HOW DO TEACHER-MADE VIDEO LESSONS HELP IMPROVE PERFORMANCE OF STUDENTS IN A BLENDED LEARNING MODALITY?

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ABSTRACT

This study was conducted to determine how the teacher-made video lessons help improved the learning performance of the students under the blended learning modality. The teacher-made video lessons consist of 5 videos on the topics of Measures of Position. The participants of the study were the selected Grade 10 students from six different sections under the general curriculum. The quantitative data were collected from pretest and posttest results and were analyzed using Wilcoxon signed-ranked test. The qualitative data were collected through interviews that were answered by the students and were analyzed using thematic content analysis. Findings showed that the teacher-made video lesson as an alternative to actual teacher-lecture helped increase students' performance in Mathematics in their independent learning. The qualitative data revealed that the participants were more interested in studying their Learning Activity Sheets with the aid of the teacher-made video lessons.

Keywords: Teacher-Made Video Lessons, Blended Learning Modality, Self Learning Modules, Learning Activity Sheets

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And to the most important being, **Almighty God**, for with Him nothing is impossible.

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I. CONTEXT AND RATIONALE

In order to ensure learning continuity up to the next level and to foster learning habits, passion, and love for the subject, it is the primary responsibility of the teacher to make sure that every student acquires the most essential learning competencies (MELCs) in every session.

In this time of pandemic, schools utilized blended distance learning as a support to learning continuity. In this scheme, students do not go to schools, and they only received digital modules for their independent learning. Students are learning from their homes without the presence of the teacher. As such, the absence of teacher-lecture seems to be a burden among the students in the mastery of the concepts of the lesson. Thus, these students requested to have a lecture before they will answer their worksheets.

Lecture is one of the oldest methods, yet it is effective. This statement is in consonance with the views of Charlton (2006) who stated that lectures are the best teaching method in many circumstances and for many students; especially for communicating conceptual knowledge, and where there is a significant knowledge gap between the lecturer and audience. In our experiences in teaching Mathematics, we believed that lecture plays a vital role in a classroom teaching-learning process.

According to Study Lecture Notes (2023), a teacher's lecture has the potential to teach students a lot of information, provide them with materials they wouldn't otherwise have access to, and convey the inherent appeal of a subject by demonstrating enthusiasm for it in order to appeal to particular audiences. According to Whitehorse (2023), teacher-lectures allow teachers the ability to draw attention to similarities and differences as well as clarify any misunderstood principles or ideas. Students might be motivated by

teachers who lead by example in terms of professionalism and critical thinking.

After distributing, retrieving, and reviewing Learning Activity Sheets for the first quarter, we discovered a sizable percentage—33%—of worksheets lacking answers. Additionally, we saw that 24% of students performed the task's responses with very bad outcomes. Academic problems have resulted from remote learning's lack of lectures.

We asked the students why they didn't have any answers on their Learning Activity Sheets in an effort to find out how we could assist them. They stated that they couldn't understand the concepts in the worksheets by just reading them, thus they couldn't complete the tasks, which was a common response. These outcomes were linked to the students' absence of classroom lectures. The lack of face-to-face interactions between teachers and students, the lack of hands-on training, and the lack of skill development are only a few of the drawbacks of distance learning that Korolkov et al. (2020) highlighted. Because of the issue's persistence, it is now more important than ever to find a solution.

This issue prompts us to consider and develop strategies for assisting our students in comprehending the ideas required to complete the Learning Activity Sheets. According to Insorio et al. (2023), designing learning activities and resources that are appropriate for the students' understanding is the job of the teacher. They need to address the pressing issues, especially those involving the struggling pupils who are falling behind and losing interest in their studies. Henryson (2020) argues that it's crucial for teachers to stay in touch with their pupils, which can be done by using interactive worksheets or pre-recorded courses. We have considered a lot of alternatives. Accordingly, video classes are one of the primary instructional resources in distant

(Coursify.me, 2018). It is a useful tool since it allows for straightforward and engaging instruction that students find to be very appealing. As a result, we settled on producing teacher-made videos that include a lecture on the subject matter of the class as well as illustrations for each topic in Learning Activity Sheets.

In our school and Schools Division, we have not come across of any research-based intervention such as video lesson which can be sent and easily played in a Facebook messenger application as an alternative for teacher-lecture to aid the students in their independent learning at home. Hence, we conducted this research to know if our teacher-made video lessons can be an alternative to teacher-lecture for our students.

II. RESEARCH QUESTIONS

Our study aimed to answer the following questions:

1. Do the teacher-made video lessons increase students' performance in Mathematics particularly in the topics of Measures of Position?
2. How do the teacher-made video lessons help students improve their performance in Mathematics?
3. What are the successes and challenges encountered by the students during the implementation of the teacher-made video lesson in Mathematics?

III. INNOVATION, INTERVENTION AND STRATEGY

Our research focused on the effects of our created video lesson for each Learning Activity Sheets on the academic performances of our students. We created teacher-made video lesson containing a lecture of the concept, examples, and a short exercise on the topics of measures of position (quartiles, deciles, and percentiles both grouped and ungrouped data). One video lesson for every topic in the fourth quarter of the Grade 10 Mathematics curriculum

from April 25, 2022 – June 10, 2022. The topics were chosen based on the least learned competencies for the fourth quarter of the previous School Year, 2020 – 2021, and its importance as the prerequisite topics in conducting research as the highlight of the fourth quarter lessons in the Grade 10 Mathematics curriculum.

The videos were created using Microsoft Power Point. The slides were prepared first by encoding all necessary information such as the concept, examples, and short exercise with applied animations based on the lesson plans created for each topic. The slides were then added with audio record by one of the researchers and saved into video. The videos were sent to the master teachers of grade 10 Mathematics and to the division program supervisor in Mathematics for review, critique, and validation.

After the validation of the videos, they were sent to the students. The videos were specially made short and simple to fit the size requirement for Facebook messenger application to be easily sent into Facebook messenger group chats of the students. It was made so for the students do not need to download the videos to view, instead they can easily be played in messenger application.

There were 5 created video lessons for 5 Learning Activity Sheets. One video lesson for one learning activity worksheet. The instruction regarding the video lesson were integrated in the Learning Activity Plan (LAP) of the students. In the LAP, the students would know when they will receive the video lesson for them to be directed.

The video lessons were sent through Facebook messenger group chat every Monday of the week. We followed-up on the students after some time the video lesson was given through the Facebook messenger group chat. We

made use of a teacher-made short survey to follow up the students regarding the video lesson sent to them.

IV. ACTION RESEARCH METHOD

a. Research Design

A mixed-methods research methodology was employed for our study (Creswell and Piano-Clark, 2007). It was a sequential explanatory form of mixed-method research methodology where the data was gathered through both quantitative and qualitative research. This approach entailed first gathering and analyzing quantitative data, then gathering and analyzing qualitative data. Priority was placed on the quantitative part of the study, and the results were taken into account during the study's interpretation phase (FoodRisc Resource Center, 2016).

According to the Center for Innovation in Research and Teaching (2010), the goal was to use the qualitative results to support, elaborate on, and understand the findings from the qualitative phase.

b. Participants and/or other Sources of Data and Information

Our research was conducted to the selected 30 Grade 10 students from different sections of Digos City National High School under the blended learning modality enrolled during the School Year 2021–2022. We identified 5 students from every section as our respondents. These students are those identified to have no answers or have very poor results in their Learning Activity Sheets rating.

We ensured that these students have cellphones or laptops and internet connection and Facebook messenger application so they can instantly access the video lesson we sent to them.

c. Data Gathering Methods

First step in data gathering was to secure a permission from the School Principal and the Schools Division Superintendent to conduct the study at Digos City National High School. The next step was the selection of the respondents. The respondents were assembled through a virtual meet-up and were properly informed of the goals of the study. Also, they were given informed consents in which included in it were the necessary research-related information and that the participants are willing to join the study. The consents were filled-up by their parents. After the consents were collected, the respondents were given further instruction on how to fully participate in the study.

The video lessons were on the topics of measures of position which included the following: quartiles, deciles, and percentiles both grouped and ungrouped data, in the fourth quarter which were part of the Budget of Work taught on April 25, 2022 to June 10, 2022. Pretest and posttest scores were determined by the researchers as basis for the data of this inquiry.

The pretest was administered to the respondents before the fourth quarter begins. After the students answered the pretest, it was then checked, and the results were prepared for data analysis. On the first Monday of the fourth quarter, the first video lesson guide was sent to the messenger group chat of the students. The same procedure is observed every Monday for the next 4 weeks of the grading quarter. After 5 weeks of providing video lessons, the posttest was administered. After the students answered the posttest, it was then checked and the result was available for data analysis.

A survey was provided to the students to be answered after the posttest was administered. The survey was collected, and the responses were consolidated for data analysis.

d. Data Analysis Plan

The data gathered were analyzed and interpreted. The researchers used Wilcoxon signed-rank test, a nonparametric test that does not assume normality in the data as defined by Laerd Statistics. The researchers decided to use Wilcoxon signed-rank test because the data passed all three assumptions that are required for a Wilcoxon signed-rank test to provide a valid result. It is only appropriate to use this instrument because Wilcoxon signed-ranked test is used to test for significant differences between two conditions of an independent variable where the same participants are responding in both conditions of the study.

1. This study also utilized interview as another source of data. Thematic Content Analysis was used in analyzing qualitative data for in-depth analyses of how and in what ways the teacher-made video lesson improved the performance of the students.

V. DISCUSSION OF RESULTS AND REFLECTION

Presented in this chapter is the result of the study and the discussion of the findings in textual and tabular forms concerning the learning experiences of the students using the self-learning modules with the aid of the teacher-made video lessons during the COVID-19 pandemic.

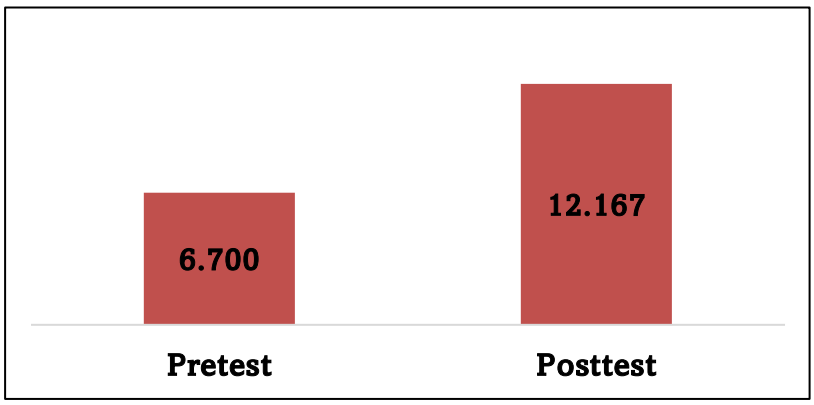
Does the video lesson increase students' performance in Mathematics particularly in the topics of Measures of Position?

Pretest and posttest assessment measures were given to the respondents on the topics of Measures of Position before and after the intervention of the video lessons were supplied to determine if there is any change attributed to the intervention provided to the students.

Graph 1 shows the presentation of the average scores of the pretest and posttest results taken by the respondents before and after the teacher-made

video lessons were provided as aid to the self-learning modules of the students while learning at home.

Graph 1. Students' Performance in Mathematics Using Video Lessons



It can be gleaned from Graph 1 the difference between the pretest result and the posttest result. It merely demonstrates how much assistance the students needed to study the subjects assigned to them in the fourth quarter. This finding confirms the researchers' need to offer video lessons in order to support students who struggle to learn in the absence of a teacher lecture.

Videos are more effective than reading materials at drawing a student's attention and holding it, claims Coursify.me (2018). This method uses demonstration to help students understand complex ideas more easily and develop a stronger sense of commitment. After the intervention of the teacher-made video lessons, the posttest result indicated that the respondents' scores had increased.

Table 1 shows the presentation of the detailed result of the data after being analyzed and interpreted using the Wilcoxon signed-ranked test.

Table 1. Tabular Presentation of the Result of Statistics

Sample Size	30
W-value	0
Mean Difference	-4.3
Sum of Positive Ranks	0
Sum of Negative Ranks	465
Z-value	-4.7821
Mean (*W*)	232.5
Standard Deviation (*W*)	48.62

A Wilcoxon matched pairs signed rank test was conducted to determine whether there was a difference in the ranking of pretest and posttest results of the respondents. Results of that analysis indicated that there is a significant difference in results of the pretest and posttest, $Z = -4.7821$, $p < 0.05$. The result infers that posttest result is significantly increased compared to the pretest result. This indicates that the teacher-made video lessons provided considerably helps the students increase their scores in the test. This implies that the intervention is successful.

How does the teacher-made video lesson help students improve their performance in Mathematics?

Table 2 shows the themes and core ideas on how the teacher-made video lesson helps the students in understanding their lessons in Math to improve their performance in mathematics.

Table 2. Themes and Core Ideas on How the Video Lesson Helps the Students in Understanding their Lesson and Improve their Performance in Mathematics

Themes	Core Ideas
Provision of Learning Aid	• It helps the learners in understanding the lessons in the absence of the teacher-lecture. • Guides the learners in answering their self-learning modules. • Aids the learners in answering their learning activity sheets and summative tests.
Efficacy of the Video Lesson	• It consists of an easy yet detailed explanations of the topics with examples like that of the self-learning modules for a better understanding.

Provision of Learning Aids and Activities

The first theme focused on how the video lesson helped students learn in the absence of a real teacher lecture during the pandemic, with the main ideas being that it aids students in comprehending the lesson covered in the self-learning modules and directs them when completing summative tests and learning activity sheets.

Participants of this study mentioned that the video lesson is of great help to them in answering their modules and they are thankful of the video lessons provided to them.

> *"Malaking tulong ang video dahil mayroon akong natutunan kahit walang teacher na mag-explain sa akin. (The video lesson is of great help because I have learned even without a teacher explaining)* - ***R100***

> *"Okay ang video kasi madali lang siya aralin at intindihin kahit nasa bahay lang kami" (The video is okay because it is easy to study it and easy to understand it though we are just in our house)* - ***R4600***

> *"Ang video lesson guide makatabang sa pag-study sa akong modules ug pag-answer." (The video lesson guide helps in studying)* - ***R1700***

Some participants added that they understand and get the answers in their self-learning modules and answers their math tests.

> *"Nakakatulong sa akin yong video lesson. Mas naintindihan ko ng mabuti at mabilis naming nakukuha ang sagot sa mga tanong sa modules." (The video is helpful to me because I fully understand and I can automatically get the answers to the questions in the modules)* - ***R3200***

> *"Nakatulong ng malaki ang video sa aking kakayahang sumagot sa Math test." (The video is a big help in my skill in answering Math tests.)* ***– R300***

Another participant shared that the teacher-made video lesson guides them in answering their tests with the knowledge of the lesson they learned from the video lesson guides.

> *"Okay siya kasi kahit papaano may guide kami. Mas okay na may video lesson guide para sa amin para masagutan namin ng may alam ang mga tests." (The video lesson is okay because it guides us. It is much okay to have video lesson guide so that we are knowledgeable in answering the tests.)* ***R700***

The participant feedback proved beyond a doubt that the teacher-produced video lessons assisted students in learning and understanding their lessons in the self-learning mathematics modules and completing their activity sheets and summative tests while they were at home in a blended learning mode. It's because using digital video to explore the fascinating world of mathematics allows students to become more engaged in building their knowledge. According to Niess and Walker (2016), as a result, teachers must think about how they might modify their instruction and utilize technology to support students' learning mathematics in ways that are comparable to how kids learn and interact outside of the classroom.

Efficacy of the Video

The second theme that emerged in how effective and successful the teacher-made video lessons in aiding the students in learning Mathematics in the topics of measures of positions with the core idea that it consists of an easy yet detailed explanations of the topics with examples like that of the self-learning modules for a better understanding.

Participants of this study shared their reactions on the efficacy of the teacher-made video lessons to their learning experiences.

> *"Ang video ay nagtuturo talaga kung ano ang tamang formula at paano ang paggamit nito na dapat sundin sa isang lesson at nagbibigay din ng mga examples kada topic" (The video teaches us the correct formula and right process of solving it in every lesson and gives examples every topic.)* - ***R3300***

> *"Malaking tulong talaga ang video dahil halos lahat ng problems sa module ay na-explain sa video kaya naintindihan ko ang lesson sa modules" (The video is a big help because most of the problems in the modules are being explained in the video that is why I understand the lessons in the modules)* - ***R2400***

According to the aforementioned comments, the effectiveness of the teacher-made video lessons that were used as a blended learning tool to help students learn and comprehend their lessons while they were at home and complete their activity sheets and summative examinations was unquestionable. According to Trinidad et al. (2022), employing video instruction in mathematics facilitates more effective processing and memory recall. The visual and aural qualities of video enable individual interpretation of information by each user. Additionally, since videos' asynchronous nature enables learners to interact with one another at any time of day or night, students may be more motivated to develop a distinctive environment for their learning provided they have access to the material.

What are the successes and challenges encountered by the students during the implementation of the teacher-made video lesson in Mathematics?

Table 3 shows the theme and core ideas on the successes encountered by the students during the implementation of the teacher-made video lesson in Mathematics.

Table 3. Successes Encountered by The Students During the Implementation of The Teacher-Made Video Lesson in Mathematics

Theme	Core Ideas
Improved Student's Ability and Skill to Answer Tests in Mathematics	• It provides knowledge of the concepts for test preparation. • The video lesson helps improve skills in in answering their tests correctly in Mathematics. • Help students answer their modules and test correctly.
Minimal Blanks in the Modules	• The modules are mostly filled with answers and are correct.

Improved Student's Ability and Skill to Answer Tests in Mathematics and Minimal Blanks in the Modules

The themes circled around the student's improved ability and skill to answer their tests in Mathematics and minimal blanks in the modules with the core ideas that the video lessons provide knowledge of the concepts for test preparation, it helps the students improve their skills in answering their modules and tests correctly in Mathematics, and the student's modules are mostly filled with answers and are correct.

Presented are some of the responses of the students on their successes during the implementation of the teacher-made video lessons in Mathematics.

> *"Nakatulong ng malaki ang video sa aking kakayahang sumagot sa Math test." (The video helps me in my ability to answer Math tests)* – ***R300***
>
> *"Mas okay na may video lesson guide para makasagot kami sa mga tests." (It's okay to have video lesson guide so that we can answer our tests.)* - ***R2300***
>
> *"Para masagutan ko ang mga modules ko ng tama." (So that I can answer my modules correctly.)* - ***R3500***
>
> *"Ito ang gumagabay sa amin na makasagot at makuha ang tamang sagot sa tests." (The video guides us to get the correct answer in the tests.* - ***R4700***

There was no challenge or difficulty encountered by the students in watching the teacher-made video lessons that were given to them, according to all of the comments and feedback from the student participants. Due to the fact that the majority of the exercises were filled with answers and there were hardly any questions, the majority of students were able to complete their modules with confidence. Most, if not all, summative test questions were answered accurately.

The aforementioned replies indicated the effectiveness of the teacher-made video lessons in assisting students' academic success in Mathematics during the pandemic when all students studied at home with their self-learning modules and worksheets. Students can watch the videos whenever they choose and from any location, allowing them to fully see and hear the subject being taught. According to an article from NextThought Studios (2023), this will allow them to process it similarly to how they process daily encounters, improving their ability to recall the content.

Conclusion

According to the findings of this study, which were supported by the posttest results, the teacher-made video lessons assisted the students in

improving their performance in mathematics during the COVID-19 pandemic while they were enrolled in a blended learning program and learning independently at home with only their self-learning modules and worksheets as resources. This conclusion is supported by Nabayra (2022) in his research that teacher-made films are good tools for assisting students in maximizing their math learning chances in the new normal. The films' adaptable, customizable, and student-friendly features meet the need of students for thorough, effective learning materials during the pandemic.

Nabayra added that video-based instructional material did indeed fulfill its intended function when it came to meeting the needs of 21st-century learners for technology-enhanced educational materials that were appropriate for the new norm of learning and would make it simpler for students to construct knowledge through videos and maintain inclusive, high-quality, and equitable mathematics education online despite the crisis. Furthermore, according to Rauf and Fauziah (2021), using videos to teach math during the Covid-19 pandemic can be a beneficial teaching tool and a smart innovation. One audio-visual learning medium that is particularly helpful at assisting the learning process is video.

These are the implications for educational practice based on the themes that emerged from the students' responses: (a) the video lessons offer learning assistance to students who are learning independently to improve their performance in mathematics; and (b) the effectiveness of the video lessons as a learning aid improved students' ability and skill to answer their math tests.

Recommendation

Videos are used to teach and learn mathematics, which benefits both students and teachers by speeding up processing and memory recall.

According to Beltran (2021), these video-based lessons encourage students to work together and be creative, and having access to videos might inspire them to design unique learning environments.

In view of the findings and conclusion of this study, the following are recommended:

1. The Schools Division Office may advise the use of the teacher-made video lessons as aid to the students under blended learning modality and students who are independently learning at home or anywhere because the teacher-made video lessons are demonstrated to improve student learning performance in mathematics in the absence of actual teacher-lecture.
2. The Schools Division Office may encourage the creation of video lessons to be provided to the students who are struggling to remember the lectures of the teachers so that they may play and replay the videos to continue their learning experiences at home.
3. Teachers may continue to use the teacher-made video lessons in all Mathematics courses across all grade levels due to the fact that this is an excellent answer for students using a blended learning method due to the pandemic.

Reflection

The findings of this study implies that students who are experiencing academics struggles if not remedied with necessary interventions will most likely fail to learn their lessons that eventually lead to failing the subject. An intervention such as video lessons are useful to students who are independently learning at home without the presence of a teacher in improving their skills academically. This intervention, is one of the many proven interventions, will aid the students in their academic struggles to learn their

lessons and pass their subject. This will ease the student's burden in understanding their lesson especially those students who could not grasp the concept in the first time it was explain to them because they can replay the video lesson as many times they want until they can fully get the concept of the lesson in the video.

In this time of pandemic, the research revealed the challenges our kids have when learning mathematics in a blended learning environment without the actual presence of their teacher. Given these challenges, it presents a significant task for the teachers to create an intervention that will assist the students in learning in a manner similar to how they do so in a classroom with a teacher present. Without a teacher demonstrating and explaining the steps, students may find it challenging to understand the problem-solving procedures involved in nearly all mathematics topics, particularly those that call for the use of formulas. The students struggle to choose the appropriate formula from the ones given, and none will help them arrive at the right solutions.

Thus, the intervention through the creation of teacher-made video lessons is very timely and appropriate since the integration of digital media on teaching-learning process is highly encourage because it is very appealing and interesting, motivating, and engaging to the students.

Our video lessons' effectiveness helped students study their self-learning modules, which helped them get better at filling out worksheets and other examinations. Very few worksheets and self-learning modules were left unfinished as a result. Our teacher-made video lessons are effective and have shown to raise students' math performance. This is corroborated by a study of Gratela and Janer (2022), which found that video lessons were effective in raising students' numeracy levels and advising math instructors and other

curriculum implementers to think about using them as supplemental materials in the distance learning mode of the new normal education.

VI. PLANS FOR DISSEMINATION AND UTILIZATION

The researcher would like to present and disseminate the result and effect of this study to the school for the next School Year 2022 – 2023 upon the approval of the school principal. We plan to present it first to our department, the mathematics department, especially to our Officer-In-Charge of the department, to the Math subject coordinator, and Grade 10 Math teachers to be followed by presentation to other school annexes and extensions.

The plan for institutionalization of this study in all school grade levels will be materialized soon through the help of the Digos City Division Education Program Supervisor in Math. Due to its effectiveness, this research is highly recommended as intervention material to enhance learning process and experience of students under the new normal.

In the implementation of the full face-to-face learning modality, this teacher-made video lessons are still useful because our division, the Digos City Division, is part of Davao del Sur province that is still under Alert Level 2 in the guidelines on the nationwide implementation of alert level system for COVID-19 response set by Inter-Agency Task Force for the Management of Emerging Infectious Diseases, where our students are divided into 2 sets in most classes with high population like 50 students and above. Each set of students are given 2 days to go to school for face-to-face learning and the rest of the week will be spent for unsupervised learning at home with bring home assignments. In these days of unsupervised learning the teacher-made video lessons can be used by the students to continue their learning experiences and answer their assignments with ease.

VII. REFERENCES

Beltran, R. (2021). *Effectiveness of Modular and Video Lessons in Mathematics to The Performance of Grade 5 Pupils*. International Journal of Advanced Multidisciplinary Studies. https://www.ijams-bbp.net/wp-content/uploads/2021/12/IJAMS-December-25-researches-202-211.pdf

Center for Innovation in Research and Teaching. (2010). *Choosing a Mixed Method Design.* https://cirt.gcu.edu/research/developmentresources/research_ready/mixed_methods/choosing_design

Creswell, J. & V. Piano-Clark. (2007). *Designing and Conducting Mixed Methods Research*. Thousand Oaks, California: Sage

Charlton, B. (2006). *Lectures are an effective teaching method because they exploit human evolved 'human nature' to improve learning - Editorial*. Medical Hypotheses 2006; 67: 1261-5. https://www.hedweb.com/bgcharlton/ed-lect.html

Coursify.me. (2018). *Advantages of Using Video Classes in Distance Learning*. https://blog.coursify.me/en/advantages-of-using-video-classes-in-distance-learning/#:~:text=The%20video%20classes%20are%20one,usually%20very%20pleasing%20to%20students.

FoodRisc Resource Center. (2016). *Mixed Methods Research*. http://resourcecentre.foodrisc.org/mixed-methods-research_185.html

Gratela, K. & S. Janer. (2022). *Effectiveness of Video Lessons in Improving the Numeracy Level of Grade 7 Students Amidst Pandemic*. United International Journal for Research & Technology. https://uijrt.com/articles/v3/i8/UIJRTV3I80020.pdf

Henryson, L. (2020). *5 Ways to Make Distance Learning Effective for Students*. Social Studies Blog. https://www.socialstudies.com/blog/5-ways-to-make-distance-learning-effective-for-students/

Insorio, A., Z. Villanueva, & D. General.(2023). *Video Lessons as Mathematics Supplementary Learning Materials for Struggling Students in Online Distance Learning*. Contemporary Mathematics and Science Education. https://www.conmaths.com/download/video-lessons-as-mathematics-supplementary-learning-materials-for-struggling-students-in-online-12818.pdf

Korolkov, A., G. Germanov, O. Langueva, A. Shevyakova, & N. Poskrebysheva. (2020). *Advantages and disadvantages of distance learning on students' and teachers' of the physical culture faculty opinion.* https://www.bio-conferences.org/articles/bioconf/full_html/2020/10/bioconf_pes2020_00058/bioconf_pes2020_00058.html#:~:text=The%20disadvantages%20of%20the%20distance,lack%20of%20students%20individual%20characteristics

Leard Statistics. (2018). *Wilcoxon Signed-Rank Test using SPSS Statistics*. https://statistics.laerd.com/spss-tutorials/wilcoxon-signed-rank-test-using-spss-statistics.php

Nabayra, J.(2022). *Youtube-Based Teacher-Created Videos For Online Mathematics Learning During The Pandemic And Its Effect To Students' Mathematics Performance*. Webology. https://www.webology.org/data-cms/articles/20220206014849pmwebology%2019%20(2)%20-%20109.pdf

NextThought Studios. (2023). *Why Videos are Important in Education*. https://www.nextthoughtstudios.com/video-production-blog/2017/1/31/why-videos-are-important-in-education#:~:text=Videos%20increase%20student%20engagement%2C%20which,discussions%20or%20review%20particular%20areas.

Niess, M. & J. Walker. (2016). *Guest Editorial: Digital Videos as Tools for Learning Mathematics*. Contemporary Issues in Technology and Teacher Education (CITE Journal). https://citejournal.org/volume-10/issue-1-10/mathematics/guest-editorial-digital-videos-as-tools-for-learning-mathematics/

Rauf, N. & U. Fauziah. (2021). *The Use of Mathematics Learning Video During the Pandemic Covid-19 at SMA Datuk Ribandang Makassar*. International Conference on Educational Studies in Mathematics. Advances in Social Science, Education and Humanities Research

Study Lecture Notes. (2023). *Lecture Method of teaching, Definition, Advantages & Disadvantages*. http://studylecturenotes.com/lecture-method-of-teaching-definition-advantages-disadvantages/

Trinidad, M, L. Vertudes, & A. Garcia. (2022). *Utilization of Video Lessons as Mathematics Intervention Material in Modular Distance Learning*. IRE Journals Volume 5 Issue 12. https://www.irejournals.com/formatedpaper/1703547.pdf

Whitehorse, E. (2023). *Why Lecture is Still a Good Teaching Method*. https://www.dremilywhitehorse.com/blog/why-lecture-is-still-a-good-teaching-method

Teacher-Made Video Lessons Link

Google Drive Link: https://tinyurl.com/45zcn8dx