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RESEARCH ARTICLE

THE EFFECTIVENESS OF CI PROJECT: LEAPERS MODEL (LEARNERSACADEMIC PERFORMANCE IN SCIENCE THROUGH MODULARDELIVERY OF LEARNING)

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Abstract

The CI Project: LEAPERS model aimed to increase the academic performance of BagongNayon II National High School's Grade 7 Students in Science. As public schools in the Philippines adopt different distance learning modalities, BN2NHS used Modular Distance Learning in print(MDL-P) The said modality had some limitations and these were the reasons why Science teachers needed to create more supplementary tools that could help students to understand Science concepts especially in Earth Science. This study used descriptive analysis using Mean Percentage Scores (MPS) and the frequency in percentage. Consequently, the respondents were selected based on the documents and data presented through MPS Test Results. The results of this study indicated the following: 1) with the use of video lessons, students understood the science concept in modular distance learning; 2) Video lessons were the most appropriate to the students to help them lessen their difficulty in answering learning tasks in their modules; 3) Learning with video lessons made by the teachers fostered interest and motivated students to be engrossed with the lessons. The CI Project: LEAPERS model had a great impact in the academic performance of the grade 7 students in Science. Teachers must put a premium on contextualizing videos by incorporating graphics, interactive illustrations, and twists on the videos. Using these contextualizations, students felt the excitement and learning at the comfort of their home.

Introduction:-

The BagongNayon II National High School has been adopting a modular distance learning modality for almost two years. There are some issues and problems that the teachers should address in terms of teaching and learning during this pandemic. Teachers must put a premium on contextualizing videos such as by putting graphics, interactive illustrations, and twists on the videos. In this sense as the students watch those videos, they would feel the excitement in their learning even though they are just in their home.

Academic achievement/performance of a student is a universal/standard basis of degree on how teachers and school achieved their goals and imparted the necessary knowledge, values, and skills. Due to the pandemic brought by COVID – 19 which poses another challenge in bringing the quality of education to our learners, the Department of Education stands to the challenge that "Education Must Continue", hence, DepEd released the DepED Order No. 12,

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s. 2020 is known as the "Adoption of Basic Education Learning Continuity Plan in the light of COVID – 19 Public Health Emergency" which serves as guiding principles and practices in delivering basic education among our learners.

One of the key elements in the BE-LCP is the adoption of the learning delivery modalities that schools can adapt depending on the health restrictions and context of the learner's locality. In conformance with this order, our school through School Learning Continuity Plan (SLP) adopted the Modular Distance Learning (MDL). For the past years, the overall MPS results of the Science School Achievement Test (SAT) for SY 2017 – 2018 and SY 2019 – 2020 are 46.86% and 47.67% that showed minimal improvement by employing some teaching strategies, however, we still have not reached the expected mastery level.

This study focused on the Effectiveness of Contextualized Videos in Facilitating Students Learning in a Modular distance learning modality. This is due to the implementation of multiple distance learning modalities such as modular distance learning and blended learning. To help the learners and parents to cope with these modalities, self-learning modules were developed, however, with the arising challenges in the implementation of modular distance learning via SLMs, video lessons would greatly help the learners and parents to cope with the lessons, moreover, contextualized video lessons. Several meta-analyses have shown that technology can enhance learning (e.g., Schmid et al., 2014), and multiple studies have shown that video, specifically, can be a highly effective educational tool (e.g., Kay, 2012; Allen and Smith, 2012; Lloyd and Robertson, 2012; Rackaway, 2012; Hsin and Cigas, 2013). Several studies also have shown that the use of short video clips allow for more efficient processing, go-to resources, more engaging sensory experience, and memory recall.

The developed video lessons of grade 7 teachers will be contextualized based on the learner's ability and learning capacity of the students for this second quarter S.Y. 2021-2022. These audio-video presentations are engaging and cover the Most Essential Learning Competencies (MELC) mandated in the BE-LCP. Each video lesson will be carefully planned and designed in a PowerPoint presentation by grade 7 teachers before the video recording takes place. After completing the videos, they will be validated by the Head Teacher, Master Teacher, and Key Teachers of the department before distributing it to students. In comparison to the videos on YouTube, these contextualized videos are good for 3 to 5 minutes only, it hooks the students' interest because its not lengthy to watch, and students may know their Science teachers as well, in spite of no classroom interactions. According to Windahyu,(2021), delivering material through video media in learning is not just delivering material according to the curriculum. However, there are other things that need to be considered which can affect the interest of students in learning. This is in the form of experiences or situations in the surrounding environment, which are then brought into the subject matter which is conveyed via video. In addition, in learning tasks, students will find it easier to do what they see in the video than the material conveyed through books or pictures. Activities like this will make it easier for students and teachers in the teaching and learning process. Thus, developing video lessons in Science as a supplementary tool for learning would lessen the difficulty and boredom of grade 7 students during pandemic. Although, Science is one of the most interesting subjects if it is in modular distance learning students would get bored because of no interaction coming from the teacher and their classmates.

Research Questions

1. What is the level of performance of the grade 7 students in Science based on the first quarter MPS in modular distance learning?
2. What is the level of performance of the grade 7 students in Science in the fourth quarter using video lessons in modular distance learning?
3. Is there a significant difference between the first quarter and the fourth quarter test results of grade 7 students?
4. What is the proposed action plan for Project LEAPERS in determining the grade level with the lowest MPS?

Methodology:-

Quantitative research relies heavily on the ability to gather data from a large sample and use it to explain a far larger population (Warren, 2020). It uses non-randomized sampling based on the documents and records which was the MPS results of the first quarter in Science. Sections with the lowest MPS result were the respondents of this study. It is a quantitative in nature because this study used the descriptive analysis such as the mean and frequency.

a. Participants and/or Other Sources of Data and Information

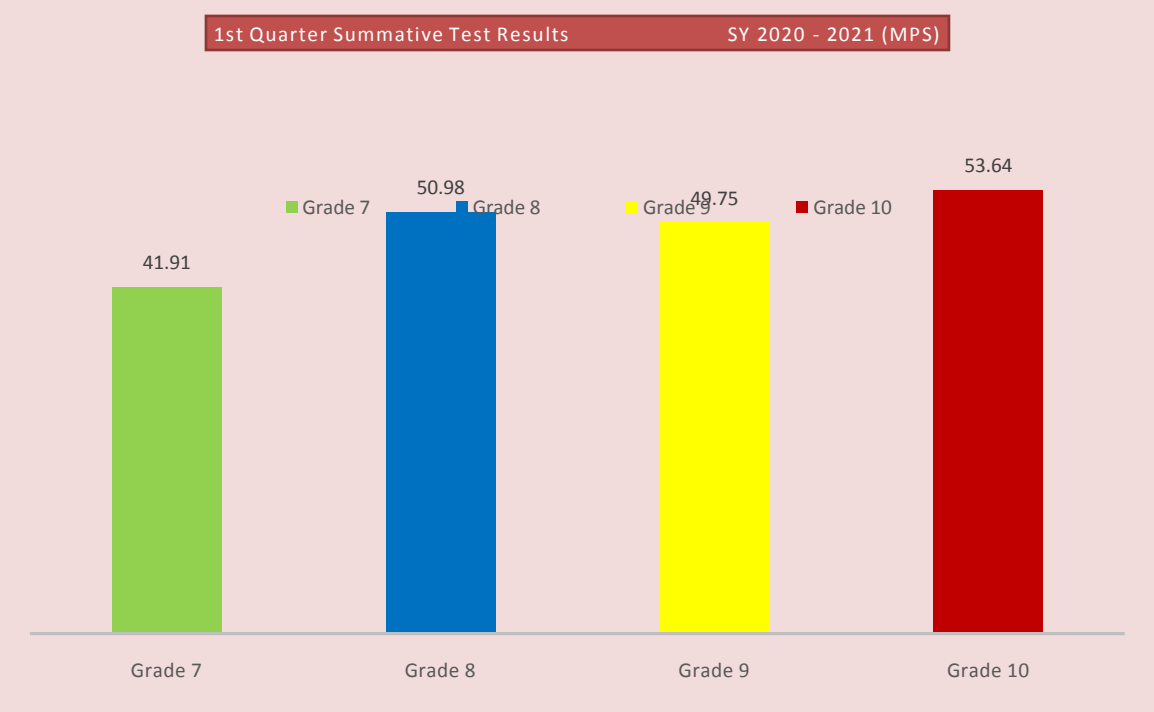
The participants were selected based on the documents and records of the First Quarter MPS Result in Science from grade 7 to 10. From the data, grade 7 has the lowest MPS results. Thus this study focuses on the Grade 7 students of BagongNayon II National High School with the lowest MPS from their First Quarter MPS test results. There were six (6) identified sections among the 34 sections of grade 7 got the lowest MPS. The total population of grade 7 is 1568 this S.Y. 2021-2022. The participants of this study are 267 students which are 17% of the total population.

Table 1:- Grade 7 First Quarter Summative Test Results.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
136	Department of Education													
137	Region IV-A CALABARZON													
138	BAGONG NAYON II NATIONAL HIGH SCHOOL													
139	Consolidated ALL Written Work Test Result in Science and Technology													
140	SY 2020 - 2021													
141	NO.	SECTION	MPS	HIGHLY PROFICIENT		PROFICIENT		NEARLY PROFICIENT		LOW PROFICIENT		NOT PROFICIENT		TOTAL
142				90-100% (22-25)		75-89% (19-21)		50-74% (13-18)		[illegible]		[illegible]% (0-6)		
143	1	Grade 7	41.91	20	2.25	100	11.27	238	26.83	280	31.57	249	28.07	100.00
144	2	Grade 8	50.98	8	0.83	179	18.63	292	30.39	302	[illegible]	120	12.49	100.00
145	3	Grade 9	49.75	5	0.64	145	18.59	245	31.41	270	34.62	115	14.74	100.00
146	4	Grade 10	53.64	11	1.47	186	24.80	250	33.33	241	32.13	62	8.27	100.00
147		Total	49.07	44	5.19	610	73.29	1025	121.96	1153	135.98	546	63.57	100.00
148														

The table 1 shows that the grade 7 has the highest number of Low proficient and Not proficient the total number of 529.

Figure 1:- Summary of the 1st quarter Test Results of Grade 7-10.



The First Quarter Summative test results as shown in the graph, Grade 7 got the lowest MPS with 41.91%, followed by Grade 9 with 49.75%, Grade 8 with 50.98% and Grade 10 leading with 53.64%.

As part of the ethical considerations in this study, the participants were given a parental consent waiver if their parents are allowing them to be part of the study. And the researchers informed them of all the activities taking part in the study Bhasin, (2020).

b. Data Gathering Methods

This study used a descriptive-quasi experimental research design because enables the researches develop an in-depth understanding on how the video lessons affect the performance of grade 7 students in science during modular distance learning. There are many kinds of experimental research design, such as pre-experimental design, true-experimental, factorial design, and quasi-experimental designs (Ary et al,2010: 302). Due to time constraints and no face-to-face classes this study will use a pre-experimental design because it provides little or no control of extraneous variables in the form of a one-group pretest-posttest design. The use of pre-test and post-test design is to see the result of the treatment. The selected group of participants will take the pretest - treatment (utilization of the videos)- posttest.

The one-group pretest and posttest design usually involve three steps: (1) administering a pretest measuring the dependent variable, (2) applying the experimental treatment which is using the contextualized videos to the subjects, and (3) administering a post-test, again measuring the dependent variable. Differences attributed to the application of the experimental treatment are then evaluated by comparing the pretest and post-test scores (Ary et al, 2010: 303). Although the researchers administered the pretest-posttest design, the basis of the overall result after the implementation of the Project LEAPERS was the MPS test results of the grade 7 students as a whole. In which descriptive analysis is applied. It's essential to know how frequently a certain event or response occurs. This is the purpose of measures of frequency, like a count or percent.

Results:-

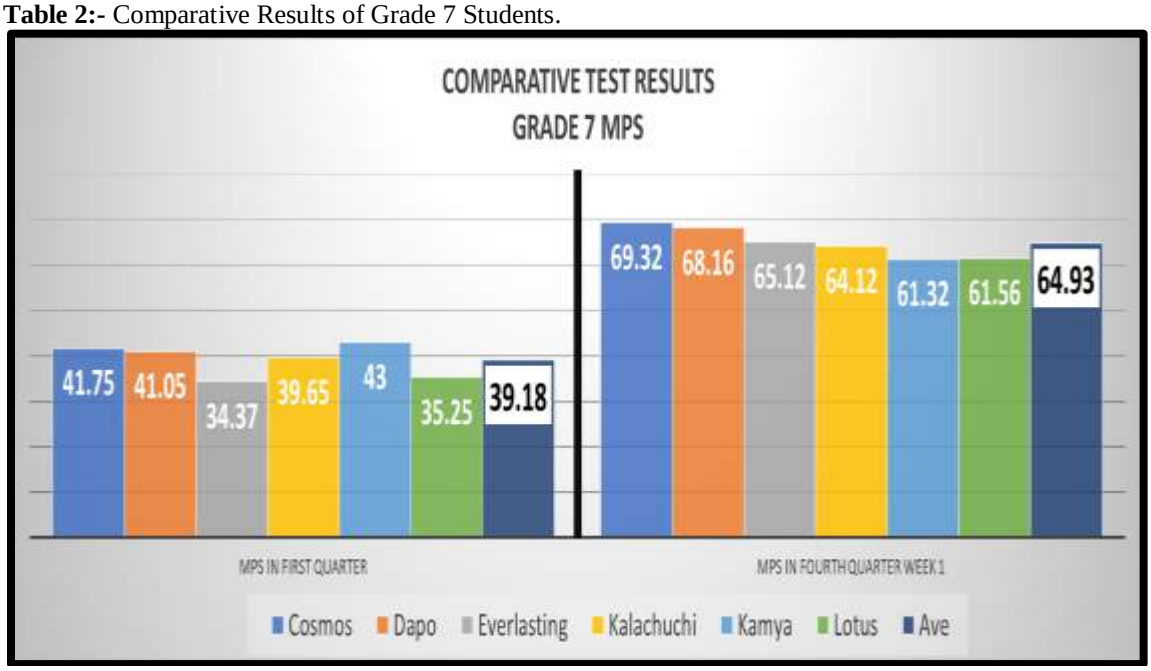
According to Wedahyu, (2021) teaching and learning process runs effectively and efficiently if it is supported by the availability of supporting media such as teaching aids, learning media and others. Utilization of media and educational methodologies that are dynamic, conducive and dialogic are needed for the optimal development of the potential of students. This is because the potential for students to be more aroused if assisted by a number of media or facilities and infrastructure that support the interaction process that is being carried out. (Hayati, 2020). Learning through videos is considered an effective tool for many students,Wong, (2020).Brame, the assistant director of Center for Teaching in Vanderbilt University (2016) stipulated in the study of Wong, (2020) that in order to create effective video-based learning, she listed out a few suggestions to improve video-based learning. These were her suggestions; 1. Displaying key information (signalling). 2. Segmenting the video clip into smaller pieces (segmenting) 3. Elimination of extraneous information (weeding)

4. Matching the process of both audio and visual channel to convey information (matching modality) 5. Making materials that are relevant for a particular class. These suggestions helped the researchers improved the developed video lesson in grade 7 science. Segmenting the video lesson would help learners to access easily using their phones with low memory.The results of this study indicated the following: 1) with the use of video lessons, students understood the science concept in modular distance learning; 2) Video lessons were the most appropriate to the students to help them lessen their difficulty in answering learning tasks in their modules; 3) Learning with video lessons made by the teachers fostered interest and motivated students to be engrossed with the lessons.

Discussion:-

The Project LEAPERS Model aimed to increase academic performance of the grade 7 students with the use of video lesson made by their teachers. This Project undergone the pilot testing. It is "a small scale-study conducted prior to conducting an actual experiment; designed to test and refine procedures." Here, the Researchers checked the designed tool if it works. There were six (6) selected sections from Grade 7 were given the video lessons during the Fourth quarter.

Table 2:- Comparative Results of Grade 7 Students.

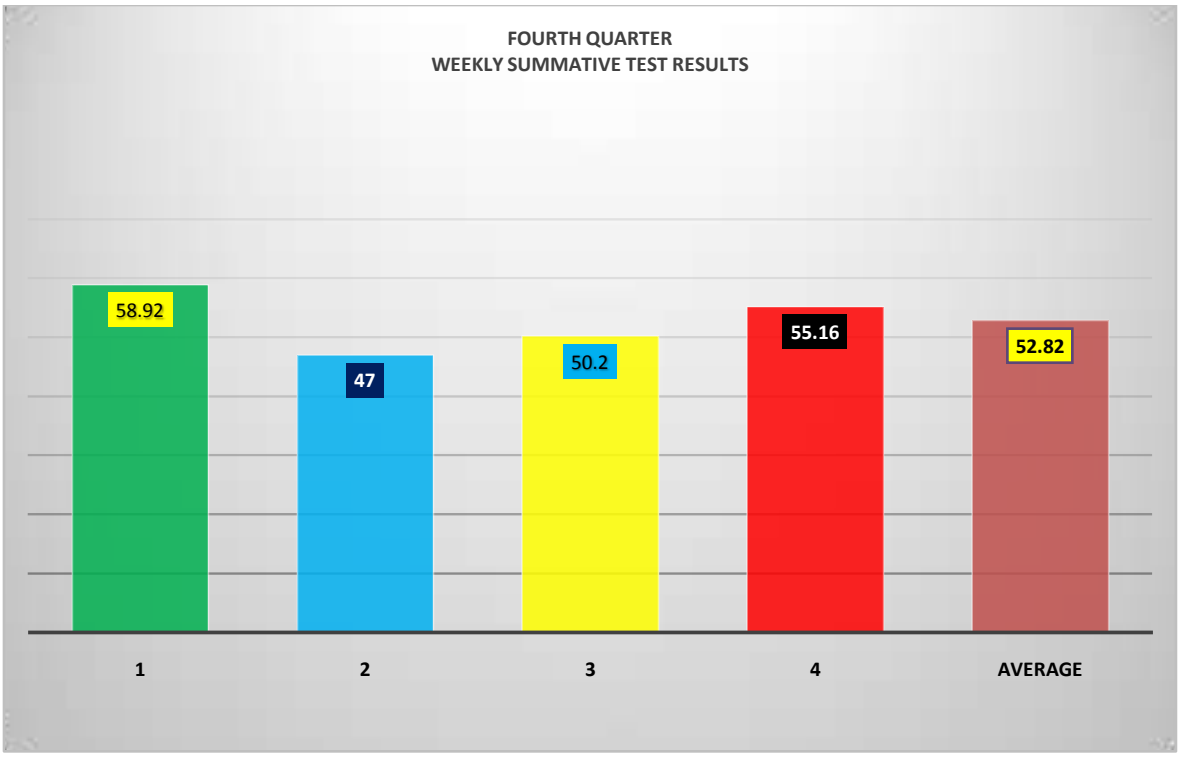


The graph shows the significant increase in their MPS. Cosmos with initial 41.75 increases to 69.32%. Dapo with 41.05 in first quarter rise up to 68.16%. Everlasting also showed significant improvement, from 34.37 to 65.12%. Kalachuchi improve from 39.65 to 64.12% MPS. Kamya with 43.00 as initial MPS to 61.32. Lotus also increases its MPS from 35.25 to 61.56% in fourth quarter.

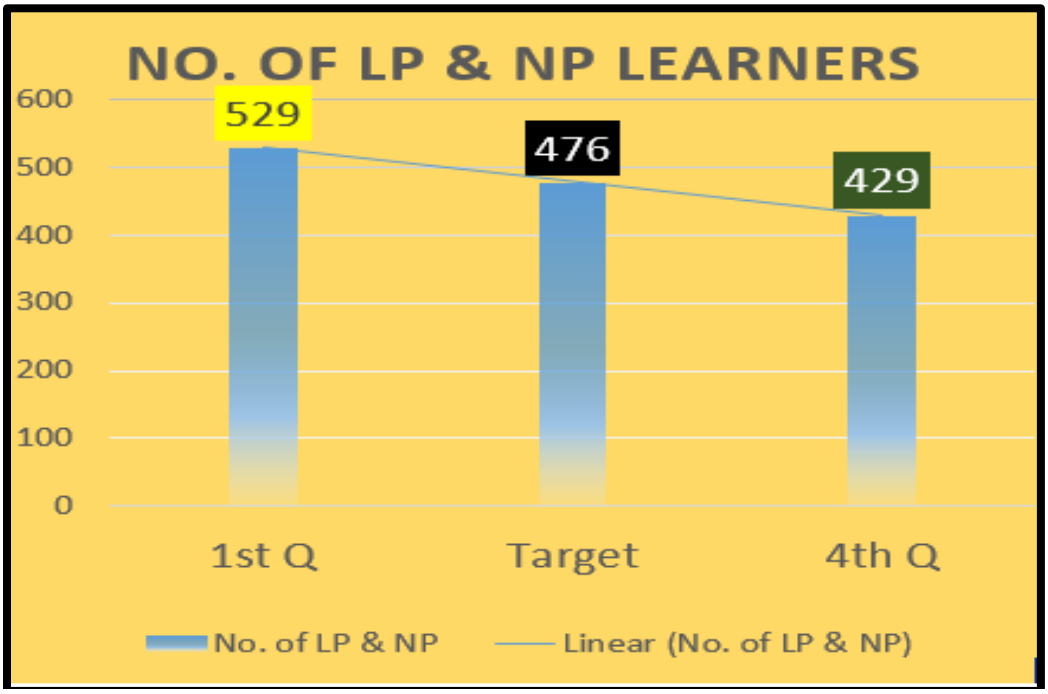
It only indicates the effectiveness of teacher-made video lessons in explaining the topic that affects positively on the performance of students. Thus, it resulted to higher MPS.

During the roll-out of the Project LEAPERS in the Fourth Quarter students were using the developed video lessons by grade 7 teachers.

Figure 3:- Weekly Summative Test Results.



After the implementation of Project LEAPERS, the graph presents the average MPS obtained from all Grade 7 students in Quarter 4. Thus, there is a significant increase of 52.82% MPS as compared to the average MPS obtained during Quarter 1 of 41.91% with the teacher-made video lessons.



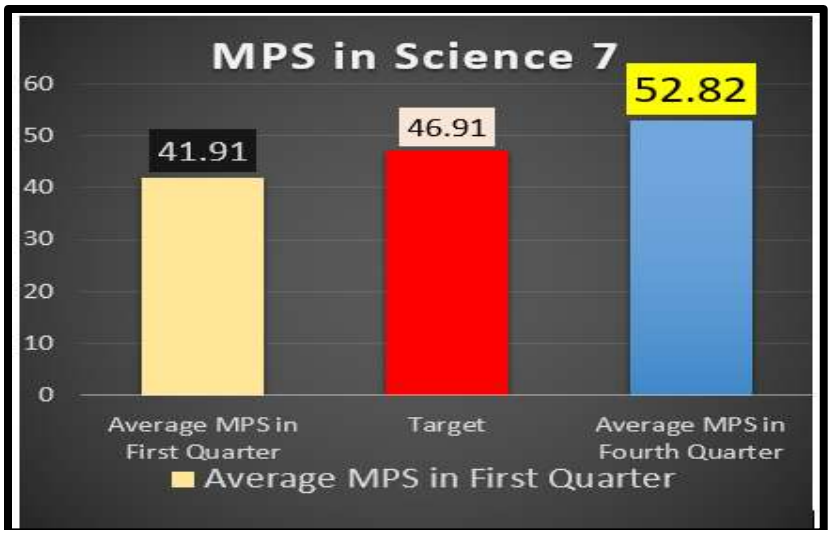


Figure 3:- Comparative Analysis of First and Fourth Quarter MPS.

In figure 3 shows that the average MPS result in first quarter of grade 7 was 41.91 % and the MPS result exceeded to 5.91% from the 46.91% target and on the left side shows the number of Low Proficient and Not Proficient learners decreases to 100 from 529 to 429.According to Hamalik (in Yudianto, 2017 as stated in the study of Widayhu, 2021). The use of teaching media in the teaching and learning process can generate new desires and interests, generate motivation and stimulants for learning activities, and even bring psychological influences on students. Science is an interesting subject where the students can learn everywhere. The use of video lessons in modular distance learning would help the students lessen their boredom in reading modules that were printed in black in white. Video lessons strategy in modular distance learning greatly improved the academic performance of the grade 7 students in science.

Conclusion:-

Based on the data obtained from the results, it can be concluded that the use of video as a supplementary tool in modular distance learning increases students' academic performance in science. With the use of video students can understand the science concept because their science teacher discussed the topic and explained it based on their level. Students can play back the video according to their needs and needs. Learning with video media fosters interest and motivates to always pay attention to lessons. In addition, by displaying videos related to problem solving, it will certainly increase students' academic performance. The science experiment can also be localized and presented in the videos.

Future Scope

LEAPERS Model have achieved the main objective of increasing the academic performance of grade 7 students in science. The generation of learners today are digital natives who are exposed to smart phones, 3D television, social media and are more comfortable, independent, and capable of learning when technology is available. Contextualized video lessons shared to them can be easily watched in just one click on their gadgets. These video lessons have a positive effect on student's learning since they are visual learners, lessons converted into videos with colorful images, short and precise discussion captured the interest of students. Grade 7 science teachers prepared the instructional materials to be utilized in the video lessons that plays an important role in enhancing the academic performance of students. They explained the lessons in simple words sometimes in Filipino language for students to easily understand the concepts. Through the implementation of the LEAPERS Model project of the science department, teachers developed the skill in developing and creating video lessons. Adapting to technological changes to bridge the generation gap between teachers and students, so that the latter can learn effectively.

Hence, contextualized video lessons with simplified examples and explanations proved to be effective in enhancing the academic performance of students to help them in learning independently in modular distance learning.

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