

# TEACHER-MADE VIDEO LESSON: AN INTERVENTION FOR ONLINE DELIVERY MODALITY IN MATHEMATICS 8

Jomari John Zotomayor Timbreza, L.P.T.

jomarijohn.timbreza@deped.gov.ph

Public School Teacher, Pedro Guevara Memorial National High School, Santa Cruz 4009 Laguna, Philippines

---

## Abstract

The study aimed to determine the level of perception of learners on the Teacher-Made Video Lesson in terms of its characteristics, level of math performance of learners with and without the use of the material, effectiveness of the Teacher-Made Video Lesson through their math performance and relationship of learner's perception on the material and math performance upon using the teacher-made video lesson of selected Grade 8 Students from the selected three schools in Cluster 3 of the Division of Laguna for School Year 2021-2022. Descriptive and experimental methods of research was employed to this study to define the characteristics of the variable under research and answers the questions related to it and to test hypothesis using experimental groups and control variables, respectively.

The learner's perception on the Teacher-Made Video Lesson material was given a remark of very high in all of its characteristics. It was also followed that the controlled group showed approaching proficient level in their math performance without the use of teacher-made video lesson while the experimental group showed advanced level in their math performance as shown by the computed mean. Furthermore, the result of the mathematics performance of learners with and without the use of teacher-made video was significant since the computed t-value was higher than the critical value. Lastly, the relationship of the learner's perception on the teacher-made video lesson and their mathematics performance upon using the material was not significant since the p-value is higher than the significance alpha.

The null hypothesis  $H_{01}$  was rejected. This showed that the teacher-made video lessons was effective as intervention material in teaching Mathematics 8 specifically on the topics in the Third Quarter of the Most Essential Learning Competencies. However, the null hypothesis  $H_{02}$  was accepted. This showed that there is no significant relationship between the perception of learners of the teacher-made video lesson and their math performance.

As a result, teachers should consider the use of the Teacher-Made Video Lesson as an intervention material for them to cope up with students with problem during the online class discussion. Moreover, similar studies about the use of the Teacher-Made Video Lesson learning material as intervention not just only in Mathematics but also in other subject areas should be conducted and use other variables aside from those considered in the study.

Keywords: Video Lesson; Intervention Material; Online Delivery Modality; Math Performance

---

## 1. Main text

### Introduction

Mathematics is one of the subjects learned in Junior High School in the Philippines and it is one of the fundamental instructive segments that expect students to be skilled. The Philippine Mathematics Curriculum is conceived with the twin goals of developing students' critical thinking and problem-solving. The contents are

clustered into five strands: Numbers and Number Sense; Measurement; Geometry; Patterns & Algebra; and Statistics and Probability. For instance, at the end of 2019, the world was stunned by the beginning of the coronavirus in Wuhan, China and the World Health Organization (WHO) pronounced this outbreak a Public Health Emergency. On January 30, 2020, Patient 1, a 39-year-old female, was reported to be detected by polymerase chain reaction (PCR) on the initial swabs as the first confirmed COVID-19 case in the Philippines.

As the people keep on facing the issues brought about by the pandemic, the Learning Continuity Plan (LCP) is the major responsibility of the Department of Education (DepEd) in ensuring the health, safety, and well-being of the learners, teachers, and personnel in the time of COVID-19. The Department of Education implemented different learning delivery modalities such as Modular Distance Learning (MDL), Online Distance Learning (ODL), Blended Learning, and Homeschooling.

Pedro Guevara Memorial National High School, Don Manuel Rivera Memorial Integrated National High School, and Pagsanjan Integrated National High School as part of Cluster 3 schools in the Division of Laguna utilized the Learning Continuity Plan and implemented Modular Distance Learning (MDL) and Online Distance Learning (ODL) as learning delivery modalities of their school. Under the modality of Online Distance Learning (ODL), teachers facilitated learning and engaged students' active participation by utilizing different technologies accessed through the web. Teachers underwent virtual webinars and trainings to be equipped with the different applications that were useful in their teaching. The google classroom platform was used to foster communication, streamline assignments and boost collaboration among students and teachers. Messenger, text messages and phone calls were some of the platforms used to communicate with parents and guardians.

However, during the conduct of Online Distance Learning, students were having difficulty based on their responses in the Weekly Self-Monitoring. Some of the responses were poor internet connection, having a hard time comprehending lesson, and lack of interest in dealing with the lessons. These problems need to be addressed and look for an effective strategy for the students to learn in this time of crisis.

Notwithstanding DepEd's affirmation that each student should be able to deal with the new form of learning, challenges emerge for those individuals who lack resources. One of the main challenges in distance learning is students' difficulty to maintain a stable internet connection. Because learning takes place over the Internet, there is no physical interaction between teachers and students. As a result, sufficient Internet access is required for effective online learning.

## Theoretical Framework

The core idea of multimedia learning was that combining words and pictures allow teachers and students to learn deeper than just words alone. This simple idea may be explained why so many individuals learn new hobbies or new skills by watching YouTube videos. When learning to knit, a newbie can understand and learn by watching a video of an expert knitter constructing a scarf and listening to their verbal explanation. Teachers usually choose textbooks with charts, diagrams, maps, and pictures. They also utilize PowerPoint, Prezi, or videos in their lectures to maintain students' expected interests because of artistic pictures, and diagrams added to words and lectures.

Richard Mayer's Cognitive Theory of Multimedia Learning which was posted in Online Teaching by McGraw Hill Canada (2019), explained how multimedia learning helped basically to individuals who can easily learn using videos. Understanding how the brain processes information is the first step toward understanding why multimedia learning can be so effective. He mentioned the brain receives information and processes it through multiple routes depending on how it is presented. The first channel is for visually represented material, while the second is for auditorily represented material. When a learner is presented with visual information, such as pictures, videos, charts, or printed words, that information is processed in the visual channel. The brain processes auditory information distinct from visual information, such as spoken words in narration and other nonverbal sounds. The new material is first logged in a learner's sensory memory as they learn. The image is preserved in its entirety for a brief instant, or the spoken words are recorded in their entirety. Following that

initial period, the learner must begin to work with the data in order to process and learn it. This takes place in working memory.

The student can work with more information while using two separate channels. Diverse presentations of material are processed differently. The learner can choose appropriate visuals to retain and work within working memory, as well as relevant words to remember and work with. Each of these pieces of data is analyzed and structured into models that assist the reader in comprehending and remembering the information. The knowledge stays separate in working memory, and the learner creates two models.

This theory is related to this study because the emphasis of this theory is on the representation of multimedia learning through visually represented material and auditorily represented material like the teacher-made video lesson. The student combines their previous knowledge and experiences with the visual and audio models. The new knowledge can be stored in long-term memory once all of the material has been combined in a functional way. Multimedia instruction allows students to learn more deeply by utilizing these two distinct channels and allowing them to go through the process of creating various models in order to truly comprehend the material delivered to them.

Gardner's multiple intelligences theory states that an individual possesses at least eight discrete intelligences, with varied strengths and preferences: linguistic, logical-mathematical spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic intelligences. How individuals take information, see the environment, and learn is determined by the relative strengths and weaknesses between and among these intelligences. This is a significant shift from the usual definition of intelligence, which mainly considers verbal and computational abilities (Gomez, 2017).

Gardner's theory proposes that how subject matter is presented has an impact on an individual's ability to learn, and that teachers should consider all of these intelligences when designing instruction, Northern Illinois University Center for Innovative Teaching and Learning (2020). This theory is related to this study as video's multiple modes can take a variety of approaches, such as aesthetic, logical or narrational, in addition to linguistic, thus addressing the needs of a broader range of learners.

One of television and video's greatest assets is its capacity to communicate with viewers on both an emotional and cognitive level. Video can have a substantial positive influence on both motivation and affective learning because of its capacity to engage viewers' emotions. Not only are they essential learning components in and of themselves, but they can also help to create the environment for better cognitive learning.

Tarver (2020) wrote in his article that Arousal Theory of Motivation is dictated by specific levels of (arousal) which psychology represented mental alertness. Accordingly, this theory affects performance that included arousal that is too high or too low can negatively impact performance; difficult task is performed better at moderate or low levels of arousal; easy tasks are performed with low, moderate or high arousal and experts perform better with people watching while novice do better alone. According to Yorke-Dodson Law, the performance on easy tasks tends to remain favorable as high as arousal level is maintained. When it comes to difficult tasks, the performance decline in spite of an increase in arousal level once that certain level is reached. Hence it is best to perform moderately because when an individual is overly aroused, it is difficult to concentrate.

Marshall outlines three hypotheses for how learning might occur through well-chosen video, "based on the potential of entertaining media to engage the learner, trigger emotional states, stimulate interest in a topic, and allow for absorption and processing of knowledge". Arousal Theory is concerned with how communication messages elicit varying degrees of broad emotional arousal, as well as how this affects contemporaneous behavior. Short-Term Gratification Theory is concerned with affective and motivational factors like enthusiasm, perseverance, and attention. Finally, the Interest Stimulation Theory claims that entertainment encourages learning and creativity by sparking a student's interest in and imagination about a subject. These theories are related to this study because emotion has a great influence on memory, and educational video has a powerful ability to communicate experience and influence cognitive learning.

These theories, Richard Mayer's Cognitive Theory of Multimedia Learning, Gardner's Multiple

Intelligences Theory, Marshall's Arousal Theory, Short-Term Gratification Theory, and Interest Stimulation Theory asserted to develop this study through their application. It also provided results that support the study regarding the Teacher-Made Video Lesson: An Intervention for Online Delivery Modality in Mathematics 8 towards enhancing the learning of the students in Mathematics subject.

### Statement of the Problem

The study aims to determine the level of perception of learners on the teacher-made video lesson in terms of its characteristics, level of math performance of learners with and without the use of the material, effectiveness of the teacher-made video lesson through their math performance and relationship of learner's perception on the material and math performance upon using the teacher-made video lesson among the selected Students from the three Schools in Cluster 3 of the Division of Laguna namely Pedro Guevara Memorial National High School, Pagsanjan Integrated National High School, and Don Manuel Rivera Memorial Integrated National High School.

Specifically, it sought to find answer to the following question:

1. What is the level of perception of learners on the teacher-made video lesson in terms of characteristics with regards to:
  - 1.1 Objectives;
  - 1.2 Content;
  - 1.3 Design;
  - 1.4 Contextualization;
  - 1.5 Audiovisual Presentation;
  - 1.6 Usefulness; and
  - 1.7 Aesthetic Value?
2. What is the mean level of Math performance of learners with and without the use of teacher-made video lessons?
3. Is there a significant difference in the Math performance of learners with and without the use of teacher-made video lessons?
4. Does the perception of learners on the teacher-made video lesson significantly relates to their Math performance upon using the teacher-made video lessons?

### Research Methodology

This study used descriptive and experimental methods of research to determine the level of perception of learners on the teacher-made video lesson in terms of its characteristics, level of math performance of learners with and without the use of the material, effectiveness of the teacher-made video lesson through their math performance and relationship of learner's perception on the material and math performance upon using the teacher-made video lesson. In this study, the controlled group was taught by the Grade 8 Mathematics Teacher in the three schools, Pedro Guevara Memorial National High School, Pagsanjan Integrated National High School and Don Manuel Rivera Memorial Integrated National High School in Grade 8 under Online Distance Learning and the experimental group was given the teacher-made video lesson as intervention material.

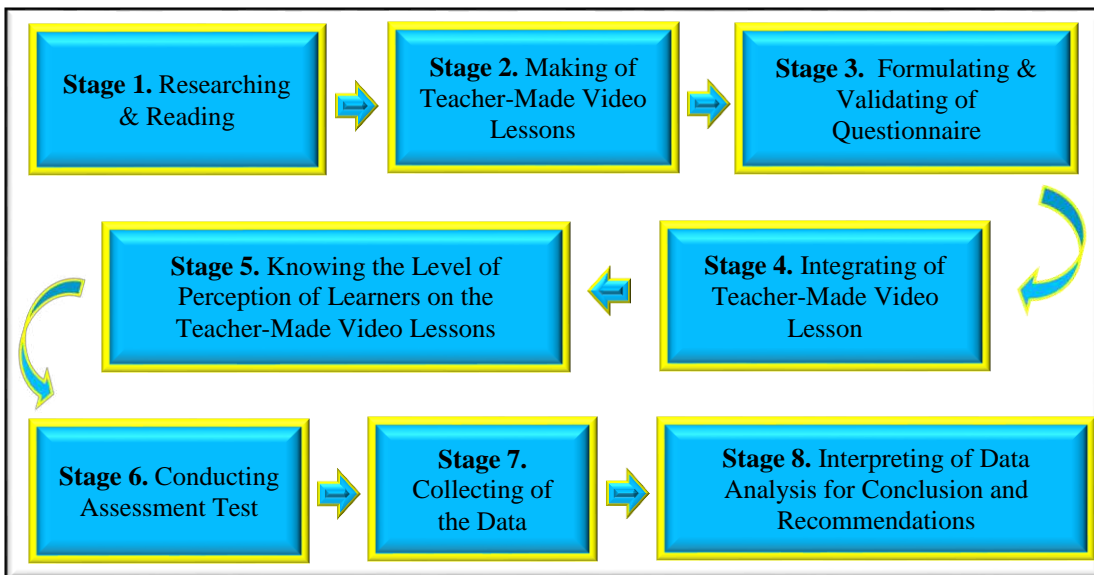
#### Respondents of the Study

The study was conducted among Two Hundred Forty (240) Students of the three schools, Pedro Guevara Memorial National High School, Pagsanjan Integrated National High School and Don Manuel Rivera Memorial Integrated National High School. Eighty (80) students from Grade 8 - J. Rizal and Grade 8 – Zhuangzi of Pedro Guevara Memorial National High School, eighty (80) students from Grade 8 – Cailles and Grade 8 – Mabini of Pagsanjan Integrated National High School and eighty (80) students from Grade 8 – N. Dimaculangan and Grade 8 – De Castro of Don Manuel Rivera Memorial Integrated National High School under Online

Distance Learning Modality School Year 2021-2022.

Purposive or judgmental sampling was used to identify the sample of the research under discussion. As cited by Taherdoost (2016), it is a strategy in which particular settings persons or events are selected deliberately in order to provide important information that cannot be obtained from other choices. It is where the researcher includes cases or participants in the sample because they believe that they warrant inclusion. Forty (40) students from Grade 8 - Zhuangzi of Pedro Guevara Memorial National High School, Forty (40) students from Grade 8 – Mabini of Pagsanjan Integrated National High School and Forty (40) students from Grade 8 – De Castro of Don Manuel Rivera Memorial Integrated National High School represented the control group (without the use of teacher-made video lesson). Forty (40) students from Grade 8 - J. Rizal of Pedro Guevara Memorial National High School, forty (40) students from Grade 8 – Cailles of Pagsanjan Integrated National High School and forty (40) students from Grade 8 – N. Dimaculangan of Don Manuel Rivera Memorial Integrated National High School

The researcher reflected on the online classroom scenarios during the time pandemic. Based on the Deped Order No. 031 Series 2020 also known as the Interim Policy Guidelines for Assessment and Grading in light of the Basic Education Learning Continuity Plan (BE-LCP), they provided self-monitoring tools that help the teachers to know the feedback of the learners and parents regarding their online classes under Online Distance Learning Modality. Some learners were having difficulty with internet connection, electricity interruptions during online class discussions, and grasping the knowledge of the topics. The researcher come up with a research title and its background that was approved by the research adviser and panel members. The researcher developed the research methodology through the help and suggestion of the research adviser and panel members.



**Figure 2. The Research Procedure of the Study**

In order to solve the problem based on the feedback of the learners and parents in the self-monitoring tool. The researcher created and designed teacher-made video lesson as an intervention for the online delivery modality.

After securing a permit from the Office of the Schools Division Superintendent to conduct the study, the proponent underwent the following stages, and then

monitored its development until the completion of the study.

**Stage 1. Researching and Reading.** Book reading was done to ensure that every author's idea about Mathematics topics was taken into consideration. Researching on how to make a video lesson that is appropriate to the age level of the students was done by the researcher.

**Stage 2. Making of Teacher-Made Video Lessons.** Taking into consideration the ideas and activities about the topics in Mathematics 8, the researcher decided to pattern the teacher-made video lessons to the most recent modules used by the Grade 8 students. The teacher-made video lesson was composed of objectives, content, activities and assessment. The teacher-made video lessons were intended for 8 weeks that covered Third Quarter. The audio was composed English instruction as a medium of instruction in Mathematics subject.

**Stage 3. Formulating and Validating Questionnaire.** To validate the research made questionnaire, 4 people who have expertise in the related study and were not the actual respondents of the study were given copies. Suggestions and comments from them were considered in making the final revisions and editing of the questionnaire intended for the samples.

**Stage 4. Integrating of Teacher-Made Video Lesson.** The selected grade 8 mathematics teachers from three schools used the teacher-made video lessons as an intervention in teaching mathematics for 8 weeks. The experimental group would be given the treatment while the control group would just listen to the discussion of the teacher during synchronous online class discussions.

**Stage 5. Knowing the Level of Perception of Learners on the Teacher-Made Video Lessons.** The selected grade 8 students who were part of the experimental group would answer the questionnaire in line with the teacher-made video lesson to know their level of perception of the said material after the integration.

**Stage 6. Conducting Assessment Test.** At the end of the Third Quarter, a 30-item assessment test were given to the respondents, both control group and experimental group, to be used as data to know the mathematics performance of the learners with and without the use of the said material.

**Stage 7. Collecting of the Data.** The researcher collected the results of the learner's perception and assessment test using google form. These data were used to determine the level of perception of learners on the teacher-made video lesson in terms of its characteristics, level of math performance of learners with and without the use of the material, effectiveness of the teacher-made video lesson through their math performance and relationship of learner's perception on the material and math performance upon using the teacher-made video lesson.

**Stage 8. Interpretating of Data Analysis for Conclusion and Recommendations.** The gathered data were treated statistically and results were tabulated and analyzed. After that, the researcher had drawn the conclusions and recommendations.

The research instrument used in this study was the questionnaire checklist checked by the Thesis Adviser and the panel members. The teacher-made video lesson were assessed and the result of the survey reflected the learner's perception to the materials in terms of objectives, content, design, contextualization, audiovisual presentation, usefulness, and aesthetic value. According to Debois (2022), a questionnaire is an instrument for collecting data, which almost always involves asking a given subject to respond to a set of oral or written questions. He also mentioned its advantages like it is inexpensive, practical, fast results, etc. In this study, a questionnaire was used to determine the learner's perception of the teacher-made video lesson.

Legend for the Learner's Perception on the teacher-made video lesson.

Range Interval	Remark	Verbal Interpretation
4.21 – 5.00	Strongly Agree	Very High
3.41 – 4.20	Agree	High
2.61 – 3.40	Moderately Agree	Moderately High
1.81 – 2.60	Disagree	Low
1.00 – 1.80	Strongly Disagree	Very Low

A 30-item test was given to establish the level of Math Performance of the students with and without the treatment of the teacher-made video lesson. The results were compared to students under the control and



experimental groups.

Legend for Math Performance of the Learners with and without the use of the teacher-made video lesson.

Range Interval	Remark
25.00 – 30.00	Advanced
19.00 – 24.00	Proficient
13.00 – 18.00	Approaching Proficient
7.00 – 12.00	Developing
1.00 – 6.00	Beginning

This is supported by Shivaraju et al. (2017) that the measurement of change provides a vehicle for assessing the impact of interventions. Furthermore, they added that their study suggests that the introduction of the assessment instrument supported the achievement of the learning objectives with a better understanding and this helps students begin to focus on the key topics that will be covered.

The scoring method was used as the basis for testing the hypothesis of this study at a 5% level of significance using statistical tools to compute the data obtained in the learner's perception on the teacher-made video lesson in terms of objectives, content, design, contextualization, audio-visual presentation, usefulness, and aesthetic value and the result of their assessment test to know their mathematics performance.

Arithmetic Mean and Standard Deviation was used to compute the learner's perception on the teacher-made video lesson. These were also used to compute the average score of the respondent and measure the spread of scores of the students in the assessment test. This determined the level of Math Performance of learners with and without the use of teacher-made video lesson material. t-Test was used to compute the significant difference in the Math Performance of learners with and without the use of Teacher Made Video Lesson as an intervention material. Pearson-r was used to compare the relationship between the learners' perception of the teacher-made video lesson and their performance upon using the materials. The researcher used a Laptop, Google Forms, and Microsoft Office Excel in tabulating and computing the statistics of the study. It was presented to the statistician for checking the computation and validation of the result.

## Results and Discussion

The major findings included were the level of perception of learners on the teacher-made video lesson in terms of its characteristics, level of math performance of learners with and without the use of the material, effectiveness of the teacher-made video lesson through their math performance and relationship of learner's perception on the material and math performance upon using the teacher-made video lesson.

### Level of Perception of Learners on the Teacher-Made Video Lesson Materials in Mathematics 8

Below are the major findings for the mean level of perception of learners on the teacher-made video lesson in Mathematics 8 in terms of objectives, content, design, contextualization, audio-visual presentation, usefulness and aesthetic value.

### Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Objectives

Table 1 presents the level of perception of learners of the teacher-made video lesson in Mathematics 8 in terms of objectives.

**Table 1. Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Objectives**

Indicative Statement	Mean	Standard Deviation	Remark
1. Objectives are clearly indicated in the Teacher-Made Video Lesson.	4.86	0.42	Strongly Agree
2. The activities are stated based on the Grade 8 Mathematics Curriculum Guide.	4.80	0.44	Strongly Agree
3. Analysis on the Teacher-Made Video Lesson reflects on the level of comprehension of the learners.	4.72	0.51	Strongly Agree
4. The key concepts show the definition of terms related to the topics.	4.82	0.43	Strongly Agree
5. The assessment is measurable in terms of the result in every activity and anchored in the objectives.	4.71	0.52	Strongly Agree
<b>Average Mean</b>	<b>4.78</b>	<b>0.46</b>	<b>Very High</b>

**Legend:**

Range Interval	Remark	Verbal Interpretation
4.21 - 5.00	Strongly Agree	Very High
3.41 - 4.20	Agree	High
2.61 - 3.40	Moderately Agree	Moderately High
1.81 - 2.60	Disagree	Low
1.00 - 1.80	Strongly Disagree	Very Low

Table 1 shows that the respondents strongly agree that the teacher-made video lesson material is accompanied by specific objectives ( $M = 4.86$ ,  $SD = 0.42$ ). The activities are stated based on the Grade 8 Mathematics Curriculum Guide ( $M = 4.80$ ,  $SD = 0.44$ ). Analysis reflects on the level of comprehension of the learners ( $M = 4.72$ ,  $SD = 0.51$ ). Key concepts shows the definition of terms related to the topics ( $M = 4.82$ ,  $SD = 0.43$ ). The assessment is measurable in terms of the result in every activity and anchored in the objectives. ( $M = 4.71$ ,  $SD = 0.52$ ).

The average mean of 4.78 further shows that the learner's perception of the objective of the teacher-made video lesson material is Very High. Small standard deviation of 0.46 indicates that the responses/ ratings of the respondents are almost the same. This implies that objectives of the teacher-made video lesson were aligned Grade 8 Mathematics Curriculum Guide and it reflect the on the level of comprehension of learners.

The findings of the learner's perception on the objective of the teacher-made video lesson Video Lesson material is supported by Kleingeld et.al. as cited by Ogbeiwi (2017) that objective need to be properly constructed to serve as credible and usable benchmarks by which the results can be monitored and evaluated via immediate outputs, intermediate outcomes over the short term or terminal impacts in the long term. It also explains what students can do after the discussion is finished. The aim is also for the students to achieve these objectives and apply them to their life.

### Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Content

Table 2 indicate the level of perception of learners on the teacher-made video lesson in Mathematics 8 in terms of content.

**Table 2. Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Content**



Indicative Statement	Mean	Standard Deviation	Remark
1. The Teacher-Made Video Lesson reflects the most important aspect of what is being taught as provided by Mathematics 8 Curriculum Guide.	4.88	0.40	Strongly Agree
2. The content is adequate in covering the scope specified by the objectives.	4.70	0.60	Strongly Agree
3. There is adequate presentation and discussion of the content.	4.82	0.41	Strongly Agree
4. The ideas, concepts and points in Teacher-Made Video Lesson presented are well expressed.	4.82	0.45	Strongly Agree
5. The contents of the Teacher-Made Video Lesson are within the comprehension of the target group.	4.81	0.49	Strongly Agree
<b>Average Mean</b>	<b>4.80</b>	<b>0.47</b>	<b>Very High</b>

**Legend:**

Range Interval	Remark	Verbal Interpretation
4.21 - 5.00	Strongly Agree	Very High
3.41 - 4.20	Agree	High
2.61 - 3.40	Moderately Agree	Moderately High
1.81 - 2.60	Disagree	Low
1.00 - 1.80	Strongly Disagree	Very Low

Table 2 shows that the respondents strongly agree that the content of each lesson reflects the most important aspect of what is being taught ( $M = 4.88$ ,  $SD = 0.40$ ). The content is adequate in covering the scope specified by the objectives ( $M = 4.70$ ,  $SD = 0.60$ ). There is an adequate presentation of the content ( $M = 4.82$ ,  $SD = 0.41$ ). The ideas, concepts and points of the material presented are well expressed ( $M = 4.82$ ,  $SD = 0.45$ ). The content of the material is within the comprehension of the target group ( $M = 4.81$ ,  $SD = 0.49$ ).

The average mean of 4.80 further shows that the learner's perception of the content of the teacher-made video lesson material is Very High. Small standard deviation of 0.47 indicates that the responses ratings of the respondents are almost the same. This implies that the teacher-made video lesson reflect the most important aspect of what is being taught and the ideas and concepts presented are well expressed.

The findings for the learner's perception on the learning resource material in terms of its content is supported by Kalin as cited by Mazgon, et al. (2012) that the teacher should choose such a medium that will allow for a systematic treatment of the educational content and its credible representation and will take into account learning steps.

### Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Design

Table 3 indicates level of perception of learners on the teacher-made video lesson in Mathematics 8 in terms of design.

**Table 3. Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Design**

Indicative Statement	Mean	Standard Deviation	Remark
1. background that is appealing to the learners and does not detract from text or other graphics.	4.58	0.59	Strongly Agree
2. font formats that have been carefully planned to enhance readability and content.	4.73	0.55	Strongly Agree
3. accurate content throughout the presentation and there are no factual errors.	4.83	0.44	Strongly Agree
4. designed based on the needs and capacities of the learners.	4.78	0.49	Strongly Agree
5. graphics that are attractive and support the theme/content of the presentation.	4.68	0.53	Strongly Agree
<b>Average Mean</b>	<b>4.72</b>	<b>0.52</b>	<b>Very High</b>

**Legend:**

Range Interval	Remark	Verbal Interpretation
4.21 - 5.00	Strongly Agree	Very High
3.41 - 4.20	Agree	High
2.61 - 3.40	Moderately Agree	Moderately High
1.81 - 2.60	Disagree	Low
1.00 - 1.80	Strongly Disagree	Very Low

Table 3 shows that the respondents strongly agree that the background is appealing to the learners and does not detract from text or other graphics. (M= 4.58, SD=0.59). It provides font formats that have been carefully planned to enhance readability and content. (M= 4.73, SD = 0.55). The content is accurate throughout the presentation and there are no factual errors. (M=4.83, SD=0.44). It provides designed based on the needs and capacities of the learners. (M= 4.78, SD=0.49). It provides graphics that are attractive and support the theme/content of the presentation. (M= 4.68, SD = 0.53).

The average mean of 4.72 further shows that the learner's perception of the design of the teacher-made video lesson material is Very High. Small standard deviation of 0.52 indicates that the responses/ ratings of the respondents are almost the same. This implies that the teacher-made video lesson provides accurate content throughout the presentation and there are no factual errors and it was designed based on the needs and capacities of the learners.

The findings of the learner's perception on the learning material in terms of design is supported by Ou, et. al (2019) when making design decisions, the teachers should think carefully about whether video is the most appropriate medium for instruction and make the best of video as a medium by selecting a video production style that is appropriate for stated objectives and outcomes. It is essential in developing an video lesson for it helps the learner to work independently and if the video lesson is easy to follow, confidence will be built among learners making Mathematics easy for them.

### Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Contextualization

Table 4 indicates the level of perception of learners on the teacher-made video lesson in Mathematics 8 in terms of Contextualization.

**Table 4. Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms**

**of Contextualization**

Indicative Statement	Mean	Standard Deviation	Remark
The teacher-made video lesson provides...			
1. words, numbers, and symbols can easily be understood.	4.90	0.33	Strongly Agree
2. directions that are clearly stated.	4.84	0.43	Strongly Agree
3. procedures that are in proper order.	4.83	0.51	Strongly Agree
4. contents that are correlated to the objectives of each topic.	4.76	0.66	Strongly Agree
5. mechanics that are simple and easily understood.	4.82	0.43	Strongly Agree
<b>Average Mean</b>	<b>4.83</b>	<b>0.47</b>	<b>Very High</b>

**Legend:**

Range Interval	Remark	Verbal Interpretation
4.21 - 5.00	Strongly Agree	Very High
3.41 - 4.20	Agree	High
2.61 - 3.40	Moderately Agree	Moderately High
1.81 - 2.60	Disagree	Low
1.00 - 1.80	Strongly Disagree	Very Low

Table 4 shows that the respondents strongly agree that the words, numbers, and symbols can easily be understood ( $M= 4.90$ ,  $SD= 0.33$ ). It provides directions that are clearly stated ( $M= 4.84$ ,  $SD= 0.43$ ). The procedures are in proper order ( $M= 4.83$ ,  $SD= 0.51$ ). The contents are correlated to the objectives of each topic. ( $M= 4.76$ ,  $SD= 0.66$ ). It provides mechanics that are simple and easily understood ( $M=4.82$ ,  $SD = 0.43$ ).

The average mean of 4.83 further shows that the learner's perception of the contextualization of the teacher-made video lesson material is Very High. Small standard deviation of 0.47 indicates that the responses/ ratings of the respondents are almost the same. This implies that words, numbers, and symbols can easily be understood and directions are clearly stated.

The findings of the learner's perception on the learning material in terms of contextualization is supported by Bumgarner (2017) presented that Contextualized Teaching and Learning (CTL) Approach rooted in the constructivist approach to teaching and learning that pupils learn concepts and construct meaning through interaction and interpretation of events in their environment. The critical thinking skills, problem-solving skills, and creativity of the students were developed. It connects the knowledge to its multiple applications in students' lives through learning by doing.

### **Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Audio-Visual Presentation**

Table 5 indicates the level of perception of learners on the teacher-made video lesson in Mathematics 8 in terms of Audio-Visual Presentation.

**Table 5. Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Audio-Visual Presentation**

Indicative Statement	Mean	Standard Deviation	Remark
1. The speaker chooses appropriate facts and descriptive details to support the lesson.	4.83	0.46	Strongly Agree
2. The audiovisual presentation organizes time well.	4.76	0.57	Strongly Agree
3. The speaker has a confident posture, speaks loudly and clearly.	4.69	0.62	Strongly Agree
4. The speaker speaks appropriately for the situation using formal English when appropriate.	4.83	0.49	Strongly Agree
5. The audiovisual presentation is sequential, logical and effectively conveys in-depth understanding of the lesson.	4.86	0.37	Strongly Agree
<b>Average Mean</b>	<b>4.79</b>	<b>0.50</b>	<b>Very High</b>

**Legend:**

Range Interval	Remark	Verbal Interpretation
4.21 - 5.00	Strongly Agree	Very High
3.41 - 4.20	Agree	High
2.61 - 3.40	Moderately Agree	Moderately High
1.81 - 2.60	Disagree	Low
1.00 - 1.80	Strongly Disagree	Very Low

Table 5 shows that the respondents strongly agree that the speaker chooses appropriate facts and descriptive details to support the lesson ( $M= 4.83$ ,  $SD = 0.46$ ). The audiovisual presentation organizes time well ( $M= 4.76$ ,  $SD=0.57$ ). The speaker has a confident posture, speaks loudly and clearly. ( $M= 4.69$ ,  $SD=0.62$ ). The speaker speaks appropriately for the situation using formal English when appropriate ( $M= 4.83$ ,  $SD= 0.49$ ). The audiovisual presentation is sequential, logical and effectively conveys in-depth understanding of the lesson ( $M=4.86$ ,  $SD=0.37$ ).

The average mean of 4.79 further shows that the learner's perception of the audio-visual presentation of the teacher-made video lesson material is Very High. Small standard deviation of 0.50 indicates that the responses/ ratings of the respondents are almost the same. This implies that audiovisual presentation is sequential, logical and effectively conveys in-depth understanding of the lesson and the speaker speaks appropriately for the situation using formal English when appropriate.

The findings on the validation of the teachers on the learning material in terms of Audio-Visual Presentation is supported by Asejo (2019), computer-aided materials such as the use of audio-visual presentations should be employed as a teaching approach. Using audio-visual materials stimulate more than one sense making the students more attentive and provides learners with opportunities to represent and express their prior knowledge.

### Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Usefulness

Table 6 indicates the level of perception of learners on the teacher-made video lesson in Mathematics 8 in terms of usefulness.

**Table 6. Level of Perception of Learners on the Teacher-Made Video Lesson in terms of Usefulness**

Indicative Statement	Mean	Standard Deviation	Remark
The teacher-made video lesson...			
1. promotes an active quest for new information and ideas.	4.83	0.44	Strongly Agree
2. maintains an atmosphere conducive to inquiry	4.72	0.55	Strongly Agree
3. use appropriate questioning skills	4.83	0.44	Strongly Agree
4. responds appropriately to what students contribute to lesson.	4.85	0.38	Strongly Agree
5. encourages student thinking and questioning.	4.79	0.50	Strongly Agree
<b>Average Mean</b>	<b>4.80</b>	<b>0.46</b>	<b>Very High</b>

**Legend:**

Range Interval	Remark	Verbal Interpretation
4.21 - 5.00	Strongly Agree	Very High
3.41 - 4.20	Agree	High
2.61 - 3.40	Moderately Agree	Moderately High
1.81 - 2.60	Disagree	Low
1.00 - 1.80	Strongly Disagree	Very Low

Table 6 shows that the respondents strongly agree that the learning material promotes an active quest for new information and ideas ( $M=4.83$ ,  $SD=0.44$ ). It maintains an atmosphere conducive to inquiry ( $M=4.72$ ,  $SD=0.55$ ). It uses appropriate questioning skills ( $M=4.83$ ,  $SD=0.44$ ). It responds appropriately to what students contribute to lesson ( $M=4.85$ ,  $SD=0.38$ ). It encourages student thinking and questioning. ( $M=4.79$ ,  $SD=0.50$ ).

The average mean of 4.80 further shows that the learner's perception of the usefulness of the teacher-made video lesson material is Very High. Small standard deviation of 0.46 indicates that the responses/ ratings of the respondents are almost the same. This implies that the teacher-made video lesson promotes an active quest for new information and ideas, use appropriate questioning skills and responds appropriately to what students contribute to lesson.

The findings of the learner's perception on the learning material in terms of Usefulness is supported by Kosterelioglu (2016) that the use of videos as technological tools that support learning. As learning tools, videos support the learning process and are used in the professional development of teachers in line with educational programs. Videos create opportunities for in-depth learning by presenting various learning data together such as images, movement and sound. This allows learning to take place at individual paces and ensures control over the reception of information.

### Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Aesthetic Value

Table 7 indicates level of perception of learners on the teacher-made video lesson in Mathematics 8 in terms of Aesthetic value.

**Table 7. Level of Perception of Learners on the Teacher-Made Video Lesson in Mathematics 8 in terms of Aesthetic Value**

Indicative Statement	Mean	Standard Deviation	Remark
The teacher-made video lesson has...			
1. union of all the elements of the Teacher-Made Video Lesson.	4.80	0.44	Strongly Agree
2. content free from error and defects.	4.70	0.59	Strongly Agree
3. a pleasant feeling linked to a good mood and satisfaction.	4.76	0.47	Strongly Agree
4. creative expression and openness and interest.	4.85	0.38	Strongly Agree
5. awareness of the creative context.	4.83	0.42	Strongly Agree
<b>Average Mean</b>	<b>4.79</b>	<b>0.46</b>	<b>Very High</b>

**Legend:**

Range Interval	Remark	Verbal Interpretation
4.21 - 5.00	Strongly Agree	Very High
3.41 - 4.20	Agree	High
2.61 - 3.40	Moderately Agree	Moderately High
1.81 - 2.60	Disagree	Low
1.00 - 1.80	Strongly Disagree	Very Low

Table 7 shows that the respondents strongly agree that the learning material has union of all the elements of the teacher-made video lesson ( $M=4.80$ ,  $SD=0.44$ ). It has content free from error and defects. ( $M=4.70$ ,  $SD=0.59$ ). It has a pleasant feeling linked to a good mood and satisfaction ( $M=4.76$ ,  $SD=0.47$ ). It has creative expression and openness and interest ( $M=4.85$ ,  $SD=0.38$ ). It has awareness of the creative context ( $M=4.83$ ,  $SD=0.42$ ).

The average mean of 4.79 further shows that the learner's perception of the aesthetic value of the teacher-made video lesson material is Very High. Small standard deviation of 0.46 indicates that the responses/ratings of the respondents are almost the same. This implies that teacher-made video lesson has creative expression, openness and interest and also awareness of the creative context. The material also has a pleasant feeling linked to a good mood and satisfaction.

The findings of the learner's perception on the learning material in terms of aesthetic value is supported by Huibregtse (2012) that aesthetics include a pleasing appearance, intuitive interface, and well-organized content, and that it is the combination of all three of those elements that enhances the learner experience and encourages increased learning outcomes. It is also important to note the difference between the design of individual learning objects, as opposed to the design of the larger learning environment.

### Level of Math Performance of Learners from three schools with and without the use of Teacher-Made Video Lessons

Table 8 presents the respondents level of Math Performance from three schools with and without the use of teacher-made video lesson as an Intervention material in Mathematics 8.

**Table 8. Level of Math Performance of Learners from three schools with and without the use of Teacher-Made Video Lessons**

Test	Mean	Standard Deviation	Remark
------	------	--------------------	--------



Without the use of Teacher-Made Video Lesson	15.20	5.87	Approaching Proficient
With the use of Teacher-Made Video Lesson	27.08	3.18	Advanced

**Legend:**

Range Interval	Remark
25.00 – 30.00	Advanced
19.00 – 24.00	Proficient
13.00 – 18.00	Approaching Proficient
7.00 – 12.00	Developing
1.00 – 1.60	Beginning

Table 8 shows that the level of math performance of learners from three schools without the use of teacher-made video lesson ( $M= 15.20$ ,  $SD=5.87$ ) was at its approaching proficient level while the mean level with the use of teacher-made video lesson ( $M= 27.08$ ,  $SD= 3.18$ ) was remarkably advanced. This implies that use of teacher made-video lesson material is useful in increasing the learner's mathematics performance comparing the control group (without the use of the material) and experimental group (with the use of the material). This is supported by Savkar et al. (2017) who stated that voluntary participation in such assessments gives feedback on teachers' teaching efficacy and learners' knowledge acquisition. This test is used to determine whether or not a student is improving, which is important for their learning progress.

#### Significant difference in the Math Performance of Learners from three schools with and without the use of Teacher-Made Video Lessons

Table 9 represents the significant of difference in the Math Performance of Learner from three schools with and without the use of teacher-made video lesson as an intervention material in Mathematics 8.

**Table 9. Significant Difference in the Math Performance of Learners with and without the use of Teacher-Made Video Lessons**

Test	Mean	Standard Deviation	t- value	t <sub>critical</sub>	p	Analysis
Without the use of Teacher-Made Video Lesson	15.20	5.87	19.49	1.66	< 0.01	Significant
With the use of Teacher-Made Video Lesson	27.08	3.18				

**Note: Difficulty at 0.01 level; Hypothesis tested at  $\alpha=0.05$**

Table 9 shows the level of ability of students from three schools with the use of teacher-made video lesson ( $M= 27.08$ ,  $SD=3.18$ ) is statistically significantly higher than without the use of the intervention material ( $M= 15.20$ ,  $SD= 5.87$ ). At 0.05 level of significance with computed t - value= 19.49 which exceeded t- critical value 1.66 at  $p= <0.01$ , shows that there is a significant difference on the use of the teacher-made video lesson material on the learner's mathematics performance.

This implies that the teacher-made video lesson material was a good tool in improving learner's Mathematics performance because it contains activities suited to the learner and easy to comprehend. Learners can work independently thus developing their problem and analytical solving skills. Hemabala et al. (2015) stated that from the parameters or indicators to the mobile learning using video lessons in education system is easy to understand the concept of the subject. Moreover, Baer et al. (2021) stated that watching video lessons should be used in teaching learners in Mathematics because it improved their classroom performance.

### **Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson and Math Performance upon using the Teacher-Made Video Lessons**

Below are the major findings for the significant relationship of learner's Perception on the teacher-made video lesson in Mathematics 8 in terms of objectives, content, design, contextualization, audio-visual presentation, usefulness and aesthetic value.

### **Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Objective and Math Performance upon using the Teacher-Made Video Lessons**

Table 10 shows the significant difference between the learner's perception of the teacher-made video lesson in terms of objective and math performance upon using the teacher-made video lesson.

**Table 10. Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Objective and Math Performance upon using the Teacher-Made Video Lessons**

Variables	Mean	Standard Deviation	r-value	p-value	Analysis
Learner's Perception on the Teacher-Made Video Lesson in terms of Objective	4.78	0.33	0.11	0.23	Not Significant
Math Performance of Learners upon using the Teacher-Made Video Lesson	27.08	3.18			

#### **Hypothesis tested at $\alpha = 0.05$**

Table 10 shows the findings of the research regarding the relationship between the Learner's Perception of the teacher-made video lesson in terms of Objective and Math Performance upon using the teacher-made video lessons. The average mean and standard deviation of the independent variable is 4.78 and 0.33, respectively, while the dependent variable is 27.08 and 3.18, respectively. After using the statistical tool which is Pearson-r, it can be seen that the r-value, 0.11, is very near to 0.

The result of the statistical treatment shows that there is no significant relationship between the two means. The p-value, 0.23, which is higher than the alpha level of 0.05, strengthens the claim. Hence, the Learner's Perception of the teacher-made video lesson in terms of Objective does not have a significant relationship with Math Performance upon using the teacher-made video lessons among the three schools. This implies that even though the learners agreed or disagreed about their perception of the objective of the teacher-lesson video lesson, it will not cause their math performance to get high or low scores. Based on the learner's perception of the objective of the materials, the assessment is measurable in terms of the result in every activity and anchored in the objectives of the lesson while the result of their Math Performance was marked as Advanced.

The result of the study is similar to the study of Castillo (2021), the objectives of the MELC-based Supplementary Learning Materials were effective.

### Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Content and Math Performance upon using the Teacher-Made Video Lessons

Table 11 shows the significant difference between the learner's perception of the teacher-made video lesson in terms of content and math performance upon using the teacher-made video lesson.

**Table 11. Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Content and Math Performance upon using the Teacher-Made Video Lessons**

Variables	Mean	Standard Deviation	r-value	p-value	Analysis
Learner's Perception on the Teacher-Made Video Lesson in terms of Content	4.80	0.33	0.12	0.19	Not Significant
Math Performance of Learners upon using the Teacher-Made Video Lesson	27.08	3.18			

Hypothesis tested at  $\alpha = 0.05$

Table 11 shows the findings of the research regarding the relationship between the Learner's Perception of the teacher-made video lesson in terms of Content and Math Performance upon using the teacher-made video lesson. The average mean and standard deviation of the independent variable is 4.80 and 0.33, respectively, while the dependent variable is 27.08 and 3.18, respectively. After using the statistical tool which is Pearson-r, it can be seen that the r-value, 0.12, is very near to 0.

The result of the statistical treatment shows that there is no significant relationship between the two means. The p-value, 0.19, which is higher than the alpha level of 0.05, strengthens the claim. Hence, the Learner's Perception of the teacher-made video lesson in terms of Content does not have a significant relationship with Math Performance upon using the teacher-made video lessons among the three schools. This indicates that regardless of whether students agreed or disagreed with the teacher's lesson video's content, it will not affect whether they received high or low marks for their math performance. The ideas and concepts in the materials are clearly expressed based on how the student perceives the content. The lesson's material is presented and discussed in an adequate manner, and their math performance received an Advanced rating.

The result of the study is similar to the study of Cattaneo, et. al. (2019). Concentrate on organizing the content as much as possible and breaking it up into smaller units to lessen the information load. By dividing the presentation into manageable pieces, segmenting makes space between subsequent segments of the presentation possible.

### Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Design and Math Performance upon using the Teacher-Made Video Lessons

Table 12 shows the significant difference between the learner's perception of the teacher-made video lesson in terms of content and math performance upon using the teacher-made video lesson.

**Table 12. Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Design and Math Performance upon using the Teacher-Made Video Lessons**

Variables	Mean	Standard Deviation	r-value	p-value	Analysis
-----------	------	--------------------	---------	---------	----------

Learner's Perception on the Teacher-Made Video Lesson in terms of Design	4.72	0.36	0.10	0.28	Not Significant
Math Performance of Learners upon using the Teacher-Made Video Lesson	27.08	3.18			

#### Hypothesis tested at $\alpha = 0.05$

Table 12 shows the findings of the research regarding the relationship between the Learner's Perception of the teacher-made video lesson in terms of Design and Math Performance upon using the teacher-made video lessons. The average mean and standard deviation of the independent variable is 4.72 and 0.36, respectively, while the dependent variable is 27.08 and 3.18, respectively. After using the statistical tool which is Pearson-r, it can be seen that the r-value, 0.10, is very near to 0.

The result of the statistical treatment shows that there is no significant relationship between the two means. The p-value, 0.28, which is higher than the alpha level of 0.05, strengthens the claim. Hence, the Learner's Perception of the teacher-made video lesson in terms of Design does not have a significant relationship with Math Performance upon using the teacher-made video lessons among the three schools. This shows that regardless of whether the students agreed or disagreed with their interpretation of how the teacher-lesson video lesson was designed, it will not affect whether they received high or low marks for their math performance. According to the learners' assessment of the design of the materials, the design was based on the needs and abilities of the learners and font formats that have been carefully planned to improve readability and content, while the outcome of their math performance was classified as Advanced.

In the article of the study made by Salcedo, et. al. (2019), a balance between the caliber of the content and the manner in which it is presented must be shown in instructional designs for video lessons.

#### Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Contextualization and Math Performance upon using the Teacher-Made Video Lessons

Table 13 shows the significant difference between the learner's perception of the teacher-made video lesson in terms of contextualization and math performance upon using the teacher-made video lesson.

**Table 13. Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Contextualization and Math Performance upon using the Teacher-Made Video Lessons**

Variables	Mean	Standard Deviation	r-value	p-value	Analysis
Learner's Perception on the Teacher-Made Video Lesson in terms of Contextualization	4.83	0.33	0.05	0.59	Not Significant
Math Performance of Learners upon using the Teacher-Made Video Lesson	27.08	3.18			

#### Hypothesis tested at $\alpha = 0.05$

Table 13 shows the findings of the research regarding the relationship between the Learner's Perception of the teacher-made video lesson in terms of Contextualization and Math Performance upon using the teacher-made video lessons. The average mean and standard deviation of the independent variable is 4.83 and 0.33, respectively, while the dependent variable is 27.08 and 3.18, respectively. After using the statistical tool which is Pearson-r, it can be seen that the r-value, 0.05, is very near to 0.

The result of the statistical treatment shows that there is no significant relationship between the two means. The p-value, 0.59, which is higher than the alpha level of 0.05, strengthens the claim. Hence, the Learner's Perception of the teacher-made video lesson in terms of Contextualization does not have a significant relationship with Math Performance upon using the teacher-made video lessons among the three schools. This implies that regardless of whether the learners agreed or disagreed with their assessment of the contextualization of the teacher-lesson video lesson, it will not influence the outcomes of their math performance. The directions were clearly expressed and the procedures are in the right order, according on the learner's perception of the contextualization of the materials. The information is relevant to the objectives of each topic. They acquired an Advanced mark for their math performance.

The contextual foundation for strategic activities during and after the pandemic was given via scenario analysis. Higher education institutions must adapt to flexible teaching and learning modalities, recalibrate the curriculum, equip the faculty, modernize the infrastructure, implement a strategic plan, and evaluate the plan overall in order to maintain teaching and learning continuity according to Dayagbil (2021).

#### **Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Audio-Visual Presentation and Math Performance upon using the Teacher-Made Video Lessons**

Table 14 shows the significant difference between the learner's perception of the teacher-made video lesson in terms of audio-visual presentation and math performance upon using the teacher-made video lesson.

**Table 14. Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Audio-visual Presentation and Math Performance upon using the Teacher-Made Video Lessons**

Variables	Mean	Standard Deviation	r-value	p-value	Analysis
Learner's Perception on the Teacher-Made Video Lesson in terms of Content	4.79	0.39	0.12	0.19	Not Significant
Math Performance of Learners upon using the Teacher-Made Video Lesson	27.08	3.18			

#### **Hypothesis tested at $\alpha = 0.05$**

Table 14 shows the findings of the research regarding the relationship between the Learner's Perception of the Teacher-Made Video Lesson in terms of Audio-visual Presentation and Math Performance upon using the teacher-made video lessons. The average mean and standard deviation of the independent variable is 4.79 and 0.39, respectively, while the dependent variable is 27.08 and 3.18, respectively. After using the statistical tool which is Pearson-r, it can be seen that the r-value, 0.12, is very near to 0.

The result of the statistical treatment shows that there is no significant relationship between the two means. The p-value, 0.19, which is higher than the alpha level of 0.05, strengthens the claim. Hence, the Learner's Perception of the teacher-made video lesson in terms of Audio-visual Presentation does not have a significant relationship with Math Performance upon using the teacher-made video lessons among the three schools. This implies that even though the learners agreed or disagreed about their perception of the audio-visual presentation of the teacher-lesson video lesson, it will not cause their math performance to get high or low scores. The audio-visual presentation of the materials is sequential, logical, and effectively conveys an in-depth understanding of the lesson. The speaker chooses appropriate facts and descriptive details to support the lesson while the result of their Math Performance was marked as Advanced.

The result of the study is similar to the study of Majumdar (2017), Information is mostly provided by

visual elements, while audio is employed to elaborate the information.

### Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Usefulness and Math Performance upon using the Teacher-Made Video Lessons

Table 15 shows the significant difference between the learner's perception of the teacher-made video lesson in terms of usefulness and math performance upon using the teacher-made video lesson.

**Table 15. Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Usefulness and Math Performance upon using the Teacher-Made Video Lessons**

Variables	Mean	Standard Deviation	r-value	p-value	Analysis
Learner's Perception on the Teacher-Made Video Lesson in terms of Usefulness	4.80	0.34	0.08	0.39	Not Significant
Math Performance of Learners upon using the Teacher-Made Video Lesson	27.08	3.18			

**Hypothesis tested at  $\alpha = 0.05$**

Table 15 shows the findings of the research regarding the relationship between the Learner's Perception of the teacher-made video lesson in terms of Usefulness and Math Performance upon using the teacher-made video lessons. The average mean and standard deviation of the independent variable is 4.80 and 0.34, respectively, while the dependent variable is 27.08 and 3.18, respectively. After using the statistical tool which is Pearson-r, it can be seen that the r-value, 0.08, is very near to 0.

The result of the statistical treatment shows that there is no significant relationship between the two means. The p-value, 0.39, which is higher than the alpha level of 0.05, strengthens the claim. Hence, the Learner's Perception of the teacher-made video lesson in terms of Usefulness does not have a significant relationship with Math Performance upon using the teacher-made video lessons among the three schools. This shows that even though the learners agreed or disagreed about their perception of the usefulness of the teacher-made video lesson, it will not affect the scores they receive for their math performance. It responds properly to student contributions to the lesson based on the outcome of the learner's assessment of the materials and promotes an active quest for new information and ideas while the outcome of their math performance was categorized as Advanced, the materials encourage an active search for novel insights and concepts.

The result of the study is similar to the study of Almuslamani (2020). The findings demonstrated that educational videos selected by the researcher or by the students significantly and favorably influenced the level of student engagement in the classroom. It was found that educational videos selected by students had a more significant influence on this aspect than those chosen by the researcher.

### Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Aesthetic Value and Math Performance upon using the Teacher-Made Video Lessons

Table 16 shows the significant difference between the learner's perception of the teacher-made video lesson in terms of aesthetic value and math performance upon using the teacher-made video lesson.

**Table 16. Significant Relationship of Learner's Perception on the Teacher-Made Video Lesson in terms of Aesthetic Value and Math Performance upon using the Teacher-Made Video Lessons**



Variables	Mean	Standard Deviation	r-value	p-value	Analysis
Learner's Perception on the Teacher-Made Video Lesson in terms of Aesthetic Value	4.79	0.34	0.15	0.10	Not Significant
Math Performance of Learners upon using the Teacher-Made Video Lesson	27.08	3.18			

#### Hypothesis tested at $\alpha = 0.05$

Table 16 shows the findings of the research regarding the relationship between the Learner's Perception of the teacher-made video lesson in terms of Aesthetic Value and Math Performance upon using the teacher-made video lessons. The average mean and standard deviation of the independent variable is 4.79 and 0.34, respectively, while the dependent variable is 27.08 and 3.18, respectively. After using the statistical tool which is Pearson-r, it can be seen that the r-value, 0.15, is very near to 0.

The result of the statistical treatment shows that there is no significant relationship between the two means. The p-value, 0.10, which is higher than the alpha level of 0.05, strengthens the claim. Hence, the Learner's Perception of the teacher-made video lesson in terms of Aesthetic Value does not have a significant relationship with Math Performance upon using the teacher-made video lessons among the three schools. This implies that even though the learners agreed or disagreed about their perception of the aesthetic value of the teacher-lesson video lesson, it will not cause their math performance to get high or low scores. Based on the learner's perception of the aesthetic value of the materials, it shows a pleasant feeling liked to a good mood and satisfaction. The materials are content free from error and defects while their performance in math was classified as Advanced.

Intentionally eliciting pleasant feelings through aesthetically beautiful design enhances learning by influencing attitudes and motivation, arousing students' curiosity, and boosting their level of engagement with the subject matter according to West (2020).

This study took inspiration on Richard Mayer's Cognitive Theory of Multimedia Learning, which demonstrated that when students are exposed to two or more media and actively select the most important information, organize it into cognitive mental representations, and then integrate it with their prior knowledge, they can learn more effectively.

The numerous modes of video can take a variety of approaches, such as aesthetic, logical, or narrational, in addition to linguistic ones, therefore this study used Gardner's theory of multiple intelligences to explain how video might meet the demands of a wider spectrum of learners. Due to its ability to stir up viewers' emotions, video can have a significant positive impact on both motivation and affective learning.

Marshall's Arousal Theory, Short-Term Gratification Theory, and Interest Stimulation Theory claimed that a carefully selected video can engage the learner, activate emotional states, initiate interest in a topic, and allow for absorption and processing of knowledge."(Karami, 2021)

Utami and Saefudin (2018) paired to work to compare the study of Learning using E-learning and Printed materials on independent learning and creativity. They compared students taking independent learning using e-learning and students attending classes but using printed instructional materials. They also researched the creativity of students who follow learning independently and compared it with those using printed materials. The result showed a difference in learning independently using e-learning and dependently using printed materials. Consequently, there is no difference in creativity between the two groups of respondents. The study suggested that learning using e-learning can develop student creativity while learning to use e-learning and teaching materials can be printed to develop students' independence.

Hagan et. al. (2020) collaboratively studied students' perception of Mathematics and its effect on academic performance. They used a survey questionnaire and adopted the descriptive survey design to study

certain characteristics, attitudes, feelings, beliefs, motivations, behaviors, and opinions, without attempting to manipulate the variables. It was found that perception of mathematics has no influence or effect on their academic performance.

Kunwar (2021) in his paper included the parents and teachers in his secondary low-level performing students' perception of Mathematics. The result revealed negative with respect to perception and performance to learn Mathematics but they knew the value of learning Mathematics.

## Summary of Findings

Based on the data presented, analysed and interpreted the following were the findings:

The learner's perception on the teacher-made video lesson material was given a remark of very high in all of its characteristics. This showed that the teacher-made video lesson provided context that could easily be understood by the learners and directions were clearly stated. In addition, the content reflected the most important aspect of what is being taught and the ideas and concepts presented were well expressed. Furthermore, the material used appropriate questioning skills and responded appropriately to what students contributed to the lesson.

Controlled group showed approaching proficient level in their math performance without the use of teacher-made video lesson while the experimental group showed advanced level in their math performance as shown by the computed mean. This showed that the use of teacher made-video lesson material is useful in increasing the learner's mathematics performance when comparing the control group (without the use of the material) and the experimental group (with the use of the material).

The result of the mathematics performance of learners with and without the use of teacher-made video was significant since the computed t-value was higher than the critical value. The null hypothesis  $H_{01}$  was rejected. This showed that the teacher-made video lesson material was a good tool in improving learner's mathematics performance because it contains activities suited to the learners and easy to comprehend. Learners can work independently, thus developing their analytical and problem-solving skills.

The relationship of the learner's perception on the teacher-made video lesson and their mathematics performance upon using the material was not significant since the p-value is higher than the significance alpha. The null hypothesis  $H_{02}$  was accepted. This showed that even though the learners agreed or disagreed about their perception of the characteristics of the teacher-lesson video lesson, it would not cause their math performance to get high or low scores.

## Conclusion

Based on the findings, it was concluded that:

The null hypothesis  $H_{01}$  indicating that there is no significant difference in the Mathematics Performance of the Students with and without the use of teacher-made video lessons was rejected. Rejection of the null hypothesis shows that there is a significant difference between the Math Performance of learners from three schools with and without the use of teacher-made video lessons. This showed that the teacher-made video lessons was effective as intervention material in teaching Mathematics 8 specifically on the topics in the Third Quarter of the Most Essential Learning Competencies.

The null hypothesis  $H_{02}$  indicating that there is no significant relationship between the perception of learners of the teacher-made video lesson and Math performance upon using the teacher-made video lesson was accepted. Acceptance of the null hypothesis showed that there is no significant relationship between the perception of learners of the teacher-made video lesson and their math performance.

## Recommendations

From the findings and conclusions drawn, the following are hereby recommended for consideration.

1. School heads may encourage teachers to create learning materials that can help students overcome the challenges faced during this time of pandemic and use these intervention materials for those students who are having difficulty with internet connection, electricity interruptions during online class discussions, and grasping the knowledge of the topics.

2. School heads with the Master Teachers should initiate the construction of teacher-made video lessons through seminars, workshops and SLAC in their school.

Similar studies about the use of the teacher-made video lesson learning material as an intervention not just in Mathematics but also in other subject areas should be conducted and use other variables aside from those considered in the study.

## References

- Alamusalmani, H., Nassar, I. & Mahdi, O. (2020). The Effect of Educational Videos on Increasing Student Classroom Participation: Action Research. *International Journal of Higher Education*. <https://doi.org/10.5430/ijhe.v9n3p323>
- Asejo, D. (2019). Effectiveness of Audio-Visual Presentation on the Performance of Grade 6 Learning in Araling Panlipunan. *San Carlos College Research Journal*. <https://sancarloscollege.edu.ph/wp-content/others/research%20no%207.pdf>
- Baer, J. & Vargas, D. (2021). Effects of Using Video Lessons in the Mathematics Achievement of Senior High School Learners. Department of Education and Central Luzon State University. April 9, 2021. <http://dx.doi.org/10.2139/ssrn.3823175>
- Bumgarner, M. (2017). An Introduction to Contextualized Teaching and Learning: A Way to Teach Content through relevant materials that keeps students engaged and learning. <https://slideplayer.com/slide/12187654/>
- Castillo, J. (2021). Acceptability and Effectiveness of MELC-Based Supplementary Learning Materials in Physical Education 9. *EPRA International Journal of Research and Development (IJRD)*. <https://doi.org/10.36713/epra7331>
- Canada, M. H. (2019). Richard Mayer's Cognitive Theory of Multimedia Learning. <https://www.mheducation.ca/blog/richard-mayers-cognitive-theory-of-multi-media-learning>
- Cattaneo, A., Evi-Colombo, A., Ruberto, M. & Stanley, J. (2019). Video Pedagogy for Vocational Education: An overview of video-based teaching and learning. Turin: European Training Foundation. [https://www.etf.europa.eu/sites/default/files/2019-08/video\\_pedagogy\\_for\\_vocational\\_education.pdf](https://www.etf.europa.eu/sites/default/files/2019-08/video_pedagogy_for_vocational_education.pdf)
- Dayagbil, F., Palompon, D., Garcia, L. & Olvido, M. (2021). Teaching and Learning Continuity Amid and Beyond the Pandemic. *Front. Educ.* 6:678692. <https://www.frontiersin.org/articles/10.3389/feduc.2021.678692/full>
- Debois, S. (2022). 10 Advantages and Disadvantages of Questionnaires. <https://surveyanyplace.com/blog/questionnaire-pros-and-cons/>
- Gomez, E. (2017). Instructional Materials and Academic Performance of Grade II Pupils in Don Fernando Jacinto Elementary School, Villanueva, Misamis Oriental. *International Journal of Recent Research in Social Sciences and Humanities (IJRSSH)*. <https://www.paperpublications.org/upload/book/Instructional%20Materials%20and%20Academic-1108.pdf>
- Hagan, J. Amoaddai, S., Lawer V. & Atteh E. (2020). Students' Perception towards Mathematics and Its Effects on Academic Performance. *Asian Journal of Education and Social Studies*. <https://doi.org/10.9734/AJESS/2020/v8i130210>
- Hemabala, J. & Suresh, E. (2015). Effectiveness of Video Lessons Using Mobile Learning for Technical Teachers. *International Journal of Advanced Technology in Engineering and Science*. [http://ijates.com/images/short\\_pdf/1427305540\\_1096.pdf](http://ijates.com/images/short_pdf/1427305540_1096.pdf)
- Huibregtse, G. (2012). The Influence of Aesthetics in an E-learning Environment. [https://conservancy.umn.edu/bitstream/handle/11299/187536/Huibregtse,%20Geri\\_Redacted.pdf?sequence=5](https://conservancy.umn.edu/bitstream/handle/11299/187536/Huibregtse,%20Geri_Redacted.pdf?sequence=5)
- Karami, A. (2021). The Schematic Information-Processing (SIP) model of reading comprehension: Theoretical support for the utilization of text-relevant video segments to teach culturally unfamiliar texts in second/foreign language classrooms. *Cogent Education*, 8:1,1891613. <https://doi.org/10.1080/2331186X.2021.1891613>
- Kosterelioglu, I. (2016). Student Views on Learning Environments Enriched by Video Clips. *Universal Journal of Educational Research*. <https://doi.org/10.13189/ujer.2016.040207>
- Kunwar, R. (2021). A Study on Low Performing Students Perception towards Mathematics: A Case of Secondary Level Community School Students of Nepal. *Researcher: A Research Journal of Culture and Society*. <https://doi.org/10.3126/researcher.v5i1.41384>
- Majumdar, A. (2017). Getting Started with Video-Based Learning. <https://elearningindustry.com/video-based-learning-getting-started>
- Mazgon, J. & Stefanc, D. (2012). Importance of the Various Characteristics of Educational Materials: Different Opinions, Different Perspectives. *American Journal of Educational Research*, 2021. <https://doi.org/10.12691/education-9-10-8>
- Northern Illinois University Center for Innovative Teaching and Learning. (2020). Howard Gardner's theory of multiple intelligences. In *Instructional guide for university faculty and teaching assistants*. <https://www.niu.edu/citl/resources/guides/instructional-guide>
- Ogbeiwi, O. (2017). Why written objectives need to be really SMART. *British Journal of Healthcare Management* Vol. 23, No. 7. <https://doi.org/10.12968/bjhc.2017.23.7.324>

- Ou, C., Joyner, D.A., & Goel, A.K. (2019). Designing and developing video lessons for online learning: A seven-principle model. *Online Learning Consortium: The Official Journal*. <https://doi.org/10.24059/olj.v23i2.1449>
- Salcedo, E., Pérez-Rodríguez, A., & Contreras-Pulido, P. (2019). Proposal for designan instrument for video lectures analysis in MOOC. *Alteridad, Revista De Educacion*, Vol. 14, No. 1, 51-60. <https://doi.org/10.17163.alt.v14n1.2019.04>
- Savkar, M., Manu, G. & Shivaraju, P. (2017). Evaluating the effectiveness of pre- and post-test model of learning in a medical school. *National Journal of Physiology, Pharmacy and Pharmacology*. <https://doi.org/10.5455/njppp.2017.7.0412802052017>
- Shivaraju, P., Manu, G., Savkar, M. et al. (2017). Evaluating the effectiveness of pre- and post-test model of learning in a medical school. *National Journal of Physiology, Pharmacy and Pharmacology* Volume 7, Issue 9. <https://doi.org/10.5455/njppp.2017.7.0412802052017>
- Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. <http://dx.doi.org/10.2139/ssrn.3205035>
- Tarver, E. (2020). Arousal Theory of Motivation: Definition, Principles & Optimization. <https://www.evantarver.com/arousal-theory-of-motivation/>
- Utumi, N. & Saefudin A. (2018) Comparative Study of Learning Using E-Learning and Printed Materials on Independent Learning and Creativity. *Journal of Physics: Conference Series*, 954 012004. <https://doi.org/10.1088/1742-6596/954/1/012004>
- West, D., Allman B., Hunsaker, E., & Kimmons, R. (2020). Visual Aesthetics: The Art of Learning. The Students' Guide to Learning Design and Research. EdTech Books. [https://edtechbooks.org/studentguide/visual\\_aesthetics](https://edtechbooks.org/studentguide/visual_aesthetics)