DOST COURSEWARE MODULE: A Tool in Enhancing Students' Performance in Grade 10 Mathematics

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Abstract

Covid-19 Pandemic had brought drastic changes within the Philippine education system, schools shifted from the normal face-to-face to blended distance learning. one among the main concerns to those new normal modalities is enhancing the performance of the scholars within the least learned competencies. This study assessed the effectiveness of the DOST courseware modules on the smallest amount learned competencies in Arithmetic and Geometric sequences as remediation materials to reinforce students' performance in Grade 10 Mathematics within the "New Normal" educational setting. An evaluation of the motivational effects of the DOST courseware modules on Arithmetic and Geometric sequences was conducted among the Grade 10 students of Los Baños NHS-BM. Instructional Materials Motivation Survey (IMMS), open-ended questions, and one sample pretest-posttest design were utilized in this study. The results were analyzed and explained using descriptive statistics, measures of central tendency, and t-test on paired samples. This study showed that students had a positive perception of the motivational effects of the DOST Courseware modules in Arithmetic and Geometric sequences and proved that DOST courseware modules were effective "New Normal" remediation tools. Future researches could also be undertaken to further analyze the utilization of the DOST Courseware modules in evaluation and correlation between perception and purpose of instruction, usability, and sustainability.

Keywords: Covid-19 Pandemic; DOST Courseware module; least learned competencies; students' performance

1. Introduction

Philippines is becoming more welcoming to the use of technology in the classroom especially these days that the country is continuously battling with the COVID-19 pandemic. To ensure that no learner will be left behind in terms of education, the DepEd Order No. 18, s. 2020 was released, whereas different distance learning modalities will be utilized. One of the major concerns in blended distance learning is enhancing the learners' performance in the least learned competencies. With the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms, the use of technology like course wares as supplemental tools in the new normal educational setting is becoming a trend.

Based on the observations of the Department of Education on the implementation of the Basic Education – Learning Continuity Plan, the Department has identified that there is a need to address learning gaps amidst the distance learning set-up and released DepEd Order (DO) No. 012, s. 2021, then, scheduled remediation and In-Service Training (INSET) activities.

Since the implementation of the K-to-12 Basic Education Curriculum, it has been noticed that summative and periodical tests, though the difference between arithmetic and geometric sequences is quite obvious, and still students found it confusing and difficult. Despite its importance and applications in a real-life situation, teachers have encountered problems in the mastery of the lesson and the poor performance of the students. With this, different interventions and remediation have been planned and administered like remedial, self-help learning tasks, and interactive courseware modules.

The challenges in delivering basic education caused by the COVID-19 pandemic made schools and Los Baños National High School- Batong Malaki shifted and adapt different distance learning delivery modalities. A survey on the preferred learning modality as well as the availability of gadgets at home was conducted before the opening of classes. More than half of the students' population in Los Baños National High School- Batong Malaki chose a blended distance learning modality (a combination of online classes and printed modules) and almost all of them have gadgets (smartphone, laptop, tablets, desktop, etc). In this case, online platforms and other e-learning have been utilized for distance learning. However, it has become necessary to check the effectiveness of the instructional materials used - how these materials promote learning and if they have positive effects on the performance of students.

Over the years, computers and the internet have posed a great influence on education. Digital media have influenced the teaching and learning experiences and have become the routine of everybody (Paechter and Maier, 2010). With the current situation in education, educators find ways to adapt to the changes by incorporating technologies into education. Numerous educational technologies have been developed as supplementary materials. Among the technologies developed is the DOST courseware, which includes modules in Mathematics and Sciences that are readily available for download online.

Course wares are proven effective by some studies in improving the academic performance of students especially those involving computerized simulations. In a study by Janier, et al (2010), it was found out that students who used the interactive courseware increased the scores and improved learning the application of integration. Furthermore, students who used the courseware performed as well as the students in the traditional tutoring method. This indicated that the courseware could be used as a tutoring system to enhance student learning the application of integration. Also, it could be used for independent study for the said topic.

According to Merrill's First Principles of Instruction and Component Display Theory, components of learning are innovative instructional strategies that promote the interactivity of learning materials. They provide unique instructional phases that direct the activation of (1) prior knowledge and experience; (2) demonstration of skills; (3) application of skills; (4) integration of the skills to the real world; and, (5) engagement and playing an active role in learning (Merill, 2019).

As the primary institution in promoting science and technology, the Department of Science and Technology Science Education Institute (SEI-DOST) and the Advanced Science Technology Institute (ASTI-DOST) pioneered in 2014 the creation of course wares for the newly implemented K-12 curriculum. DOST courseware is produced locally, and original Filipino course wares made for Mathematics and Science in Grades one to eight that primarily aims to develop an educational technology, teaching, and learning innovation to support the upgrading and improvement of Science and Mathematics education in the Philippines. Specifically, the DOST courseware aims to provide cost-effective educational technology solutions, assist learners through information, communication, and technology (ICT) and equip teachers with supplemental tools in teaching and motivating students. The courseware is readily available on MS Windows and Android operating systems.

The DOST courseware modules in Grades 4 to 6 were subjected to User Acceptance Test in the study conducted by Lapinid, Limjap, & Orillosa in 2015. Results showed that there was a statistically significant difference between the pretest and posttest performances of students in the topics found in the DOST courseware from Grades 4 to 6. Meaning, when it comes to the performance of elementary students, the DOST courseware had a positive impact on learning mathematics.

On the motivational and engagement part, the DOST courseware modules were found to be attractive and eye-catching to the intermediate learners in elementary. Lapinid, Limjap, & Orillosa added that most of their respondents had found the modules relevant to them. The modules also made the respondents happy and caused satisfaction with positive remarks in the overall interface of the modules.

Among the challenging parts in instruction are the promotion and sustainability of the motivation among the learners. Ever since the beginning of the 21st century, motivation and engagement of students in the learning process have always become the question. With the rampant development, technology has become the resort of many educators in promoting and sustaining the motivation of students towards learning. Studies on the associations of motivation and technology have followed the usual use of technology in classroom. For example, Campbell & Jane in 2012 found in their research that among the strongest elements children usually associated to technology was their motivation. The reason why the students in their study have become motivated because of the technology used is because the students were able to gain 'hands-on' autonomy in performing the tasks. Moreover, their study also proposes that in promoting design and technology in education, the written language is necessary as interactive dialogue between the teacher and students may not always be enough.

Based on the research of Kamamia, et al. (2014), mastery of subject matter is an essential skill that a teacher requires to be endowed with for it has a direct impact in teaching and learning process in schools. The learner gets maximum benefit from teacher-learner relationship that is based on teacher's competence in the delivery of subject content. Sigamony (2014) revealed that if a student does not analyze a lesson he or she fails to grasp a concept to pre-knowledge and his/her existing knowledge structures which militate against any kind of understanding

In addition, the teacher helps learners to deepen their understanding in learning competencies or lessons to be taught, according to Renard et al., (2017), learning competencies should be given focus because today, learning happens in a classroom, with lots of other students. The teacher teaches a lesson and goes on to the next one. If a student cannot master the lesson or learning material, there are many ways schools try to support those students to catch up.

Moreover, the study of Anderson (2012) revealed that using intervention material had assisted the learners of Biology to improve their performance in understanding the concepts of photosynthesis respiration, mendelian, non-mendelian genetics etc. He used of computer-based materials and exercises on concept mapping which allowed these students to improve their performance significantly in answering and understanding genetic problems and concepts.

Remediation is the only teaching method that breaks through learning barriers by providing students of all ages tailor-made strategies to help them thrive at school, reduce frustration and become more confident learners, (Lerner, N 2015).
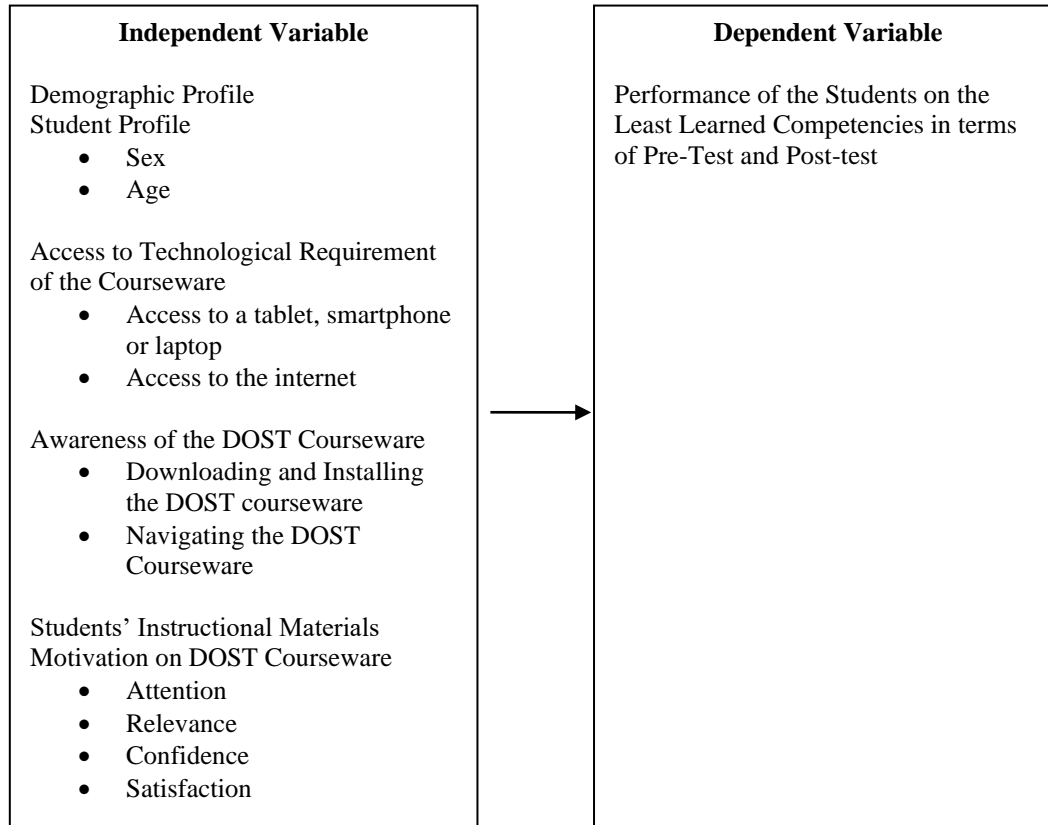
The researcher believes that DOST Courseware modules would be of great help in enhancing the performance of the students despite the New Normal educational setting adapted to the blended distance learning modality. DOST Courseware is a learner-centered instruction in which learners are encouraged to self-learning, self-actualizing, and self-initiating tools in the learning process towards mastery of the least learned competencies. These provide learners the opportunity to pause the discussion, go back to previous parts of the discussion, and even move to the net parts of the video. In addition, the learner may plan on what to do first and what to accomplish next. The instructional design of the DOST courseware modules promotes not only interaction and motivation but also the clear objective of the topics.

Educational Technologies like DOST Courseware modules made education more affordable and accessible to students. This empowered instruction through highly interactive digital courseware that can tap into the interest of their students. Instruction through technology distributed new ideas more quickly reached more people and created richer teaching experiences.

1.1. Conceptual Framework

This illustrates the paradigm that would guide the researcher in stating the research problem.

To identify the least learned competencies, an item analysis of the previous periodical and summative tests were employed. The effectiveness of the DOST courseware module as remediation material was evaluated in terms of its motivational impact to attention, relevance, confidence and satisfaction of the respondents. The improvement in the performance of students' least learned competencies was determined by pretest-posttest scheme.

Independent Variable	**Dependent Variable**
Demographic Profile Student Profile • Sex • Age Access to Technological Requirement of the Courseware • Access to a tablet, smartphone or laptop • Access to the internet Awareness of the DOST Courseware • Downloading and Installing the DOST courseware • Navigating the DOST Courseware Students' Instructional Materials Motivation on DOST Courseware • Attention • Relevance • Confidence • Satisfaction	Performance of the Students on the Least Learned Competencies in terms of Pre-Test and Post-test

1.2. Statement of the Problems

This study aimed to evaluate the effectiveness of the DOST course ware modules on the least learned competencies as intervention materials to enhance students' performance in Grade 10 Mathematics. Specifically, this study sought answers to the following questions:

1. What is the status of Demographic Profile in terms of:
    1.1 Student Profile
        1.1.1 Sex; and
        1.1.2 Age
    1.2 Access to Technological Requirement of the Courseware
        1.2.1 Access to a tablet, smartphone or laptop; and

        1.2.2 Access to the internet
    1.3 Awareness of the DOST Courseware
        1.3.1   Awareness of the DOST Courseware;
    1.3.2   Downloading and Installing the DOST courseware; and
    1.3.3   Navigating the DOST Courseware

2.   What is the level of students' Instructional Materials Motivation (motivational interactivity) on DOST courseware module in terms of:
    2.1.   Attention;
    2.2.   Relevance;
    2.3.   Confidence; and
    2.4.   Satisfaction

3.   What is the level of Performance of the Students on the Least Learned Competencies in terms of Pretest and Post Test?

4.   What is the level of Performance of the Students on the Test Score in terms of Pretest and Post Test?

5.   Is there a significant difference between the Performance of the Students on the Least Learned Competencies in terms of Pretest and Posttest?

6.   Is there a significant difference of the Performance of the Students on the Test Score in terms of Pretest and Posttest?

2. Methodology

2.1 Research Design

This study was a combination of descriptive and experimental designs. The descriptive research design was utilized in analyzing the data from the survey conducted along with the DOST courseware modules in Arithmetic and Geometric sequences while the experimental design, specifically the one-group pretest-posttest design, followed in gathering and analyzing the scores of students before and after the courseware intervention. The researcher used frequency tables, percentage, mean, standard deviation and sample paired t-test to explain the results of this study.

2.2 Respondents of the Study

Grade 10 students studying at Los Baños National High School – Batong Malaki (LBNHS-BM) during the school year 2020-2021 were selected as the participants of this study. There was a total of 928 learners enrolled in Grade 10 at LBNHS-BM during the said school year. Using the sample size determination formula (Creative Research Systems, 2016), a minimum sample of 87 was needed for the conduct of the study. The confidence level was set at 95% (t-value of 1.96) with ±10% margin of error and 10% confidence interval. The percentage of picking a choice, p is set to 50% or 0.5 to attain the highest sample size needed given the confidence level and margin of error.

2.3 Research Instrument

The researcher used two types of instruments in this study. First, the researcher used the DOST courseware modules in Arithmetic and Geometric sequences as intervention material for the Grade 10 students. The courseware modules were installed in the mobile, laptop, or personal computer of each student. The courseware modules have characters who act as teachers to the students by teaching them the topic and asking formative and summative questions. Among the remarkable features of the courseware, modules are its

interactivity. It allows the student to respond to questions given at their own pace. The courseware also does not allow the learner to proceed or skip to another part of the module if the learner has not yet answered the questions correctly.

Second, the researcher used the main data-gathering instruments which include the Instructional Materials Motivation Survey (IMMS) adopted from Keller in 2006 and the pretest and posttest on arithmetic and geometric sequences for the students. For the IMMS, the student respondents were asked to rate statements, each of either attention relevance, confidence, and satisfaction, from 1 to 5 as follows:

1-Not Evident
2-Somewhat evident
3-Evident
4-Mostly Evident
5-Highly Evident

The pretest and the posttest consisting of 20 multiple-choice items, 10 questions for Arithmetic, and 10 questions for Geometric sequences. The questions were based on the content of the courseware modules. In each question, two statements followed, "I am confident with my answer" and "I am guessing." This was to check if there was an improvement in the confidence of the students in dealing with Arithmetic and Geometric sequences after the administration of the DOST courseware modules. This also determined if there was a significant difference in the performance of the students in terms of pretest and posttest, as well as their performance in the least learned competencies in terms of posttest.

2.4 Research Procedure

The data gathering started from identifying the least mastered competencies through item analysis from the school year 2017-2020. The data gathering was done within three (3) hours divided into the following parts:

Table 1. Step-by-Step Data Gathering Procedure

Time Allotment	Action
30 minutes	Orientation and filling out of demographics form by the student respondents (through google meet and form)
20 minutes	Pretest on Arithmetic and Geometric sequences (through google form)
1.5 hours	Navigation of the course ware modules at the own pacing of the respondents
20 minutes	Posttest on Arithmetic and Geometric sequences (through google meet and form)
20 minutes	Responding to IMMS (google form)

Three (3) sections or groups in Grade 10 level in LBNHS-BM were sampled on the actual data gathering. Data gathering was based on the students' schedule of online consultation/classes.

Pre-test and Post-test were validated by Mrs. Ligaya D. Lapitan, Master Teacher II and one of Grade 10 teachers of Los Baños NHS-Batong Malaki.

2.5 Statistical treatment

Descriptive statistics, frequency tables, and the measures of central tendency(mean), mean difference, standard deviation, and sample paired t-test were used in explaining the results of this study. The data gathered were based on the Likert scale-type of questions and were analyzed using the frequency table, mean, mean deviation, standard deviation, and sample paired t-test while the open-ended questions were analyzed using descriptive statistics. The analysis provided the perceptions of students on the DOST courseware modules and their effects on the performance of students in Arithmetic and Geometric Sequences.

3. Presentation and Interpretation of Data

3.1 Demographic Profile of the Participants

Table 1. Demographic Profile in Terms of Student Profile with Regards to Age

Age	Frequency	Percentage
15	61	70%
16	19	22%
17	5	6%
18	2	2%
Total	87	100%

Table 1 showed that 22% or 19 respondents and 70% or 61 respondents were 15 and 16 years old respectively and had a mean age of 15.89 years old. Thus, this implied that the respondents are indeed regular Grade 10 students this school year, 2020-2021.

Table 2. Demographic Profile in Terms of Student Profile with Regards to Sex

Sex	Frequency	Percentage
Male	42	48%
Female	45	52%
Total	87	100%

Table 2 showed that most of the respondents are females, which represented 45 or 52%. Next, respondents belong to the male, which represented 42 or 42%.

3.2 Technological Requirements of the DOST Courseware Modules

Table 3. Frequency of the Learner Respondents Who Have Access to the Technological Requirements of the DOST Courseware Modules

Technological Requirements	Frequency
Has access to either a tablet, laptop, computer or smart phone	87
Has access to the internet	87

Table 3 showed that 87 or 100% of all of the learner respondents had access to either a tablet laptop, computer or smart phone. Access to any of these gadgets was a primary requirement as this would serve as the media to which the DOST course ware was installed and afterwards navigated. Also, it showed that 87 or 100% of the learner respondents had access to the internet, which was necessary for the downloading of the DOST course wares modules. It implied that the learner respondents met the technological requirements to access the DOST Courseware Modules.

3.3 Participants' Awareness of the DOST Courseware Modules

Table 4. Awareness and Interaction of the Students with the DOST Course ware Modules

	Frequency
Respondents who are aware of the DOST course ware modules	3
Respondents who have downloaded and installed the DOST course ware modules before the conduct of the study	0
Respondents who have tried navigating the DOST course ware modules before the conduct of the study	0

Table 4 showed that very few, only 3 out of 87 respondents were aware of the DOST course ware modules and none of the respondents had downloaded and installed the DOST course ware modules into their gadgets nor had tried navigating the course wares before. These results validated that the learner respondents had no previous knowledge and experience of any of the DOST course ware modules including the modules on Arithmetic and Geometric sequences. This was essential to getting uninfluenced results in the pretest, posttest and instructional materials motivation survey. It was evident that DOST Courseware Modules despite being released some years ago, appeared to be new and fresh to the learner respondents as remediation tool in blended delivery mode of education during pandemic that would provide more valid results.

3.4 *Level of students' Instructional Material Motivation on DOST Courseware Module*s

Table 5. Summary of the Level of students' Instructional Material Motivation on DOST Courseware Module

Positive Statement	Mean	SD	Verbal Interpretation
Attention	3.81	0.953	Mostly evident
Relevance	3.91	1.004	Mostly evident
Confidence	3.83	0.988	Mostly evident
Satisfaction	4.15	0.955	Mostly evident

The Level of Students' Instructional Material Motivation on the DOST Courseware Module in terms of attention, relevance, confidence and satisfaction which were actually the steps in promoting and sustain the motivation of the learners was summarized in Table 5 with a verbal interpretation of Mostly Evident and showed a positive perception of the students towards the courseware as intervention material in the current education setting, the "New Normal".

The DOST Courseware Modules were commended by the students for being a user friendly, autonomy, self-paced and self-regulating instructional materials that helped them to enhance their performance in the least learned competencies despite the challenges in blended distance learning. The result showed that with a good instructional material, whether it was utilized synchronously or asynchronously, learning and enhancing one's performance would be possible and achievable.

3.5 Level of Performance of the Students on the Least Learned Competencies in Terms of Pretest and Post Test

Table 6. Level of Performance of the Students on the Least Learned Competencies in Terms of Pretest and Post Test

Test Item	Pretest				Posttest			
	Confidence		Guessing		Confidence		Guessing	
	f	%	f	%	f	%	f	%
1	72	82.76	15	17.24	87	100	0	0

#								
2	61	70.11	26	29.89	85	97.7	2	2.3
3	40	45.98	47	54.02	79	90.8	8	9.2
4	70	80.46	17	19.54	85	97.7	2	2.3
5	62	71.26	25	28.74	86	98.85	1	1.15
6	32	36.78	55	63.22	66	75.86	21	24.14
7	71	81.61	16	18.39	83	95.4	4	4.6
8	68	78.16	19	21.84	85	97.7	2	2.3
9	66	75.86	21	24.14	85	97.7	2	2.3
10	68	78.16	19	21.84	86	98.85	1	1.15
11	72	82.76	15	17.24	86	98.85	1	1.15
12	58	66.67	29	33.33	86	98.85	1	1.15
13	32	36.78	55	63.22	87	100	0	0
14	67	77.01	20	22.99	86	98.85	1	1.15
15	50	57.47	37	42.53	86	98.85	1	1.15
16	50	57.47	37	42.53	84	96.55	3	3.45
17	52	59.77	35	40.23	82	94.25	5	5.75
18	65	74.71	22	25.29	77	88.51	10	11.49
19	37	42.53	50	57.47	84	96.55	3	3.45
20	65	74.71	22	25.29	87	100	0	0
TOTAL	1158				1672			
Mean	13.31				19.22			
Mean Difference		5.91						

It is shown in Table 6 that after the administration of the DOST courseware modules, there was an increase on the performance of the students in Arithmetic and Geometric sequences. The mean score of the learner respondents in the pretest was 13.31 while their mean score in the posttest 19.22 with the mean difference of 5.91. The level of confidence in each item was also noticeably increasing which proved that DOST course ware modules enhanced the performance of the respondents.

3.6 Performance of the Students on the Test Score in Terms of Pretest and Post Test

Table 7. Level of Performance of the Students on the Test Score in Terms of Pretest and Post Test

	Test Score	Frequency	Percentage	Verbal Interpretation
Pretest	1-5	3	3.45%	Low Mastery
	6-10	26	29.89%	Average Mastery
	11-15	54	62.07	Approaching to Mastery
	16-20	4	4.6	Mastered
	Total	87	100%	
	Test Score	Frequency	Percentage	Verbal Interpretation
	1-5	0	0%	Low Mastery
Posttest	6-10	1	1.15%	Average Mastery
	11-15	8	9.20%	Approaching to Mastery
	16-20	78	89.66	Mastered

	Total	87	100%

In Table 7, it clearly showed that after the administration of the DOST courseware modules, there was an increase on the performance of the students in Arithmetic and Geometric sequences. It is also remarkable that 78 learner respondents (89.66%) obtained a score of 16 to 20 interpreted as Mastered, compared to only 4 (4.6%) in the pretest. This evidently implied that DOST course ware modules helped the respondents to master the lesson in Arithmetic and Geometric sequences and enhanced their performance.

3.7 Performance of the Students on the Least Learned Competencies in Terms of Pre Test and Post Test

Table 8. Performance of the Students on the Least Learned Competencies in Terms of Pre Test and Post Test

Performance of the Students	Mean	SD	Mean Difference	t- value	p-value	Verbal Interpretation
Pre Test	13.31	5.07				
Post Test	19.22	1.51	5.91	1.663	0.000	Significant

There was a significant difference between the Performance of the Students on the Least Learned Competencies in terms of Pre Test and Post Test. For Pretest (M=13.31, SD=5.09) and Post Test (M=19.22, SD=1.51 conditions t(86) = 1.663 and p=0.000.

The alternative hypothesis was that the posttest scores of the learner respondents are greater than their pretest scores (Ha: Do>0) while the null hypothesis was that there was no significant difference between the pretest and posttest scores (Ho: Do=0). Given this, the null hypothesis would be rejected if $\frac{p-value}{2} < \alpha$. Since $\frac{p-value}{2} = 0$ is less than $\alpha = 0.05$, the null hypothesis is rejected. Hence, there was a significant difference on the pretest and posttest scores of the learner respondents. Further, the mean difference between the scores was greater than zero. This showed that the intervention of the DOST course ware modules has positive effect on the performance of the learner respondents on Arithmetic and Geometric sequences.

3.8 Performance of the Students on the Test Score in terms of Pre Test and Post Test

Table 9. Performance of the Students on the Test Score in terms of Pre Test and Post Test

Performance of the Students	Mean	SD	Mean Difference	t- value	p-value	Verbal Interpretation
Pre Test	11.54	2.95				
Post Test	18.55	2.17	7.01	1.663	0.000	Significant

There was a significant difference between the Performance of the Students on the Test Score in terms of Pre Test and Post Test. For Pretest (M=11.54, SD=2.95) and Post Test (M=18.55, SD=2.17 conditions t(86) = 1.663 and p=0.000

The alternative hypothesis was that the posttest scores of the learner respondents were greater than their pretest scores (Ha: Do>0) while the null hypothesis was that there was no significant difference between the

pretest and posttest scores (Ho: Do=0). Given this, the null hypothesis would be rejected if $\frac{p-value}{2} < \alpha$. Since $\frac{p-value}{2} = 0$ is less than α=0.05, the null hypothesis was rejected. Hence, there is a significant difference on the pretest and posttest scores of the learner respondents. Further, the mean difference between the scores was greater than zero. This implied that the intervention of the DOST course ware modules had positive effect on the performance of the learner respondents in terms of pretest and posttest

4. Conclusions

Covid-19 Pandemic had brought a drastic change in the education system, assuring that no students would be left behind. Challenges in enhancing the performance of the students in the least mastered competencies in blended distance learning was addressed through the educational technologies like DOST Courseware Modules. Its unique characteristics of being a locally-produced, all-original Filipino highly interactive multimedia educational application packages, self-paced and self-regulating learning materials, and feature of the real classroom set up and with all the findings of this study, DOST Courseware Modules showed a great impact in the improvement of the students' performance in the least learned competencies. It can be utilized before as motivation, during the discussion for developing, engagement, and assimilation activities, and after instruction as remediation or intervention materials especially in the implementation of the new normal educational policy.

Based on the findings of the study, the following conclusions were drawn:

The demographic profile of the students in terms of sex and gender, accessibility to the technological requirements, and compatibility and usability of the materials played were important factors to consider in choosing effective and efficient instructional materials, especially during this challenging time.

The Level of Students' Instructional Materials motivation (motivational interactivity) on DOST courseware in terms of Attention, Relevance, Confidence, and Satisfaction resulted to be Mostly Evident.

The level of Performance of the Students on the Least Learned Competencies in terms of Pretest and Post Test showed Approaching to Mastery and mostly Mastered.

The level of Performance of the Students on the Test Score in terms of Pretest and Post Test was found out to be Significant.

The test difference between the Performance of the Students on the Least Learned Competencies in terms of Pre Test and Post Test resulted to be significant. This implied that DOST Courseware modules enhanced the performance of the students in the least learned competencies.

The test difference between the Performance of the Students on the Test Score in terms of Pre Test and Post Test was significant, which means that DOST Courseware Modules had a positive effect as remediation materials in the "New Normal" in the performance of the students.

5. Recommendations

As mentioned in the limitations of this study, the evaluated courseware modules were only for Arithmetic and Geometric Sequences. Therefore, the researcher highly recommends that the same evaluation be conducted in all the remaining DOST courseware modules. It is also recommended that a proper sampling method be used to draw inferences not only on the samples but also in the population.

Based on the results and conclusions posted in the study, the following recommendations were formulated.

1. The same evaluation may be conducted in all the remaining DOST Courseware modules.

2. This study may be conducted among areas in the Philippines where technology is scarce and development is low.

3. For students, other topics in Math and Science DOST Courseware modules may be explored and navigated.

4. Teachers may look for educational technologies in providing varied activities.
5. Future researches may be undertaken to further analyze the use of the DOS Courseware modules in evaluation and correlation between perception and purpose of instruction, usability and sustainability.

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