

INFLUENCE OF TEACHER-MADE VIDEO LESSONS ON THE PERFORMANCE OF STUDENTS IN PHYSICS FOR ELEMENTARY LEARNERS

Melissa V. Basmayor¹

Laguna State Polytechnic University, -Santa Cruz Main Campus, Santa Cruz Laguna, Philippines

Abstract

The study entitled Influence of Teacher-Made Video Lesson in the Performance of Students in Physics for Elementary Learners aimed to 1) determine the level of acceptability of the teacher-made video lessons in terms of signaling, segmenting, learning style, adaptability, and aesthetic value; 2) assess the students' performance level in the pre- test and post-test; 3) evaluate the level of perception of students in the teacher-made video lessons in terms of students' engagement; 4) determine the significant difference in the level of acceptability of the teacher-made video lessons on the criteria rated by: Master Teachers and Science Teachers; and 5) determine the significant difference in students' performance levels in the pre-test and post-test. The researcher used descriptive and experimental research designs to determine the influence of teacher-made video lessons in Science 4 on the learners' academic performance. The results showed that the teacher-made video lessons were "Highly Acceptable" in terms of signaling, segmenting, learning style, adaptability, and aesthetic value. It showed that all the variables are evident in the videos that helped the students learned easily and resourcefully. Moreover, the results revealed that the level of students' performance in terms of pre-test score was satisfactory to post-test scores of very satisfactory. It can be gleaned from the data that using teacher-made video lessons influenced their learning and improved their performance. The level of perception of the students in the teacher-made video lessons in terms of student engagement was "Very High" indicating that the learners engaged, focused, and concentrated in the lesson when they used the teacher-made video lesson in their Science class. The test results determined that there is no significant difference in the level of acceptability of the teacher-made video lessons on the given criteria as rated by Master Teachers and Science Teachers. On the other hand, there is a significant difference between the students' performance levels in terms of pre-test and post-test. The teacher-made video lessons influenced learners' performance and made education more accessible to everyone. It addressed the gap between parents, learners, and teachers for science learning to continue, progress, and retain. Through the conclusion drawn from the findings, the researcher recommends that the study be proposed to Local Government Units and other stakeholders to fund the acquisition of flash drives and OTG adaptors.

Keywords: teacher made; video lessons; students performance; Physics; elementary

1. INTRODUCTION

Traditional classrooms were used for teaching and learning, with various instructional strategies such as lectures, activities, interactive instructional materials, and programs to engage students in the learning process. Most of the world's enrolled students have experienced temporary school closures during the COVID-19 pandemic occurring worldwide since January 2020 to promote social distancing and thus slow the spread of the virus (Viner et al., 2020). Almost 200 countries with more than ninety percent of these students from early childhood to higher education face educational disruption (UNESCO, 2020).

Supporting the continuation of teaching and learning during the Pandemic is the study of Reimers (2020) that states that educational institutions have crumbled, and instruction has changed dramatically to various sorts of distance learning, which can be described as learning in which the instructor and the learners are separated by either distance or time. According to DepEd Order No. 032 series of 2020 about the implementation of the Basic Education – Learning Continuity Plan (BE LCP), learners and parents have the option of choosing among different learning modalities in the new normal which are Online Distance Learning (ODL), Modular Distance Learning (MDL), TV-Video/Radio-Based Instruction, or Blended Distance Learning (BDL).

The internet allowed everyone to connect with the world outside of the classroom. It has opened new opportunities, but it has also redefined the definition of time, allowing everyone to learn online at their own pace and convenience. On the other hand, students from low-income families and those who live in rural areas have restricted access to the technology needed for online learning, and according to the National Survey in 2020, this learning gap is bridged via modular learning, which ranked as the most chosen modality of the parents and learners through the Learners Enrollment Survey Form (LESF) that makes education more accessible and convenient to everybody. All students in all learning areas receive Self Learning Modules (SLM) in digital or printed copies, they learned by themselves, and their parents and guardians serve as their guides in completing all Learning Tasks.

According to Agaton (2021), parents and guardians serve as learning supervisors, and home-schooling teachers for modular learning but faced a variety of challenges, particularly in Science learning, such as the new mode of learning in a home setting, delivery of instruction, availability of materials for the activities, financial difficulties, and a struggle with the use of technology and availability of gadgets. Their biggest hindrance to teaching Science to their child in this new normal is that they don't have the means to communicate with the teacher to ask and clarify something about the lesson, so they skip teaching to their child. They also have limited access to the internet to search for the video or audio explanations regarding the topics. One way to assist the concern of the parents and learners regarding the not-understandable topic for them is by using video lessons. It has instructional strength as it can provide instruction through sound, motion, and visuals.

The study aimed to build a bridge in the gap between parents, learners, and teachers for science learning to continue and progress. The researcher provided teacher-made offline video lessons in Physics that are saved in a flash drive and can be accessed using an On the Go (OTG) adaptor which has a connection for your device on one side and a USB flash drive connector on the other end. It allows the user to connect, access and transfer files using a storage device such as USB flash drive and external hard drive without using a computer or laptop. OTG can also be used without internet connection and can be plugged in and out anywhere at any time.

Santos (2020) published in his article that OTG is one of the primary tools that can be utilized to ensure that no student will be left behind as we go through the new normal in education. An OTG flash drive contains digitized self-directed modules and video broadcast editions so that the parents and learners can watch it in their most convenient time and most possible way using their laptop, desktop, smartphones, or even televisions that have a port for the flash drive.

This study primarily focused on determining the influence of the teacher-made video lessons in Physics in modular classes in Grade 4 for A.Y. 2021-2022, especially on those learners with learning difficulties.

1.1 Objectives of the Study

The study entitled "Influence of teacher-made video lessons in the performance of students in Science 4" aimed to aid the challenges that parents, learners, and teachers are facing regarding the students learning in Science 4 by providing teacher-made video lessons saved in a flash drive and OTG adaptor to the learners. Specifically, it aimed to answer the following statements:

1. Determine the level of acceptability of the teacher made video lessons in Physics for elementary learners in terms of:
 - 1.1 Signaling;
 - 1.2 Segmenting;
 - 1.3 Learning Style;
 - 1.4 Adaptability; and
 - 1.5 Aesthetic Value.
2. Assess the level of the students' performance in terms of:
 - 2.2 Pre-test; and
 - 2.3 Post-test.
3. Evaluate the level of perception of students in the teacher-made video lessons in terms of students' engagement.
4. Determine the significant difference in the level of acceptability of the teacher-made video lessons in Physics for elementary learners on the given criteria as rated by:
 - 4.1 Master teachers; and
 - 4.2 Science teachers.
5. Determine the significant difference in the level of performance of students in terms of:
 - 5.1 Pre-test; and
 - 5.2 Post-test.

2. METHODOLOGY

2.1 Research Design

The researcher used both descriptive and experimental research designs to determine the level of influence of using

teacher-made offline video lessons in Physics for elementary learners.

A pre-test was given to the respondents before using the teaching strategy which is the teacher-made video lessons to determine their background or baseline knowledge about the topic. The post-test was administered after using teacher-made video lessons to determine its influence on their performance if they had gained and retained the knowledge about the topic. It is both consist of fifty (50) items test.

A descriptive approach of study (Shields & Rangarjan, 2013) is used to represent features of a group or phenomenon being examined to obtain somewhat accurate data from the bridge class kids in grades 7-10. This approach was shown in the part of the study where survey questionnaires were given to the respondents to assess the video lessons based on the given criteria.

Experimental research is an endeavor by the researcher to retain control over all variables that may influence the outcome of an experiment, according to Key (2012). The researcher seeks to determine or forecast potential outcomes in this manner. It is a plan for the technique that permits the researcher to test his hypothesis by drawing reliable conclusions regarding the relationships between independent and dependent variables. The experimental approach was shown in the study where the pre-test and post-test were administered upon the utilization of the video lessons to assess the influence of the video lessons on the performance of students.

2.2 Respondents of the Study

The respondent of this study were 60 students in Grade 4 at Pansol Elementary School, composed of 30 males and 30 females, all in the experimental group. They were exposed to the use of teacher-made video lessons in Science 4, specifically in the Third Quarter which is all about Physics via flash drive and an OTG adaptor so that the students can use it in any gadgets they have as a learning tool without connecting to the internet.

Based on the profiling done by the researcher through an online survey among Grade 4 learners and their parents to gauge their readiness and the availability of the device for the utilization of the teacher-made video lessons, seventy-six percent (76%) have smartphones that they can use to watch the videos. Twenty-four percent (24%) had access to smart television with a flash drive port, and three percent (3%) had access to laptops and desktops, which they can use for offline learning. The data gathered gave the researcher an overview on how students watched the video lessons.

The data on the compatibility of OTG adaptor were also collected through survey and seventy-four percent (74%) of learners had a Micro-USB type port and twenty-six percent (26%) of them had a USB-type C port. This was the basis for acquiring the materials and preventing incompatibility and unavailability of the resources.

The respondents were also composed of 75 teachers, a combination of fifteen (15) Master Teachers and sixty (60) Science Teachers from the District of Pila. The respondents were asked to answer an online survey questionnaire checklist together with the comments and suggestions to determine the influence of using teacher-made video lessons as a teaching strategy in improving the students' academic performance in Science 4.

2.3 Research Instrument

In this study, the researcher utilized a checklist questionnaire and was answered by Master Teachers and Science Teachers who are teaching in the District of Pila and the respondents from Pansol Elementary School. The said questionnaire was validated with the help of the researcher's panel members.

The following legends were used.

| Rating | Scale | Remarks | Verbal Interpretation |
|--------|-----------|----------------------|-----------------------|
| 5 | 4.21-5.00 | Extremely Acceptable | Very High |
| 4 | 3.41-4.20 | Very Acceptable | High |
| 3 | 2.61-3.40 | Acceptable | Moderate |
| 2 | 1.81-2.60 | Slightly Acceptable | Low |
| 1 | 1.00-1.80 | Not Acceptable | Very Low |

The frequency of responses of the evaluators was used in defining the status of the developed and validated intervention made by the researcher, which is the offline video lessons in the Modular Distance Learning.

A test instrument was constructed to know the performance of the respondents. The pre-test consists of fifty (50) items given to the students in Science before introducing the use of video lessons.

The researcher adopted the Department of Education Mastery level to determine the level of the learner's performance in the pre-test and post-test.

Table 1. Mastery Level

| Score | Mastery Level |
|-------|---------------------------|
| 41-50 | Outstanding |
| 31-40 | Very Satisfactory |
| 21-30 | Satisfactory |
| 11-20 | Fairly Satisfactory |
| 0-10 | Did Not Meet Expectations |

2.4 Statistical Treatment

The proponent utilized purposive sampling which is the process of selecting a sample that relies on the proponents judgement when choosing members of the population to participate in the study to answer the research questions or achieve the objectives of the research.

Table 2. Purpose and Statistical Treatment for the interpretation of data

| Purpose | Statistical Treatment |
|---|--------------------------|
| 1. Degree of acceptance of the teacher-made video lessons in terms of signaling, segmenting, learning style, adaptability, and aesthetic Value. | Mean, Standard deviation |
| 2. Level of the students' academic performance in terms of pre- test and post-test. | Frequency and Percentage |
| 3. Level of students' perception in the teacher-made video lessons in terms of students' engagement. | Mean, Standard deviation |
| 4. The significant difference in the level of acceptability of the teacher made video lessons on the given criteria as rated by Master Teachers and Science Teachers. | F-test |
| 5. The significant difference on the level of performance of students in terms of pre-test and post-test. | T-test |

3. RESULTS AND DISCUSSION

This section presents the analysis and interpretation of the results of the researcher's survey findings. This section also aims to answer the objectives as a basis to determine the influence of the teacher-made video lessons in the performance of students in Physics for elementary learners.

1. Determine the level of acceptability of the teacher made video lessons in Physics for elementary learners in terms of:

- 1.1 Signaling;
- 1.2 Segmenting;
- 1.3 Learning Style;
- 1.4 Adaptability; and
- 1.5 Aesthetic Value.

Table 3. Level of Acceptability of the Teacher-Made Video Lessons in terms of Signaling

| STATEMENT | SCIENCE TEACHERS | | REMARKS | MASTER TEACHERS | | REMARKS |
|---|------------------|-----------|----------------------|-----------------|-----------|----------------------|
| | M | SD | | M | SD | |
| 1. Highlights the critical information that helps direct learners' attention. | 4.60 | 0.49 | Extremely Acceptable | 4.60 | 0.51 | Extremely Acceptable |
| 2. Emphasizes information so learners can see the relationship between ideas and concepts. | 4.58 | 0.50 | Extremely Acceptable | 4.53 | 0.52 | Extremely Acceptable |
| 3. Explanation is verbal as a text passage: Uses on-screen text and symbols to stress important information. | 4.55 | 0.50 | Extremely Acceptable | 4.60 | 0.51 | Extremely Acceptable |
| 4. Explanation is presented in a verbal form as speech: Pointer words such as because, therefore, etc., are spoken with proper stress and intonation. | 4.55 | 0.50 | Extremely Acceptable | 4.40 | 0.51 | Extremely Acceptable |
| 5. Explanation is presented in verbal and visual form as narrated animations: using animations that convey the concept and the narrator. | 4.58 | 0.50 | Extremely Acceptable | 4.53 | 0.52 | Extremely Acceptable |
| Overall mean | | 4.57 | | | 4.53 | |
| Standard deviation | | 0.50 | | | 0.50 | |
| Verbal Interpretation | | Very High | | | Very High | |

Table 3 shows the level of acceptability of the teacher-made video lessons in Science 4 in terms of Signaling, which is also known as cues, it is the process of applying on-screen language or symbols to highlight information that is deemed to be relevant.

As for the science teachers, among the statements above, “Highlights the critical information that helps direct learners’ attention” yielded the highest mean score ($M=4.60$, $SD=0.49$) and was remarked as Extremely Acceptable. On the other hand, the statement “Explanation is verbal as a text passage: Uses on-screen text and symbols to stress important information” received the lowest mean score of responses with ($M=4.55$, $SD=0.50$) yet was also remarked as Extremely Acceptable.

As for the master teachers, “Highlights the critical information that helps direct learners’ attention” yielded the highest mean score ($M=4.60$, $SD=0.51$) and was remarked as Extremely Acceptable. On the other hand, the statement “Explanation is presented in a verbal form as speech: Pointer words such as because, therefore, etc., are spoken with proper stress and intonation” received the lowest mean score of responses yielded the highest mean score ($M=4.40$, $SD=0.51$) and yet was also remarked as Extremely Acceptable.

As reflected in the data, the respondents rated Extremely Acceptable in all items in the survey questionnaire. Overall, the level of acceptability of the teacher-made video lessons in terms of signaling as per science teachers gained a mean score of 4.57 and a standard deviation of 0.50 and was verbally interpreted as Very High. As per master teachers, it gained a mean score of 4.53 and a standard deviation of 0.50 and was remarked as Very High. The result is extremely acceptable, and it implies that signaling is evident in the teacher-made video lesson and helps direct learner attention. This method boosts students' capacity to retain and transfer new information from animations, text, and activities. It was discovered that signaling improves retention and performance and affected motivation and learning to be fun and engaging in Physics for elementary learners.

This is comparable to the findings that Mayer (2014) obtained, which said that the effectiveness of multimedia learning materials could be improved by the addition of cues that direct learners' attention to the key aspects of the material or highlight the arrangement of the material. The design of cues based on the eye movements of successful students and the impact of employing the eye movements of experts or students as cues are both topics covered in this article.

Table 4. Level of Acceptability of the Teacher-Made Video Lessons in terms of Segmenting

| STATEMENT | SCIENCE TEACHERS | | REMARKS | MASTER TEACHERS | | REMARKS |
|---|------------------|-----------|----------------------|-----------------|-----------|----------------------|
| | M | SD | | M | SD | |
| 1. Provides review of the previous lesson and gives learners the time and capacity to process and organize new information. | 4.72 | 0.45 | Extremely Acceptable | 4.47 | 0.52 | Extremely Acceptable |
| 2. Breaks down the information into chunks for the learners to easily understand the lesson. | 4.63 | 0.49 | Extremely Acceptable | 4.60 | 0.51 | Extremely Acceptable |
| 3. Provides instructional content that is systematic and comprehensive. | 4.68 | 0.47 | Extremely Acceptable | 4.33 | 0.62 | Extremely Acceptable |
| 4. Gives a range of ideas and activities aligned with the curriculum. | 4.70 | 0.46 | Extremely Acceptable | 4.53 | 0.52 | Extremely Acceptable |
| 5. Guides the learners to the relationship of the activities as applications of concepts. | 4.65 | 0.48 | Extremely Acceptable | 4.60 | 0.51 | Extremely Acceptable |
| Overall mean | | 4.68 | | | 4.51 | |
| Standard deviation | | 0.47 | | | 0.53 | |
| Verbal Interpretation | | Very High | | | Very High | |

As for the science teachers, among the statements above, “Provides a review of the previous lesson and gives learners the time and capacity process and organize new information” yielded the highest mean score ($M=4.72$, $SD=0.45$) This is followed by “Gives a range of ideas and activities aligned with the curriculum” with a mean score ($M=4.70$, $SD=0.46$) and was also remarked as Extremely Acceptable. On the other hand, the statement “Breaks down the information into chunks for the learners to easily understand the lesson” received the lowest mean score of responses ($M=4.63$, $SD=0.49$) yet was also remarked as Extremely Acceptable.

As for the master teachers, “Breaks down the information into chunks for the learners to easily understand the lesson” yielded the highest mean score ($M=4.47$, $SD=0.52$) and was remarked as Extremely Acceptable. On the other hand, the statement “Provides instructional contents that are systematic and comprehensive” received the lowest mean score of responses ($M=4.33$, $SD=0.62$) yet was also remarked as Extremely Acceptable.

As per science teachers, the overall result gained a mean score of 4.68 and a standard deviation of 0.47 and was verbally interpreted as Very High. As per master teachers, it gained a mean score of 4.51 and a standard deviation of 0.53 and was remarked as Very High.

The result reveals that the teacher-made video lessons are neither too short nor too long and break down complex information into simpler ones which helped the learners to not get bored. This is because learners have a limited capacity and attended the tasks at hand and the human mind can only simultaneously process small portions of multiple visual and auditory stimuli. In addition, it is consistent with the evidence that segmenting principles reduce perceived cognitive load by directing students' attention to the main aspects of the learning material, providing concise cues about relevant information, and guiding them to organize only the most crucial information.

This is similar to a study by Guo et al. (2014), who found that segmentation, or chunking material in a video lecture, complements signaling advantages. Segmentation allows students to interact with little chunks of new material and gives them control over the flow of new information. It manages intrinsic load and can raise germane load by stressing the information's structure. Segmenting can be performed by creating shorter movies and inserting "click forward" breaks inside a video to ask students a question and then prompt them to click forward once the question has been answered. Both forms of segmentation have increased student interest in video content.

Table 5. Level of Acceptability of the Teacher-Made Video Lessons in terms of Learning Style

| STATEMENT | SCIENCE TEACHERS | | REMARKS | MASTER TEACHERS | | REMARKS |
|--|------------------|-----------|----------------------|-----------------|-----------|----------------------|
| | M | SD | | M | SD | |
| 1. Provides the objectives evidently seen in the instructions and assessment. | 4.62 | 0.49 | Extremely Acceptable | 4.60 | 0.51 | Extremely Acceptable |
| 2. Has selected relevant images arranged into a coherent pictorial representation. | 4.57 | 0.50 | Extremely Acceptable | 4.53 | 0.52 | Extremely Acceptable |
| 3. Organized the selected relevant words into a coherent verbal representation. | 4.58 | 0.50 | Extremely Acceptable | 4.47 | 0.52 | Extremely Acceptable |
| 4. Uses audio/verbal and visual/pictorial to convey new information. | 4.72 | 0.45 | Extremely Acceptable | 4.73 | 0.46 | Extremely Acceptable |
| 5. Shows an animation of a process on-screen while narrating it to use different channels. | 4.70 | 0.46 | Extremely Acceptable | 4.60 | 0.63 | Extremely Acceptable |
| Overall mean | | 4.64 | | | 4.59 | |
| Standard deviation | | 0.48 | | | 0.52 | |
| Verbal Interpretation | | Very High | | | Very High | |

Table 5 reveals the degree to which the teacher-made video lessons in Science 4 are acceptable in terms of learning style. It can be defined as the utilization of both the audio/verbal and the visual/pictorial channel to convey new information to the medium that is best suited to communicate it with the viewers and/or learners.

As for the science teachers, among the statements above, "Uses both audio/verbal and visual/pictorial to convey new information" yielded the highest mean score ($M=4.72$, $SD=0.45$) and was remarked as Extremely Acceptable. On the other hand, the statement "Has selected relevant images arranged into a coherent pictorial representation" received the lowest mean score of responses ($M=4.57$, $SD=0.50$) yet was also remarked as Extremely Acceptable.

As for the master teachers, "Uses both audio/verbal and visual/pictorial to convey new information" yielded the highest mean score ($M=4.73$, $SD=0.46$) and was remarked as Extremely Acceptable. On the other hand, the statement "Organized the selected relevant words into a coherent verbal representation" received the lowest mean score of responses ($M=4.47$, $SD=0.52$) yet was also remarked as Extremely Acceptable.

Overall, as reflected in the data in terms of learning style as per science, teachers gained a mean score of 4.64 and a standard deviation of 0.48, and was verbally interpreted as Very High. As per master teachers, it gained a mean score of 4.59 and a standard deviation of 0.52 and was remarked as Very High.

The result indicates that the teacher made video lessons use both audio and visual presentation to convey appropriate and complementary information suited with their individual learning style to increase students' retention and ability to transfer information and increase student engagement with videos. For example, displaying an animation of a process on the screen while narrating it by the speaker influences both channels to explain the process, providing the learner with dual and complementary information streams to highlight characteristics that should be processed. Using both channels that are suited to the students learning style to deliver relevant and complementary information has been found to boost students' capacity to comprehend, retain and transfer information. With matching learning style, students are engaged and focused on watching the videos.

The findings of this study confirm the studies conducted by Ross (2018), who discovered that the usage of films for training and education had increased considerably due to technological improvements. Making, distributing, and sharing videos with larger audiences is now simpler. In addition, videos are distinctive because they can appeal to all learning styles, including visual and verbal learners.

Table 6. Level of Acceptability of the Teacher-Made Video Lessons in terms of Adaptability

| STATEMENT | SCIENCE TEACHERS | | REMARKS | MASTER TEACHERS | | REMARKS |
|---|------------------|-----------|----------------------|-----------------|-----------|----------------------|
| | M | SD | | M | SD | |
| 1. Serves as a tool that can be used in different learning modalities. | 4.68 | 0.47 | Extremely Acceptable | 4.73 | 0.46 | Extremely Acceptable |
| 2. Easy to utilize and anchors in the 21 st -century method of teaching. | 4.60 | 0.49 | Extremely Acceptable | 4.67 | 0.49 | Extremely Acceptable |
| 3. Provides activities aligned to the students' various learning styles. | 4.65 | 0.48 | Extremely Acceptable | 4.60 | 0.51 | Extremely Acceptable |
| 4. Contains varied, challenging tasks that target learners of different aptitude levels can do. | 4.52 | 0.54 | Extremely Acceptable | 4.53 | 0.52 | Extremely Acceptable |
| 5. Flexible and can be rewatched by the learners at their most convenient time. | 4.60 | 0.49 | Extremely Acceptable | 4.53 | 0.52 | Extremely Acceptable |
| Overall mean | | 4.61 | | | 4.61 | |
| Standard deviation | | 0.50 | | | 0.49 | |
| Verbal Interpretation | | Very High | | | Very High | |

As for the science teachers, among the statements above, “Serves as a tool that can be used in different learning modalities” yielded the highest mean score ($M=4.68$, $SD=0.47$) and was remarked as Extremely Acceptable. On the other hand, the statement “Contains varied, challenging tasks that can be done by target learners of different aptitude levels” received the lowest mean score of responses ($M=4.52$, $SD=0.54$) yet was also remarked Extremely Acceptable.

As for the master teachers, “Serves as a tool that can be used in different learning modalities” yielded the highest mean score ($M=4.73$, $SD=0.46$) and was remarked as Extremely Acceptable. On the other hand, the statements “Flexible and can be rewatched by the learners in their most convenient time” received the lowest mean score of responses with ($M=4.53$, $SD=0.52$) yet were also remarked as Extremely Acceptable.

As per science teachers, it gained a mean score of 4.61 and a standard deviation of 0.50 and was verbally interpreted as Very High. As per master teachers, it gained a mean score of 4.61 and a standard deviation of 0.49 and was remarked as Very High.

The result indicates that the teacher-made video lesson is adaptable to change and embraces complexity. The video lesson involves asking different questions considering different perspectives considering the bigger picture, and experimenting. Since the world gets more complex as time goes by, being adaptable is a great benefit.

This is similar to the findings of Tan (2015) that adaptability is the ability to respond to change and foresee the consequences. Therefore, videos should promote flexibility and go with the flow.

Berger (2015) asserts that a mental shift to accept complexity and change is crucial. Adaptability is a significant benefit due to the increasing complexity of the environment over time.

Table 7. Level of Acceptability of the Teacher-Made Video Lessons in terms of Aesthetic value

| STATEMENT | SCIENCE TEACHERS | | REMARKS | MASTER TEACHERS | | REMARKS |
|--|------------------|-----------|----------------------|-----------------|-----------|----------------------|
| | M | SD | | M | SD | |
| 1. Contains icons that are visually pleasing and easy to understand. | 4.53 | 0.50 | Extremely Acceptable | 4.53 | 0.52 | Extremely Acceptable |
| 2. Uses appropriate text font, size, and type. | 4.60 | 0.53 | Extremely Acceptable | 4.60 | 0.51 | Extremely Acceptable |
| 3. Use illustrations that are interesting and suited to the lessons. | 4.65 | 0.52 | Extremely Acceptable | 4.67 | 0.49 | Extremely Acceptable |
| 4. Contains visuals that fit the level of interests, knowledge, and skills of the target learners. | 4.65 | 0.48 | Extremely Acceptable | 4.60 | 0.51 | Extremely Acceptable |
| 5. Incorporates illustrations that simplify complex concepts and contribute to the acquisition of science processing skills. | 4.58 | 0.50 | Extremely Acceptable | 4.53 | 0.52 | Extremely Acceptable |
| Overall mean | | 4.60 | | | 4.59 | |
| Standard deviation | | 0.50 | | | 0.50 | |
| Verbal Interpretation | | Very High | | | Very High | |

Table 7 illustrates the level of acceptability of the teacher-made video lessons in Science 4 in terms of aesthetic value that gives positive emotions that even the usual designs of instructional materials could be redefined that makes the learners affect and motivates their mood and feelings to lead in good learning results in influencing the feelings of the readers.

As for the science teachers, among the statements above, "Make use of illustrations which are interesting and suited to the lessons" yielded the highest mean score and was remarked as Extremely Acceptable. On the other hand, the statement "Contains icons that are visually pleasing and easy to understand" received the lowest mean score of responses yet was also remarked as Extremely Acceptable.

As for the master teachers, "Make use of illustrations which are interesting and suited to the lessons" yielded the highest mean score and was remarked as Extremely Acceptable. On the other hand, the statement "Contains icons that are visually pleasing and easy to understand" received the lowest mean score of responses yet was also remarked as Extremely Acceptable.

Overall, as per science teachers it gained a mean score of 4.60 and a standard deviation of 0.50 and was verbally interpreted as Very High. As per master teachers, it gained a mean score of 4.59 and a standard deviation of 0.50 and was remarked as Very High.

The result indicates that the teacher-made video lesson motivates the learners intrinsically to watch and re-watch the video. Font text and size, icons, colors, margins, and designs, as well as the aesthetic appeal of the material, which are crucial for encouraging readers to use it, are presented, and the students can be motivated to study well with the use of materials that are attractive and good appealing.

This is sustained by the study of Silverman (2015) that visual design is concerned with the aesthetics of usability and its associated components through the thoughtful execution of images, fonts, lines, shapes, typography, and other fundamentals. A compelling visual design always carries the value of aesthetics by incorporating content.

Khaliland (2016) suggests that aesthetics gives positive emotions that even the usual designs of instructional materials could be redefined to make the learners affect and motivate their mood and feelings to lead to good learning, resulting in influencing the feelings of the readers. Accordingly, some ways of using aesthetics learning enhancement such as the faced value that avoids negative emotions. Intrinsic motivations will lead to encouragement without the need for rewards and avoid negative illustrations The students can be motivated well to study the lessons well if the materials are attractive and good appealing.

According to Plato and Meskin (2013), aesthetic value is the importance of an object, event, or situation which possesses the capability to elicit pleasure or displeasure when experienced or appreciated aesthetically. As quoted, the word aesthetic came from the Greek word "aesthesia," meaning sensory perception.

2. Assess the level of the students' performance in terms of:
 - 2.2 Pre-test; and
 - 2.3 Post-test.

Table 8. Level of Students' Performance in terms of Pre-Test and Post-test

| Range | Pre-test | | Post-test | | Remarks |
|-----------------------|-----------|--------------|-----------|-------------------|---------------------------|
| | Frequency | Percentage | Frequency | Percentage | |
| 41 to 50 | 5 | 8.33 | 16 | 26.67 | Outstanding |
| 31 to 40 | 17 | 28.33 | 27 | 45.00 | Very Satisfactory |
| 21 to 30 | 25 | 41.67 | 17 | 28.33 | Satisfactory |
| 11 to 20 | 13 | 21.67 | 0 | 0.00 | Fairly Satisfactory |
| 0 to 10 | 0 | 0.00 | 0 | 0.00 | Did Not Meet Expectations |
| Total | 60 | 100.00 | 60 | 100.00 | |
| Overall Mean | | 27.18 | | 36.72 | |
| Standard Deviation | | 8.68 | | 7.03 | |
| Verbal Interpretation | | Satisfactory | | Very Satisfactory | |

As for the pre-test, out of sixty (60) students, twenty-five (25) or about 41.67% of the population garnered scores from 21 to 30 satisfactory points. For the post-test, twenty-seven (27) students out of the sixty (60) respondents gained scores from 31 to 40, which was very satisfactory.

Overall, the level of students' performance in terms of the pre-test was satisfactory, with a mean score of 27.18 and a standard deviation of 8.68. The post-test result was very satisfactory, with the mean score of the students at 36.72 with a standard deviation of 7.03. It can be gleaned from the data that there is a remarkable increase in mean scores in the pre-test or post-test.

3. Evaluate the level of perception of students in the teacher-made video lessons in terms of students' engagement.

Table 9. Level of Perception of the Students in the Teacher-Made Video Lessons in terms of Students' Engagement

| STATEMENT | MEAN | SD | REMARKS |
|--|------|-----------|----------------|
| 1. I successfully achieved the learning objectives with the help of the video lessons. | 5.00 | 0.00 | Strongly Agree |
| 2. I noticed strong evidence of preparation in every instructional episode. | 5.00 | 0.00 | Strongly Agree |
| 3. I could answer the guide questions about the activities because the video lessons provided the activities for the students who didn't have the needed materials. | 5.00 | 0.00 | Strongly Agree |
| 4. I answered the learning tasks quickly because the important key points of the activities are discussed very well. | 4.85 | 0.36 | Strongly Agree |
| 5. I learned new concepts and its connections with previous lessons. | 4.87 | 0.34 | Strongly Agree |
| 6. I am eager to learn because the video lessons fill my curiosity by doing experiments in my own phase. | 4.75 | 0.44 | Strongly Agree |
| 7. I listen attentively because the video lessons are in conversational language. | 4.82 | 0.39 | Strongly Agree |
| 8. I am focused because the teacher is enthusiastic and engaging to watch and listen to. | 4.78 | 0.42 | Strongly Agree |
| 9. I am happy to watch the video lessons because the teacher provides feedback. | 4.87 | 0.34 | Strongly Agree |
| 10. I feel intrinsically motivated to gain a new and deeper understanding of the lessons. | 4.92 | 0.28 | Strongly Agree |
| 11. I am extrinsically motivated to learn because I feel that I'm in a classroom with my teacher and classmates. | 4.88 | 0.32 | Strongly Agree |
| 12. I am engaged with the video lessons because it is not too short or too long. | 4.77 | 0.46 | Strongly Agree |
| 13. I followed the instructions cheerfully because it gave a conducive classroom environment ambiance. | 4.83 | 0.38 | Strongly Agree |
| 14. I am provided with enough time to comply with the learning tasks because I can watch them again. | 4.83 | 0.38 | Strongly Agree |
| 15. I feel safe because the video lessons always have a reminder to handle the materials with care and ask for some guidance from our parents and/or guardians in performing the activity. | 4.78 | 0.42 | Strongly Agree |
| Overall Mean | | 4.86 | |
| Standard Deviation | | 0.35 | |
| Verbal Interpretation | | Very High | |

Table 9 illustrates the students' perception level in the teacher-made video lesson in terms of students' engagement. It refers to how focused, curious, interested, optimistic, and passionate students are when learning or being taught and the level of motivation they need to know and advance in their education. One of the variables assessed is how the learners are engaged in watching and re-watching the videos.

The overall result of mean scores of 4.86 and a standard deviation of 0.35 and was remarked as Very High indicates that the learners engaged, engrossed, focused, and concentrated in the lesson when they used the teacher-made video lesson in their Science class.

The result implies that students strongly agreed that the teacher-made video lessons in very engaging to watch and listen to. It is because the videos are in conversational language and feel like they are in a classroom with the teacher. Also, it is not too short nor too long therefore, they don't get bored watching it.

This is similar to the findings of Guo et al. (2014) that Educators can also increase student engagement with educational films by producing or packaging them to suggest that the content is intended for these particular pupils. One of the benefits of using educational videos for instructors is the option to reuse them for future classes and semesters. When developing or selecting videos, it is essential to assess whether they were designed for the area in which they will be utilized. For instance, a face-to-face classroom video videotaped and presented in an online class may feel less engaging than a video developed with an online environment as its primary focus.

The result is related to the research of Brame (2016) that student engagement is another factor to consider while evaluating educational videos. The concept is straightforward: students cannot learn from videos if they do not watch them. The first and foremost rule for enhancing student attention to educational videos is to keep them brief. They found that the median engagement time for videos under six minutes in length was close to 100 percent, indicating that students tended to watch the entire video. However, as video duration increased, student participation decreased.

4. Determine the significant difference in the level of acceptability of the teacher-made video lessons in Physics for elementary learners on the given criteria as rated by:

4.1 Master teachers; and

4.2 Science teachers.

Table 10. Significant Difference between the Level of Acceptability of the Teacher-Made Video Lessons on the Given Criteria as rated by Master Teachers and Science Teachers

| Criterion | Teachers | Mean | F-Value | F-Critical | P-value | Analysis |
|-----------------|------------------|------|---------|------------|---------|-----------------|
| Signaling | Science Teachers | 4.57 | 0.117 | 3.972 | 0.732 | Not Significant |
| | Master Teachers | 4.53 | | | | |
| Segmenting | Science Teachers | 4.68 | 2.096 | 3.972 | 0.152 | Not Significant |
| | Master Teachers | 4.51 | | | | |
| Learning Style | Science Teachers | 4.64 | 0.194 | 3.972 | 0.661 | Not Significant |
| | Master Teachers | 4.59 | | | | |
| Adaptability | Science Teachers | 4.61 | 0.001 | 3.972 | 0.976 | Not Significant |
| | Master Teachers | 4.61 | | | | |
| Aesthetic Value | Science Teachers | 4.60 | 0.017 | 3.972 | 0.897 | Not Significant |
| | Master Teachers | 4.59 | | | | |
| | Science Teachers | 4.62 | 0.246 | 3.972 | 0.621 | Not Significant |
| | Master Teachers | 4.57 | | | | |

Table 10 presents the significant difference between the level of acceptability of the teacher-made video lessons on the given criteria as rated by master teachers and science teachers.

The test results show that there is no significant difference between the evaluation of the two group of respondents. This is based on the computed F-value of (0.246), much less than the F-critical value of (3.972). Also, the computed p-value is (0.621), which is much greater than the significance alpha of 0.05 hence the absence of a significant result.

From the findings above, it can be deduced that at a 0.05 level of significance, the null hypothesis “There is no significant difference in the level of acceptability of the teacher-made video lessons on the given criteria as rated by Master Teachers and Science Teachers” is true. Hence there is no difference observed.

The result indicates that both respondents have the same analysis and observation of the teacher-made video lessons. It also shows that the video lessons present the key features needed for its effectiveness, such as signaling, segmenting, learning style, adaptability, and aesthetic value. Therefore, both experts can utilize the video lessons in Science class.

This result is supported by the study of Uy (2016), that visual technology materials positively impact students’ learning rated by elementary teachers and experts who rated the output of the study and shared their comments and suggestions. The result of the study implies that students learn independently with these materials that offer different activities and can be a substitute for books.

5. Determine the significant difference in the level of performance of students in terms of:

5.1 Pre-test; and

5.2 Post-test.

Table 11. Significant Difference between the Level of Performance of the Students in terms of the Pre-Test and Post-test

| Performance | Mean | Computed t | t critical | P-value | Analysis |
|-------------|--------|------------|------------|---------|-------------|
| Pre-Test | 27.183 | -20.617 | 2.001 | 0.000 | Significant |
| Post-test | 36.717 | | | | |

Table 11 presents the significant difference between the students' level of performance in terms of the pre-test and post-test. The test results show that there is a significant difference between the two. This is based on the computed t-value of (-20.617), which is much greater than the t-critical value of (2.001). This suggests that the pre-test scores are much lesser than the post-test scores. Also, the computed p-value is (0.000), which is much lesser than the significance alpha of 0.05 hence the presence of a significant result.

The findings above conclude that at a 0.05 level of significance, the null hypothesis “There is no significant difference on the level of performance of students in terms of pre-test, and post-test” is rejected. Hence it incites that there is a significant difference in the results.

The result indicates that students showed improved performance in the post-test. The use of teacher-made video lessons greatly influences a better understanding of the competencies being taught.

This result parallels the study of Hernandez (2019) that the use of technology specifically video clips in teaching has a great impact on students learning. This shows the result of the study through the pre-test and post-test scores of the respondents.

4. CONCLUSION AND RECOMMENDATION

The study used descriptive and experimental research methods to determine the influence of the teacher-made video lesson on the performance of students in Physics for Elementary learners.

The researcher used the self-made questionnaire to collect the necessary data from the respondents that are needed for the study. Pre-test and post-test were also administered, comprising a fifty (50) item test about certain topics in Science 4 in the third quarter.

The forty (40) item questionnaires used for the administration of pre-test and post-test for the sixty (60) students were first validated by the panel members and administered first to fifteen (15) Grade IV learners in other schools. The Cronbach Alpha was used to measure the validity of the questionnaire used. The subscale of each variable ranges between $\alpha = 0.957$ and $\alpha = 0.831$. This only means that the questions constructed have excellent reliability and are highly consistent.

Based on the computation, it was clearly shown that the level of acceptability of the teacher-made video lessons in terms of signaling, segmenting, learning style, adaptability, and aesthetic value is “Highly Acceptable” based on the ratings given by Master teachers and Science teachers. It only shows that all the variables are evident in the videos to help learners learn easily and resourcefully.

The results revealed that the level of students’ performance in terms of the pre-test score was satisfactory to post-test scores of very satisfactory. It can be gleaned from the data that there is a remarkable increase in mean scores in the pre-test or post-test. It proved that using teacher-made video lessons influences their learning and improves their performance in Science 4 specifically in Physics.

The students who underwent teaching agreed that they were engaged using the teacher-made video lessons. The result was remarked as Very High, indicating that the learners engaged, engrossed, focused, and concentrated in the lesson when they used the teacher-made video lesson in their Science class.

The test results show that there is no significant difference between the ratings of Master Teachers and Science teachers hence the absence of a significant result. The null hypothesis “There is no significant difference in the level of acceptability of the teacher-made video lessons on the given criteria as rated by Master Teachers and Science Teachers” is true. Hence there is no difference observed.

The test results show that there is a significant difference between the two. This suggests that the pre-test scores are much lesser than the post-test scores. The null hypothesis “There is no significant difference on the level of performance of students in terms of pre-test and post-test” is rejected, which calls for the acceptance of the alternative. Hence it incites that there is a significant difference in the results.

From these findings, the proponent denotes that teacher-made video lessons influenced learners' performance and made education more accessible to everyone. It addressed the gap between parents, learners, and teachers for science learning to continue, progress, and retain. It can be gleaned from the data that the unavailability of internet connection is also addressed with the use of flash drive and OTG adapter, the criteria assessed is present, and the learners learned on their own and improved their performance and helped the parents’ guide their children. No students are left behind in this platform, and it can be used with different distance learning modalities, whether a pandemic situation or not.

Through the conclusion drawn from the findings, the following recommendations were made.

1. Future-driven studies may explore the possible positive effects of watching more teacher-made video lessons to learners in their performance, attitude, and behavior. Moreover, consider the suggestions and feedback of teachers and students who evaluated and assessed the video lessons to enhance the material.

2. The school administration may conduct seminars and training on video editing and production for teachers to broaden their knowledge and skills in making video lessons.

3. Teachers are encouraged to make their own video lessons in Science to promote a better quality of education and may use it in their class to improve their skills and ability and to be globally competitive.

4. Teachers are encouraged to use video lessons in other learning areas such as English and Math for it is where the learners are challenged especially at the elementary level, where it is the foundation of learning.

5. The study may be proposed to Local Government Units and other stakeholders to fund the acquisition of flash drives and OTG adaptors.

6. The study may be presented and recommended as one of the school projects and may be applied in other grade levels and learning areas.

5. ACKNOWLEDGMENTS

First and foremost, the researcher would like to thank the Almighty God for his knowledge, wisdom, and protection to work throughout this research. Vilma M. Geronimo, PhD, her Thesis Adviser, for patience, support, assistance, pieces of advice, corrections, and reinforcements to make the study successful. Maria Eva E. Diongo, EdD, her Technical Expert, for giving the researcher suggestions to improve the study. Marie Ann S. Gonzales, MAT, her Statistician, for her commendable assistance and help extended to the researcher. Regina E. Gloria, PhD, Subject Specialist, for her worthy comments and recommendations about the study. Michael William V. Puna III, EdD, her external panel member who impart his knowledge and expertise in the study. Nimfa G. Dimaculangan, PhD., English Critic, who patiently edited the language of the paper. Benjamin O. Arjona, EdD., External Statistician, who patiently assisted the researcher in interpreting the collected data.

Above all, the researcher wants to thank her family; no one has been more important to her in the completion of this project than her loved ones. Also, the researcher's inspiration, John Raymond S. Roda I for his unending love and support. In all we do, we value their financial support as well as their love, care, and knowledge.

6. REFERENCES

- Agaton, et.al (2021). Learning at home: Parents' lived experiences on distance learning during COVID-19 pandemic in the Philippines. Vol.10, No. 3, 901~911. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1313094.pdf>
- Brame (2016). Effective Educational Videos: Principles and Guidelines for Maximizing Student Learning from Video Content. Retrieved from. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5132380/>
- Berger, J (2015). four steps to becoming more adaptable to change. Retrieved from. [HTTP/WWW.Fastcompany.Com3043314_steps_to_becoming_more_adaptable_to_change](http://WWW.Fastcompany.Com3043314_steps_to_becoming_more_adaptable_to_change). best practices in reading: at 21st century skill update Eva Coolblue. On The Go. Retrieved from. <https://www.coolblue.nl/en/advice/what-is-usb-otg.html>
- DepEd Order no. 032 s.(2020). Retrieved from. https://www.deped.gov.ph/wp-content/uploads/2020/10/DO_s2020_032-1-1.pdf
- Guo (2014). How video production affects student engagement: an empirical study of MOOC videos Published: 04 March 2014- <https://dl.acm.org/doi/abs/10.1145/2556325.2566239>
- Hernandez, Kathleen (2019). Efficacy of Teaching Mathematics using Video Clips on the Grade VI Performance in Mathematics. Laguna State Polytechnic University. Sta. Cruz Main Campus
- Key, (2012). Experimental research. Research methods (2nd edition) Retrieved from. <https://www.sciencedirect.com/topics/social-sciences/>
- Khaliland, Mohammed K. (2016) 11 AP 2016. Retrieved from. <https://doi.org.advan00138.2015c> Copyright 2 2016 The American Psychological Society
- Mayer, R. E (2014). Coordinating visual and auditory cueing in multimedia learning. *Journal of Educational Psychology*, 111(2), 235–255. Retrieved from. <https://doi.org/10.1037/edu0000285>
- Plato, L. and Meskin A. (2013) "Unedited Draft Entry on Aesthetic Value Forthcoming" Retrieved from www.nottingham.ac.uk/humanities/aesthetic-value
- Reimers (2020) Supporting the continuation of teaching and learning during the COVID-19 Pandemic. Retrieved from www.OECD.org/education
- Ross, Chris (2018). Using Video in Combination With Other Modalities. Retrieved from <https://trainingindustry.com/articles/learning-technologies/using-video-in-combination-with-other-modalities/>

- Santos(2020) Distribution of OTG flash drive with blended learning materials to students. Retrieved from. <https://mb.com.ph/2020/09/30/makati-city-to-distribute-otg-flash-drive-with-blended-learning-materials-to-students/>
- Shields, et.al, (2013) Educational research productivity road map: Conclusions from the identified research barriers and variables. Retrieved from. https://www.researchgate.net/publication/346486154_Educational_research_productivity_road_map_Conclusions_from_the_identified_research_barriers_and_variables
- Silverman (2015) . Paper on How visual design influences in conveying messages to customers and viewers. https://www.theseus.fi/bitstream/handle/10024/347424/Dinh_Nguyen%20Phuong%20Trinh.pdf?sequence=2
- Tan, S. (2015) “How well do you handle change?” The benefits of being adaptable to constant change in teaching and learning. Retrieved from https://www.nusiness.com/articles_how_well_do_you_becoming_more_adaptable_to_change
- UNESCO (2020) Policy Brief: Education during COVID-19 and beyond. Retrieved from. https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/08/sg_policy_brief_covid-19_and_education_august_2020.pdf
- Uy, Arlene (2016). Visual Technology for Mother Tongue-Based Multilingual Education (MTB-MLE) Grade One Classroom Managers. Laguna State Polytechnic University. Sta.Cruz Main Campus
- Viner. (2020) School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. Retrieved from. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7270629/>