance of Grade 6 Pupils in the Modular Distance Learning. Since the teachers cannot determine the level of their skills in numeracy. This is also to assess not only the self-learning modules in math for their quality and effectiveness but also on the level of mastery that the grade 6 pupils have attained in numeracy using the modular distance learning. Moreover, in determining the challenges that the learners encountered that made their performance in numeracy low.

Generally, this study determined the Numeracy Skills Performance of Grade 6 Pupils using Modular Distance Learning (MDL) at Gimaloto Elementary School in Sorsogon West District for School Year 2021-2022. Specifically, it (1) determined the numeracy skills performance of Grade 6 pupils along problem solving, interpretation of numbers, and basic mathematical operations; (2) identified the challenges encountered by the pupils in using the modular distance learning in numeracy; and (3) proposed learning activity sheets based on the results of the study.

II. METHODOLOGY

This study determined the numeracy skills performance of Grade 6 pupils in Modular Distance Learning in Sorsogon West District. The study used the Descriptive Method of research since it is used to describe the numeracy skills performance of the target sample. Also, a teacher-made test was used in gathering the data from the Grade 6 pupils of Gimaloto Elementary School. Similarly, the performance of the learners in the three numeracy skills that the study determined which were the problem solving skills, interpretation of numbers and basic mathematical skills were measured through the transmuted grade prescribed by the DepEd Order no. 8 s. 2015. Moreover, the study conducted an unstructured interview to validate the challenges encountered by the pupils in using modular distance learning in numeracy.

Similarly, the respondents were the 18 Grade 6 pupils of Gimaloto Elementary School which were purposively chosen. The statistical tools employed were the frequency and percentage.

The primary sources of the data were the 18 Grade 6 pupils of the Gimaloto Elementary School in Sorsogon West District. They were purposively chosen since their numeracy skills have to be determined. Similarly, these pupils were subjected to the mathematical instruction delivered by the teacher in which the performance was measured. The respondents were chosen generally since the selected school only has one section consisting of 18 grade 6 pupils. Also, they were chosen to determine their level of mastery throughout their years in the elementary as the upcoming grade 7 students in secondary level. The study determined the least mastered skills of the learners in numeracy. This was done in determining the learning competency or skills needed to be address for the construction of Learning Activity Sheets that correspond to the learners' need.

This study used a teacher made test in which the sequence followed the research questions. Initially, the researcher crafted the test with the assistance of the adviser. The preliminary test covered the numeracy skills performance of the Grade 6 pupils along problem solving, interpreting of numbers and basic mathematical skills (Addition, Subtraction, Multiplication, and Division.

In addition, the preliminary test has been subjected to the evaluation of the panel members with the table of specification for comments and suggestions. Then, the test has been revised with the incorporated comments and the final form has been prepared. A dry run of the revised instrument has been administered to the Grade 6 pupils in Barayong Elementary School and after it, an item analysis was conducted. Moreover, a secondary dry run has been conducted and the reliability index was computed using the Split Half Method-Spearman-Brown Formula until the test was finally valid in which it has only 30 items from the beginning to 45 items. The reliability of the test was 0.96 indicating that it is valid. The final form of the test has been prepared that was presented to the adviser and panel members for approval and administration to the target respondents

With the test ready for administration, the researcher has sought the approval of Schools Division Superintendent by submitting a letter of request which had been personally delivered to the office. Then, the same activity has been done with the school heads of the schools in the covered district for the implementation of the said study.

In getting the data for the challenges that were encountered by the learners in using the modular distance learning in numeracy, the researcher asked the adviser of the respondents of their residency to conduct a home visitation. The researcher then conducted home visitations for 2 consecutive days in which only 12 out of the 18 respondents were interviewed due to the proximity of the residences.

Similarly, the researcher has personally handed in the instrument to the teacher of the prospective respondents in his/her school and has been given in order for them to accomplish the test. Due to the time allotment of the mathematics subject in the preferred school, the administration of test was halted and continued the next day. The researcher retrieved the first part of the test papers after the first administration to ensure the validity

of the test. The accomplished test has been retrieved by the researcher with the hope of attaining a 100 percent retrieval rate.

The collected data from the respondents have been subjected to various statistical analysis depending on its nature and level of measurement. The Numeracy Skills Performance of Grade 6 in Modular Distance Learning has been treated using frequency and percentage. The tools were used to determine the mastery level of learners in problem solving, interpretation of numbers and basic mathematical skills by collecting data of the range of mastery in the mentioned numeracy skills and change it to percentage.

Similarly, the DepEd Order No. 8 s. 2015 was the basis in analyzing the numeracy skills performance of the learners. The scale consisted of below 75 (Did Not Meet Expectations); 75-79 (Fairly Satisfactory); 80-84 (Satisfactory); 85-89 (Very Satisfactory); and 90-100 (Outstanding).

In addition, the data collected on the challenges encountered by the learners in using modular distance learning in numeracy were gathered through unstructured interview to the learners. Moreover, it has been the basis in designing the learning activity sheets that are correspondent to the learners' need.

III. RESULTS AND DISCUSSION

1. Numeracy skills performance of pupils

This section presents the numeracy skills performance of Grade 6 pupils along Problem Solving, Interpretation of numbers, and Basic Mathematical Operations using transmuted grades, frequency count and percentage.

Table 1A. *Numeracy Skills Performance in Basic Mathematics Skills*

Grade Interval	f	%	Interpretation
90-100	1	6	Outstanding
85-89	9	50	Very Satisfactory
80-84	8	44	Satisfactory
Total	18	100	
Mean performance	85		Very Satisfactory

Basic Mathematics skills. The table presented the numeracy skill performance of respondents in basic Mathematics skills which 18 students took the exam. Using the transmuted grade, students almost got half of the sample with 80-84 performance and interpreted as satisfactory. 8 of the students also got 85-89 with very satisfactory performance. Only one student got an outstanding performance. The overall performance of the learners in Basic Mathematical Skills is 85% which is interpreted to have a very satisfactory performance.

The results may mean that students garnered performance from the bracket of 80-84-85 and 85-89. Some students now may be less focused on academic performance and they focus on some activities like computer games which they can find satisfaction and comfort. Regardless of gender most of the students might have focused on Mobile legends (ML), Clash of Clans (COC), and other online games. It may only imply that students now are having so many times spending in online games that's why their academic performance may be at risk.

Video game addiction is defined as impulse control disorder, which does not involve the use of an intoxicating drug and is similar to pathological gambling. Also, it is also referred to as video game overuse, pathological or compulsive use of computer games and video games (Greenfield & Young, 2009). Due to excessive use of computer games, there may be an effect on personal traits like anxiety, sensation seeking, neuroticism, and aggression which might be the symptoms that a person is developing of gaming addiction (Mehroof, et al. 2010).

The brain is also affected in computer addiction; regions of the brain associated with cravings in substance abuse also appear to be activated by in gaming addicts when they view images of video games (Ko, C et al. 2010). There are two types of gaming, "excessive gaming" and "addictive gaming" these two types of gaming is different from each other; the difference between "excessive gaming and "addictive gaming" is that two gamers may play for an identical number of hours each day, but their psychological motivation and the meaning that gaming has within their lives can be very different.

Gaming addiction may be defined by how much the negatively impacts other areas of life, not by how much time is spent playing (Griffiths, M et al.2010). In a volunteer sample, 41% of online gamers acknowledged that they use gaming as an escape. In the same sample, 7% were viewed as "dependent". These gamers might possessed several behavioral attributes that are related to more well-established forms of addiction (e.g., mood modification, tolerance, & relapse) (Hussain et al. 2009). Most online gamers are male. Among male gamers, more severe online gaming addiction may be correlated with older age, lower self-esteem, and lower dissatisfaction with daily life. This relationship did not hold true for female gamers (Ko et al. 2005).

Excessive use of technology is relatively rare. Compared to females, males may likely to develop managing addiction. Boys are more likely to play aggressive or violent games while girls are more likely to play platform and puzzle games (Griffiths, 2008). In Germany, 1.5–3.5% of teenage internet users show signs of gaming addiction. Gaming addiction is associated with higher rates of anxiety and depression, and poorer academic performance (Peukert et al. 2010). Computer gaming addiction may be positively correlated with achievement motivation, sensation-seeking, a positive evaluation of one's intelligence, and a negative evaluation of one's skills in an interpersonal relationship (Zheng et al. 2006).

Interpretation of numbers. Table 1B presented the numeracy skills performance of respondents in the interpretation of numbers which half of the students got a satisfactory performance from the bracket of 80-84. But 44 percent of the students garnered very satisfactory performance. The mean performance of the respondents in interpretation of number is 85 percent which is interpreted as very satisfactory. This may mean that students now lack of study habits since only one got an outstanding performance.

Table 1B. *Numeracy Skills Performance in Interpretation of numbers*

Grade Interval	f	%	Interpretation
90-100	1	6	Outstanding
85-89	8	44	Very Satisfactory
80-84	9	50	Satisfactory
Total	18	100	
Mean performance	85		Very Satisfactory

It implies that academic achievement occupies a very important place in education as well as in the learning process. It has become an index of a child's future in this highly competitive world. It has been one of the most important goals of the educational process. It is also a major goal, which every individual is expected to perform in all cultures. Academic achievement is a key mechanism through which adolescents learn about their talents, abilities and competencies which are an important part of developing career aspirations. One of the most important outcomes of any educational set up is the achievement of the students. Depending on the level of achievement, individuals are characterized as high achievers, average and low achievers.

This study supported by Illahi and Khandi (2015)in their study was undertaken to study the academic achievement and study habits of male and female college students of district Pulwama (J and k).The sample for the study was 410 including 193 male and 217 female college students .which was further divided into different groups of rural-urban dichotomy. For this purpose descriptive survey method was used. The college students were in the age group of 19 - 21 years. The sample has been selected on the basis of random sampling technique. Palsane and Sharma Study Habits Inventory (PSSHI) and Aggregate marks percentage obtained by the sample subjects in their first and second-year examinations were collected from the official records of the colleges. The average of these percentages for each sample subject was used as a measure of academic achievement and was administered for the collection of data. The result of the study highlights that female college students have high academic achievement as compared to male college students. On the other hand, it has been found that the study habits of college female students are slightly higher than of the males. The two groups under study do not show any significant difference in their study habits.

Problem solving. Along with the problem-solving which is shown in Table 2C, the students almost garnered from a bracket of 80-84 and interpreted it as satisfactory. 12 out of 18 got a score of satisfactory.

Table 1C. Numeracy Skills Performance in Problem Solving

Grade Interval	f	%	Interpretation
90-100	0	0	Outstanding
85-89	5	28	Very Satisfactory
80-84	12	67	Satisfactory
75-79	0	0	Fairly Satisfactory
Below 75	1	5	Did not meet expectation
Total	18	100	
Mean performance	83		Satisfactory

One of the respondents got below 75 which is interpreted as did not meet expectation. The overall mean performance of the respondents in problem solving is 83 percent which is interpreted as satisfactory. This may mean that students were not knowledgeable about the skills in problem-solving. This implies that the problem-solving performance of students depend on their attitudes and beliefs. As it is not easy to change attitudes, we aimed to change the relationship between problem-solving performance and attitudes with a training program. The training was based on the assumption that self-generated external representations support the problem-solving process. Furthermore, we assumed that students who are encouraged to generate representations will be successful, especially when they analyze and reflect on their products. A paper-pencil test of attitudes and beliefs was used to measure the constructs of willingness, perseverance, and self-confidence. We predicted that participation in the training program would attenuate the relationship between attitudes and problem-solving performance and that non-participation would not affect the relationship. The results indicate that students' attitudes had a positive effect on their problem-solving performance only for students who did not participate in the training.

This claim was supported by Pentang, Ibañez, Subia, Domingo, Gamit, Pascual (2021) The study determined the problem-solving performance and skills of prospective elementary teachers (PETs) in the Northern Philippines. Specifically, it defined the PETs' level of problem-solving performance in number sense, measurement, geometry, algebra, and probability; significant predictors of their problem-solving performance in terms of sex, socio-economic status, parents' educational attainment, high school graduated from and subject preference; and their problem-solving skills. The PETs' problem-solving performance was determined by a problem set consisting of word problems with number sense, measurement, geometry, algebra, and probability.

Similarly, a mixed-method research design was employed. Senior PETs purposively served as a sample where they mostly preferred to teach other subjects than mathematics. PETs who preferred math performed satisfactorily, while prospective teachers who opted for other subjects performed unsatisfactorily. The PETs' unsatisfactory output indicates the need for remediation to advance the mathematical material skills and enrich the problem-solving abilities of these primary schools' potential teachers. Besides, results showed that subject preference strongly affected and predicted the problem-solving success of the PETs. PETs who preferred to teach mathematics performed significantly better than their counterparts; hence, mathematics as a field of specialization in the Bachelor of Elementary Education program may be considered by teacher education institutions. Further, most PETs displayed lack of problem-solving skills; thus, a Problem-Solving course is recommended for them.

2. Challenges encountered by the pupils in using the modular distance learning in numeracy

The challenges that were met by the pupils in accomplishing their learning activity sheets or modules in math especially in improving their numeracy skills are considered challenges that they have encountered in using modular distance learning in numeracy. The researcher have conducted unstructured interview with the respondents which are the grade 6 pupils of Gimaloto Elementary School. Only 12 out of 18 respondents were interviewed due to the proximity of their location.

Theme 1: Difficulty in understanding the contents of the module

Eight of the 12 respondents in this study stated that they do not fully comprehend the content of the modules or learning activity sheets in Math. They found it hard in understanding the words in the modules especially in the problem solving activities. They were not able to understand the words in the modules because it was not

define from the introduction of the lesson and is considered as unknown words for them. It is important for the learners to master their comprehension skill which is emphasized by Kaino (2010) to understand the content of the modules. They sought help from their parents to guide them in answering the modules. Parents are considered as the facilitator of learning of their children while using the modular distance learning. Parents are the most important factor in this learning delivery mode since the teachers are not present to facilitate the learning of the learners. The parents are considered as the more knowledgeable others (Vygotsky, 1934) in helping their children's education during the pandemic. The different mathematical words or phrases seem to be unknown to the learners since they do have the foundation and information about it from their previous grade level. Anjhon shared the challenges he had encountered in answering the problems in the activities of math modules below.

"Ang iba po ma'am na mga salita didto sa problem dili ko masabutan bisay kaya isakit po ako minsan magsimbag po sa math" (I cannot understand some of the words in the problem in math that is why I find answering the activities in math hard).

"Dili ko po aram ma'am didto sa saro na module kung arin po didto ang whole number, fraction nan ang mixed number. Sisakit man po ako aramon kung nano na mga simbolo ang ibubutang parehas san kwarta nan idto po na sa rate." (I don't know which one is the whole number, fraction or mixed number from one of the modules. I also find it hard on what symbols I should beside the numbers like for money and for the rate.)

"Masakit po intindihon ma'am ang iba na laog san modules kay English po kaya ang gamit. Amu po ang nakapasakit sa akon sa pagsimbag san modules sa math nan ang iba po na yaadto sa simbagan wara man po didto sa modules." (It is hard to understand the other contents of the modules because it uses the English Language. It is the reason why it is for me to answer the modules in math and some of the content in the activities were not included in the modules.)

"Diyot lang po ma'am ang nasisimbagan ko po sa modules kay masakit po". (I was only able to answer few of the activities in the modules because it is difficult.)

"Masakit po ma'am magsimbag sa modyul nin math kay ang iba po na hapot dili ko masabutan.(It is hard to answer the module in math because I cannot understand some of the questions in it.)

"Laen ko po aram ma'am ang iba na leksyon didto sa modyul. Masakit po simbagan kay dili pa man po idto natuturo sa amon." (I don't know some of the lessons in the module. It is hard to answer it because it wasn't yet taught to us.)

"Diyot lang po ang nasimbagan ko sa modyul kay ang iba po dili ko man aram. Isakit po ako intindihon ang pag divide nan pag minus." (I was only able to answer few of the activities in the module because I do not know some of them. It is hard for me to understand how to divide and subtract.)

"Masakit po simbagan ang modyul kay damo po ang dili ko aram simbagan. Pag dili ko po aram nagpapabulig na lang po ako kay papa. Diyot lang po ang nasisimbagan ko tapos ang iba dili na po kay kasakit po." (It is hard to answer the modules because there's a lot that I don't know to answer. If I don't know, I just ask for help from my father. I was only able to answer few and then I did not answer the other activities because it is difficult.)

The content of the modules must be responsive to the needs of the learners and should be constructed according to their level of skills and ability to make the learning of the learners' progressive (Greyling, Huntley, Reedy and Rogaten, 2020). It was also emphasized by Columbano (2019) that the development of appropriate modules in math helped the learners in improving their mathematical skills.

Theme 2: Lack of Examples

The lack of examples in answering each activity in mathematics modules is one of the challenges encountered by the learners which were mentioned by all of the respondents. The learners found it hard answering the modules in math because of the limited source of information about the lesson in the module and Anzaldo (2021) emphasized that the lack of references greatly affects the learning of the learners resulting to low performance in math. John Aldrin shared the challenges he had encountered which was the same with the other 6 respondents (Rica, Althea, Anjhon, John Andrei, Efren and Rhean).

"Masay po ma'am magsimbag po sa addition nan subtraction. Ang multiplication ayos lang kaso po pag-abot sa division isakit po ako kay kadiyot san mga examples na ingpakita sa modules". (It is easy to answer the activities for addition and subtraction. In multiplication it is okay but when it comes to division, it is hard for me to answer the activities because there are only few examples that were presented in the modules.).

Precious, Clarissa, and Carl Axel shared the same challenges that they have encountered in answering the modules in math.

"Magayon po ma'am mag answer minsan sa modules sa math kaso po ma'am, ang mga eksampol po kulang lalo na po didto sa fractions nan decimals." (It is good to answer the modules in math sometimes ma'am but, the examples are few especially in fractions and decimals.)

Jhon Vincent and Laurence shared the challenges they have encountered in using modular distance learning in math.

"Ang module po sa math ma'am magayon po minsan kay madali po simbagan ang iba lalo na po kung damo po ang eksampol kung papan-o makuha ang simbag. Minsan po ma'am ang iba na hinahatag sa amon na modyul tigsararo lang po ang eksampol lalo po didto sa ratio nan proportion kay ang gamit na po namon ang LAS." (It is good to answer the modules in math sometimes especially if there are a lot of examples on how to get the answers. Sometimes ma'am the modules given to us only have one example especially in ratio and proportion since we are using now the LAS.)

"Ibahan po idto na LAS na ginamit namon sa math kay kadiyot lang po san paliwanag lalo na po ang eksampol kung papan-o makuha ang simbag. Amu lang po idto ang nagpasakit sa akon sa pagsimbag sa math. (The LAS given to us was odd because it only has a few explanations especially to the given example on how to get the answer. It is the only thing that made it difficult for me to answer the module in math.)

The learners have limited information of the foundation of the lessons which is needed for them to grow progressively (Piaget, 1936). The respondents also said that they excel in answering the activities that involves addition, subtraction and multiplication but not on division. According to Belleza (2021), the learners performed satisfactorily on the 3 basic skills in which are the addition, subtraction and multiplication but not on the fourth skill which is the division wherein the learners performed poorly. He addressed the problem by conducting an intervention to improve the skills of the learners in the basic mathematical skills. Mastery of the basic mathematical skills is important to further enhance the level of skills of the learners in numeracy since it is the foundation of mathematics (Wriston, 2015).The construction of the activities in the modules must be put in a comprehensive manner for the learners to fully understand the contents of modules better (Anzaldo, 2021).

3. Proposed Learning Activity Sheet in Math (PLASMa)

This part presents the proposed output which is learning activity sheets that emerged from the results of this study.

Rationale

The Global Pandemic brought about by COVID-19 has drastically changed the education system of different countries around the world. In order to aid the learning of the students, the educational institutions of different countries have implemented different learning modalities to make the education of the learners continuous. The Philippines have introduced 5 different learning modalities including the modular distance learning. The Modular Distance Learning is the most preferred mode of learning because of its availability for the students since they can get it through digital soft copies or printed materials. However, there are findings that the contents of the Self-Learning Modules or Learning Activity Sheets were not appropriate to the learners' level of skills especially in math. The SLM/LAS lacked in giving references and examples to the activities in its content leading to poor performance of the learners in math. The numeracy skills of the learners have declined ever since the implementation of the chosen learning modality which is the MDL. According to PISA (2020), the Philippines ranked 2nd to the last of the 49 countries who have been evaluated.

This Proposed Learning Activity Sheets aims to improve the numeracy skills performance of the learners using the Modular Distance Learning. This will serve as their guide to further understand the Mathematics Subject as it is designed according to their needs. This will help them to analyse and solve the problems in the modules and be able to apply it in real-life situations and

problems. This will also deepen their knowledge to interpret different data that they encounter in daily basis as well as master the four basic mathematical skills. Moreover, the learning activity sheets will aid the learning gap that the learners acquired during 2-year duration of pandemic. Furthermore, the activity sheets were enhanced by according to the problems that aroused in the study. It has numerous examples with highlights that the learners can easily understand the content of the lesson and the use of words were designed according to the needs of the learners.

This proposed learning activity sheet is designed with different features following the table of contents. It is organized based on the numeracy skills each lesson wants to achieve to improve the numeracy skills performance of the learners.

General Objective

The main goal of the learning activity sheets is to improve the numeracy skills performance of the pupils.

Specific Objectives

1. To enhance the basic mathematics skills of the pupils.
2. To reinforce the pupil's interpretation of numbers.
3. To improve the problem solving skills of the pupils.

IV. CONCLUSION AND RECOMMENDATIONS

This study concluded that the numeracy skills performance of the pupils is very satisfactory in basic mathematics and interpretation of numbers whereas satisfactory in problem solving. The pupils are mostly challenged in the difficulty level of the contents in the module and lack of examples in the modules. The learning activity sheets were proposed in order to improve the numeracy skills performance of the pupils.

It was recommended that the pupils may be provided additional exercises and drills that may improve their numeracy skills performance in problem solving. Also, the teachers may be equipped with strategies on how assist pupils on this aspect. The challenges encountered by the pupils in numeracy be addressed and given priority by the teachers and school heads. The learning activity sheets may be forwarded to the concerned authorities so as it will be further reviewed and evaluated before its adoption and implementation. Further study may be done that may include other schools in order for the scope to be widened and if possible the inclusion of other variables not covered.

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REFERENCES

[1] Aksan, J. A. (2021). Effect Of Modular Distance Learning Approach To Academic Performance In Mathematics Of Students In Mindanao State University-Sulu Senior High School Amidst Covid-19 Pandemic. Open Access Indonesia Journal of Social Sciences, 4(4), 445-467.

[2] Anzaldo, G. D. (2021). Modular distance learning in the new normal education amidst Covid-19. International Journal of Scientific Advances, 2(3), 233-266.

[3] Arada, M.G.V., Avila, E.B., Balares, J.R., De Leon, N.C., Quiaño, M.A., et.al. (2022). The Use of Modular Distance Learning in Relation to the Problem Solving Skills in Statistics and Probability of Grade 11 Students. International Journal of Education, Teaching, and Social Science, 2(4), 97-105.

[4] Bayucca, S. (2021). Challenges encountered and technical assistance needed by parents and learners utilizing modular distance learning: Basis for a proposed support program. SA Bayucca,"Challenges Encountered and Technical Assistance Needed by Parents and Learners Utilizing Modular Distance Learning: Basis for a Proposed Support Program", Journal of Humanities and Social Sciences, 3(3), 128-135.

[5] Belleza, M. J. (2022). Numeracy Level of Non-Numerate Learners through Enhanced Mathematics Learning Kits with Parental Involvement at Homes. Psychology and Education: A Multidisciplinary Journal, 3(4), 330-337.

[6] BELTRAN, R. S. (2021). Effectiveness of Modular and Video Lessons in Mathematics to The Performance of Grade 5 Pupils.

[7] Bermejo, A.P., Gabule, M., Valmoria, L., and Magsayo, J. (2022). Project R.A.D.I.O. Modular Distance Learning in Mathematics: The Case of Linanot Elementary School. Asia Research Network Journal of Education, 2(3), 135-148.

[8] Betlen, E.A. (2021). Effect of Modular Learning Approach on the Academic Achievment of Students. Global Scientific Journals, 9(7), 2995-30004.

[9] BORREL, R. D. (2021). Problems and Difficulties Met and Performance of Key Stage 1 Pupils in Modular Learning.

[10] Capinding, a.t. (2022). Impact of Modular Distance Learning on high school students mathematics motivation, interest/attitude, anxiety and achievement during the covid-19 pandemic. European Journal of Educational Research, 11(2), 917-934.

[11] Columbano, M. Q. (2019). Development and validation of modules in basic mathematics to enhance students' mathematics performance. International Journal of Innovative Technology and Exploring Engineering, 8(12), 4203-4207.

[12] Cobo, C., Najar, AM., and Ciarrusta, Inaki. (2021). Remote learning during COVID-19 pandemic: How countries have faced the challenge of implementing multichannel education delivery strategies. Available from WORLD BANK BLOGS, Education for Global Development.

[13] Dangle, Y. R. P., & Sumaoang, J. D. (2020, November). The implementation of modular distance learning in the Philippine secondary public schools. In 3rd International Conference on Advanced Research in Teaching and Education (Vol. 100, p. 108).

[14] Dargo, J., & Dimas, M. (2021). Modular distance learning: Its effect in the academic performance of learners in the new normal. Journal of Education, Teaching and Learning, 6(2), 204-208.

[15] Detera,C.D. and Dio, RV. (2022). Problems in Learning Mathematics AMID Covid-19: Reflected by High School. International Journal of Engineering Science and Computing, 12(6), 29702-20707.

[16] Greyling, L. E., Huntley, B., Reedy, K., & Rogaten, J. (2020). Improving distance learning mathematics modules in South Africa: a learning design perspective. South African Journal of Higher Education, 34(3), 89-111.

[17] Guan, A. G. R. and Benavides, N. G. (2021). Parent-Teacher-Learner Collaboration in Facilitating Modular Instruction. Unpublished masteral Thesis, Sorsogon State University, Sorsogon City.

[18] Insorio, A. O., & Macandog, D. M. (2022). Video lessons via YouTube channel as mathematics interventions in modular distance learning. Contemporary Mathematics and Science Education, 3(1), ep22001.

[19] Insorio, A. O., & Olivarez, J. A. (2021). Utilizing Facebook and Messenger Groups as Platforms for Delivering Mathematics Interventions in Modular Distance Learning. International Journal of Professional Development, Learners and Learning, 3(1), ep2109.

[20] Kaino, L. M. (2012). Teaching Mathematics in Open Distance Learning (ODL): Does it make a Difference with Teaching in the Traditional Approach?. Huria: Journal of the Open University of Tanzania, 13(2), 346-357.

[21] Khalil, U., & Yousuf, M. I. (2021). Effect of Modular Approach Teaching on Achievement of Secondary School Mathematics Students. Journal of Science Education, 2(1).

[22] Lara, R.G.T.,(2022). Parental Involvement in Modular Distance Learning and the Numeracy Skills of Grade 7 Students in the New Normal. Industry and Academic Research Review, 3(1).

[23] Lim, E. J. (2016). Effectiveness of modular instruction in word problem solving of BEED students. IOSR Journal of Mathematics (IOSR-JM), 12(5), 59-65.

[24] Magsambol, B. (2020). 8.8 Million parents prefer modular learning for students-DepED. Rappler.

[25] Magsambol, B. (2020). PH lowest among 58 countries in math, science-global assessment. Rappler.

[26] Maloloy-on, M. C., ARNADO, A. A., AVILES, G. M., SOLANIA, N. L., & VENTURA, R. P. (2021). Teacher's Responses on the New Normal Learning Delivery Modalities: Prospective Lifelong Learning Pathway. SMCC Higher Education Research Journal (Multidisciplinary Journal), 8(1), 1-1.

[27] Mape, J. E. and Janer, S. S. (2021). Strategies Utilized by Teachers in Distance Learning delivery Modalities (DLDM). Unpublished Masteral Thesis, Sorsogon State University, Sorsogon City.

[28] Pascual, E. (2020). Parent-teacher-learner collaboration in modular distance learning. LAP LAMBERT Academic Publishing.

[29] Quiaño M. (2022). The Use of Modular Distance Learning in Relation to the Problem-Solving Skills in Statistics and Probability of Grade 11 Students: Requirement for the subject in Doctor of Education, Quantitative Research. International Journal of Education, Teaching, and Social Sciences, 2(4), 97-105.

[30] Sampson, N. (2003). Meeting the needs of distance learners. Language learning & technology, 7(3), 103-118.

[31] Tacbobo, C. L. (2021). Learning Difficulties of Grade 4 Learners of Jampason Elementary School and their Performance in Mathematics during Modular Distance Learning. Unpublished

Undergraduate Research, Initao College, Philippines.

[32] Talimodao, A. J. S., & Madrigal, D. V. (2021). Printed Modular Distance Learning in Philippine Public Elementary Schools in Time of COVID-19 Pandemic: Quality, Implementation, and Challenges. Philippine Social Science Journal, 4(3), 19-29.

[33] Trinidad, MC. C., Vertudes, L.A. and Garcia, A.C.V.(2022). Utilization of Video Lessons as Mathematics Intervention Material in Modular Distance Learning. IRE Journals, 5(12), 235-240.

[34] Valderama, J. (2013). Programmed Learning Sequence and Instructional Module: Their Acceptability and Effectiveness in Teaching Plane Geometry. JPAIR Institutional Research, 1(1), 52-67.

[35] Vallespin, C.Z. (2021). Effect of Modular Learning Approach on the Academic Achievment of Students.Global Scientific Journals, 9(10), 834-842.