

Vodcasting (Video Podcast) as a Tool for Enhancing Modular Students' Performance in Science

Shiela D. Vergara¹

Laguna State Polytechnic University, Sta. Cruz, Laguna, Philippines

Abstract

This study focused on determining the effect of using Vodcast as supplementary material in Science among the selected grade nine Modular Distance Learning students of Majada In Integrated School during the school year 2021-2022 and it specifically sought to answer the following questions: (1) What is the mean level of acceptability of the Video Podcast evaluated by experts in terms of suitability, instructional design, technical resources, and flow experience?; (2) What is the level of student's performance in terms of Pre-Test and Post-Test?; (3) What is the mean level of students' perceptions of Vodcast as supplementary material in Science in terms of content and satisfaction in learning?; and (4) Is there a significant difference in the level of performance of the students between pre-test and post-test? The study employed both descriptive and experimental design. Percentage and independent t-tests were used to determine the acceptability of vodcasting evaluated by the experts who were participated by Science Teachers and IT experts. Instruments employed in the study were researcher-made survey questionnaires for the experts and the selected Grade 9 modular distance learning students of MIIS. Thus, the study found that using Vodcast as a supplement to the printed Self-Learning Module (SLM) can improve students' performance during the Modular Distance Learning (MDL) in the new normal education. Moreover, the study suggests that Science teachers may use video podcasting as supplementary material in remote learning since it can improve learning outcomes. Since vodcasting has been found to have a significant positive impact on Modular Distance Learning students, teachers of other areas, as well as science teachers, may use this material or technology to achieve positive learning outcomes. Although making a video podcast takes time and work, the benefits to students can be significant. Future researchers may examine selecting respondents based on their learning styles and whether they are low or high-performing students in class. A similar study with a larger group of respondents may be conducted to see if the same results can be established.

Keywords: distance learning, modular distance learning, new normal education, podcast, vodcasting, students' performance in Science

1. INTRODUCTION

When the global coronavirus (COVID-19) pandemic broke out in January 2020, it wreaked havoc on a wide range of institutions, including schools. Since the outbreak, the Department of Education (DepEd) has issued policy guidelines for continuing education under the Basic Education – Learning Continuity Plan (BE-LCP), which includes the essential educational requirements during COVID-19. In addition, BE-LCP proposed that distance learning delivery modalities be implemented to assist the educational sector in the new normal context.

Distance learning is a delivery method in which students study by accessing content from various sources. It is where the student does self-directed study at home or elsewhere (DO 21, s. 2019, pp. 96). Online Distance Learning (ODL), Modular Distance Learning (MDL), TV-Video/Radio-Based Instruction, or Blended Distance Learning are all options for implementing it. According to the 2020 National Survey, blended learning is the second most popular modality in the country, either a combination of face-to-face and Modular Distance Learning (MDL); or MDL and Online Distance Learning (ODL).

The Internet facilitates learner-teacher and peer-to-peer contact in ODL. It can be effectively practiced using a Learning Management System or associated technologies like Google Meet, Zoom, and others. Both professors and students, however, must have a stable internet connection. MDL, on the other hand, is a type of distance education that allows students to use self-learning modules (SLMs) in digital or printed form, as well as other learning materials, including Learner's Materials, activity sheets, and textbooks.

In a study by Khader (2021), blended learning is effective in improving students' achievement, and incorporating technology in the learning process can enhance actual students learning though lack of gadgets can widely affect the performance of these students. Teachers encountering challenges in facilitating modular distance learning can be coped with by adapting alternative plans to harness innovative teaching strategies to equip learners with necessary skills (Castroverde, 2021). Over and above lecture notes alone, using supplementary materials such as Vodcast can

deliver demonstrable improvements in student learning and may show significant improvement in student performance 135 (McCarthy, 2017).

In this context, this research aimed to use Vodcast as supplemental teaching material for Science students in modular classes, particularly those with learning difficulties.

In addition to this, the low-performing students might become more challenged in the new set-up during the normal education setting. For instance, based on the School Report Card's Achievement Rate in Quarterly Test of the school subject for the study, the 60.25% rate in S.Y. 2018-2019 declined to 58.22% during S.Y. 2019-2020, though in S.Y. 2020-2021, there were no records of quarterly test which is based on the Interim Guidelines for the assessment of learners in light of BE-LCP Policy. This situation called for a proper and significant strategy to solve the dilemma.

The study sought to determine whether a technology-assisted material such as Vodcast as a supplement to the printed Self-Learning Module (SLM) can improve students' performance during the Modular Distance Learning (MDL) in the new normal education.

The term Vodcast refers to a process, and the body part means Video on Demand (Stavrianos, 2019); especially when there is an event, and someone needs to record an interview, a song, or similar cases, and the outcome can be an audio file (audio podcast) or a video file (vodcast) (Athanasios & Apostolos (2018). It includes audio and video content distributed in a certain way in which digital media files are disseminated across the Internet using RSS feeds (Berry, 2019). Teachers can record a series of lectures and discussions alongside a PowerPoint presentation or other educational content embedded in content and distribute the video file via Facebook groups and pages, messenger, YouTube, via Share it application, or transfer it into any available electronic devices.

Modular teaching is effective because this approach helps students learn at their own pace while learning in their learning style (Sadiq, 2014). However, some learners need a tool to enhance their learning performance, especially those non-performing students. Learning is an active process; providing multi-sensory materials can enable students to comprehend difficult subject matters. After the study, students in new normal education should be given learning options such as technology-assisted materials to aid them in their autonomous learning.

Furthermore, the participants of the study were chosen based on their learning modality and capability to use a device or television to access the material during the learning process.

1.1 Objectives of the Study

The study aimed to determine the effectiveness of using Vodcast as supplementary material for modular science students. Specifically, it sought to answer the following questions:

1. What is the mean level of acceptability of the Video Podcast evaluated by experts in terms of:
 - 1.1 suitability
 - 1.2 instructional design
 - 1.3 technical resources, and
 - 1.4. flow experience?
2. What is the level of student's performance in terms of:
 - 2.1 Pre-Test and
 - 2.2 Post-Test?
3. What is the mean level of students' perceptions of Vodcast as supplementary material in Science in terms of:
 - 3.1 content and
 - 3.2 satisfaction in learning?
4. Is there a significant difference in the students' performance level between pre-test and post-test?

2. METHODOLOGY

2.1 Research Design

The study employed both descriptive and experimental research designs. It gathered data for the study using 136 learners' raw pre-test and post-test scores. Descriptive design is a method that uses a questionnaire as its survey technique (Risi, 2022). In the descriptive part, the vodcast was evaluated by experts in terms of its acceptability. Moreover, experimental design is described as conducting research in an objective and controlled manner to optimize precision and derive particular conclusions from a hypothesis statement (Bell, 2012). The experimental part is when generated data is intended to measure the effectiveness of vodcasting.

2.2 Respondents of the Study

Selected Grade 9 students from Majada In Integrated School, the School Year 2021-2022, took part in the study. One part of Online Distance Learning (ODL) students and five sections of MDL students are being managed by the researcher. A purposeful sampling strategy was used to choose the two sections of Grade 9 students participating in the study, totaling 80 participants. The participants were drawn from students with greater access to the internet, computers, laptops, televisions, android phones, and flash drives, which were distributed to all Calamba City students. Purposive sampling is judging, selective, or subjective sampling because it relies on the researcher's judgment when identifying the units (Rai, 2012).

2.3 Research Instrument

The researcher used the following tools in this study to collect the necessary data to solve the study's problem. MELCs were used as a basis in the researcher-made pre-test and post-tests. The researcher also prepared the vodcast and survey questionnaire. The 50-item test was based on MELCs. A table of Specifications (TOS) was also provided to ensure the assessment was aligned.

Because video podcasts served as supplemental material in each weekly task, the topics covered by the material were based on those indicated in the curriculum guide. Moreover, during the production of the video podcast (vodcast), some important factors were considered. According to Federis Intellectual Property Law PH, some factors must be considered when determining whether the use of copyrighted content is fair, including, but not limited to, whether the purpose and character of the use are commercial or for non-profit educational purposes; the nature of the copyrighted work; the amount and substantiality of the portion used concerning the copyrighted work as a whole; and, finally, the impact of the use on the potential market for or value of the copyrighted work.

In addition, during the validation process, the researcher sought help and assistance from the adviser to check the coherency and appropriateness of the instruments and material. By then, the test and vodcast were presented to the experts, including the Head Teacher in Science of KIS and Science Coordinator, together with the five other science teachers of Majada In IS. Finally, the recommendations were considered in creating the final copies for student distribution.

Moreover, during the administration phase, clear printed and online instructions were provided on answering the pre-test first by the selected 80 students from Grade 9. After that, the vodcast was utilized by the learners, which was made available via flash drive, google drive, or Facebook messenger. Finally, post-test and survey questionnaires were provided after all the topics. The learning outcomes of pre-test, post-test, and survey questionnaires shall determine the effectiveness of the material to the MDL students to show the impact or effectiveness of Vodcast on the performance and learning process.

2.4 Statistical Treatment

The data from the test were collected into tables, carefully evaluated, and interpreted based on the statistical treatment results.

Mean was utilized for the arithmetic mean (average) of the distribution. Standard Deviation was used to assess the variability of the pre-test and post-test scores, while T-Test Formula was used to see if the differences between the means of two unrelated groups were statistically significant.

The Likert scale below was utilized to determine the level of acceptability of the video podcast evaluated by experts in terms of suitability, instructional design, technical resources, and flow experience.

Score	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

The researcher used a scale to measure the level of students' performance in terms of pre-test and post-test.

Score Range	Verbal Description
41 to 50	Outstanding
31 to 40	Very Satisfactory
21 to 30	Satisfactory
11 to 20	Fairly Satisfactory
0 to 10	Did Not Meet Expectations

3. RESULTS AND DISCUSSION

This section presents the analysis and interpretation of the researcher's survey findings. This section also seeks to respond to the objectives as a basis for determining the level of acceptability of the Video Podcast as assessed by experts, the level of students' performance in terms of pre-test and post-tests, and students' perceptions of Vodcast as supplementary material in Science in modular distance learning.

1. What is the mean level of acceptability of the Video Podcast evaluated by experts in terms of:
 - 1.1 suitability;
 - 1.2 instructional design;
 - 1.3 technical resources; and
 - 1.4 flow experience?

Acceptability of the Video Podcast Evaluated by Experts

The researcher determined the mean level of the video podcast in terms of suitability, instructional design, technical resources, and flow experience.

Table 1. Level of Acceptability of the Video Podcast in terms of Suitability

STATEMENT	MEAN	SD	REMARKS
1. It is suitable for the subject.	4.67	0.56	Strongly Agree
2. It is suitable to the needs of the learners.	4.66	0.56	Strongly Agree
3. The content is aligned with the given MELCs.	4.79	0.41	Strongly Agree
4. It is beneficial to the learners.	4.76	0.46	Strongly Agree
5. It can facilitate students' concentration.	4.57	0.60	Strongly Agree
6. It is helpful to the learners.	4.76	0.43	Strongly Agree
7. It is useful as supplementary material for modular distance learning.	4.63	0.57	Strongly Agree
8. It can serve as a substitute material when the teacher is not physically present.	4.66	0.59	Strongly Agree
Overall Mean		4.69	
Standard Deviation		0.53	
Verbal Interpretation		Very High	

Legend:

Score	Remark
4.21 – 5.00	Strongly Agree
3.41 – 4.20	Agree
2.61 – 3.40	Moderately Agree
1.81 – 2.60	Disagree
1.00 – 1.80	Strongly Disagree

Table 1 indicates the average level of acceptability of the video podcast as assessed by experts in terms of suitability, with all remarks indicating strongly agree with an overall mean score of 4.69 and a standard deviation of 0.53 and was verbally interpreted as very high among the students.

The respondents strongly agree that the video podcast content is suitable material for the students, which helped to attain the MELCs ($M=4.79$, $SD=0.41$). Based on the results, this means that video podcast is suitable for teaching science and the needs of learners, wherein both Kay (2012) and Behesti (2018) agreed that vodcast is effective for solving the interactive student dilemma and can aid in the acquisition of relevant skills. Furthermore, learners are motivated to achieve learning competencies through the use of video podcasts, as agreed by Hamad (2019), Elekaei (2020), and Ting (2014), which also specifically stated that it is useful in practicing skills and achieving learning objectives, which has an impact on learning outcomes, as agreed by Stone (2020).

Table 2. Level of Acceptability of the Video Podcast in terms of Instructional Design

STATEMENT	MEAN	SD	REMARKS
1. The content is easy to follow and well delivered.	4.63	0.59	Strongly Agree
2. There is an established context within the material.	4.70	0.55	Strongly Agree
3. It created an effective explanation of the lesson.	4.66	0.54	Strongly Agree

4. The material highlighted important concepts.	4.73	0.54	Strongly Agree
5. It allowed student engagement.	4.33	0.72	Strongly Agree
6. The material has interactive questions for the learners.	4.54	0.65	Strongly Agree
7. The aims and objectives were clearly stated at the material.	4.74	0.50	Strongly Agree
8. It is conducive to gain and maintain attention.	4.59	0.63	Strongly Agree
9. Instructional content can be remembered.	4.59	0.55	Strongly Agree
10. There is a positive mood and emotion in the material that can broaden students' attention.	4.60	0.60	Strongly Agree
11. Video podcast is better than learning the module alone.	4.70	0.52	Strongly Agree
Overall Mean		4.62	
Standard Deviation		0.59	
Verbal Interpretation		Very High	

Table 2 indicates the mean level of acceptability of the video podcast as assessed by experts in instructional design, which was Very High among the students, with a mean score of 4.62 and a standard deviation of 0.59.

The respondents strongly agree that the design of the video podcast highlighted the important concepts ($M=4.75$, $SD=0.54$). This means that the design catches the students' attention and engagement in the lesson. Based on the results, it means that the video podcast is engaging, and the instructional design of the video podcast contains the statement of objectives, where Brame (2016) and Liu (2013) both agreed that the way of presenting the lesson must be in order, and interactive questions (Tees, 2018 and Palaigeorgiou, 2019) must be included. Furthermore, the material must be designed in accordance with the DepEd-mandated Daily Lesson Log, ensuring that the lesson flows as planned.

Table 3. Level of Acceptability of the Video Podcast in terms of Technical Resources

STATEMENT	MEAN	SD	REMARKS
1. The presentation enables learning.	4.71	0.51	Strongly Agree
2. It used auditory and visual channels to convey the corresponding information.	4.70	0.49	Strongly Agree
3. The important information is highlighted.	4.73	0.45	Strongly Agree
4. The video is simple and informative.	4.76	0.46	Strongly Agree
5. It used conversational language.	4.61	0.57	Strongly Agree
6. The audio is loud and clear.	4.63	0.57	Strongly Agree
7. The video podcast has a high quality.	4.64	0.57	Strongly Agree
8. The material is visually appealing.	4.69	0.55	Strongly Agree
9. The video editing is done with creativity and critical mind.	4.69	0.55	Strongly Agree
10. The length of the video enables to cover all the necessary objectives.	4.67	0.58	Strongly Agree
11. The material has interactive questions.	4.56	0.61	Strongly Agree
12. The teacher has a modulated voice all throughout the lesson.	4.64	0.61	Strongly Agree
13. The content is quality, concise and clear.	4.66	0.54	Strongly Agree
Overall Mean		4.67	
Standard Deviation		0.54	
Verbal Interpretation		Very High	

Table 3 shows the mean level of acceptability of the video podcast as evaluated by experts in terms of technical resources, which was interpreted as very high among the experts, with a mean score of 4.67 and a standard deviation of 0.54.

The respondents strongly agree that the important information in the video podcast is highlighted within the material ($M=4.73$, $SD=0.45$). This means that video podcasts are simple and conversational, facilitate learning by providing visually and auditorily appealing content and the information is relevant to the objectives, which is agreed by Obeyemi and Beyram (2015), audio is loud and clear (Harrison, 2019), visually appealing (Ramlogan, 2014), and the length of the material preferably shorter one (Zainuddin, 2015) must be taken in consideration. In addition, an important point in the video must be highlighted and must minimize noise problems (Thompson, 2012).

Table 4. Level of Acceptability of the Video Podcast in terms of Flow Experience

STATEMENT	MEAN	SD	REMARKS
1. There is a perceived efficiency within the material.	4.63	0.57	Strongly Agree
2. It can facilitate concentration.	4.59	0.58	Strongly Agree
3. The teacher's presence in the video podcast helps to increase stickiness to the material.	4.64	0.51	Strongly Agree
4. The material can facilitate learning enjoyment to modular distance learning students.	4.66	0.51	Strongly Agree
5. Learning outcomes can be achieved because of the material.	4.73	0.45	Strongly Agree
6. It can stimulate interest to the learners.	4.70	0.49	Strongly Agree
Overall Mean		4.66	
Standard Deviation		0.52	
Verbal Interpretation		Very High	

Table 4 indicates the mean level of acceptability of the video podcast as measured by experts in terms of flow experience, which was Very High among the students, with a mean score of 4.66 and a standard deviation of 0.52.

Respondents strongly agree that video podcast helps in achieving learning outcomes ($M=4.73$, $SD=0.45$) and stimulates interest of the learners ($M=4.70$, $SD=0.49$), while the statement that video podcast facilitate concentration has the lowest mean ($M=59$, $SD=0.58$).

Based on the results, it means that interest and stickiness to the material, which pertains to an individual's flow experience, a condition of being absorbed in what is being done and when people are having fun (Wang, 2020), is an important factor that must be observed in a video podcast and which will therefore result to positive learning outcomes and also agreed by Lewis (2020) and Chan (2014).

The material must be effective in providing stimuli for learners to remain engaged. It will take careful consideration on what to include in the video podcast during the production phase to keep the material concise and informative while facilitating enjoyment and attentiveness. When all these factors are considered, providing an experience regardless of the distance between the teacher and the learner, these students can attain the desired learning objectives. Brecht (2012) opposes the findings where he believes that students tend to disturb their study concentration when a technology-assisted material is present in the learning process.

2. What is the level of student's performance in terms of:

2.1 Pre-Test and

2.2 Post-Test?

Level of Students' Performance in Pre-test and Post-Test

The researcher compared the students' mean performance on the pre-test and post-test.

Table 5. Level of Students' Performance in terms of Pre-Test and Post-test

RANGE	PRE-TEST		POST-TEST		REMARKS
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	
41 to 50	0	0.00	8	10.00	Outstanding
31 to 40	18	22.50	28	35.00	Very Satisfactory
21 to 30	32	40.00	29	36.25	Satisfactory
11 to 20	28	35.00	15	18.75	Fairly Satisfactory
0 to 10	2	2.50	0	0.00	Did Not Meet Expectations
Total	80	100.00	80	100.00	
Overall Mean	23.28		29.53		
Standard Deviation	8.39		8.77		
Verbal Interpretation	Satisfactory		Satisfactory		

Table 5 illustrates the level of students' performance in terms of pre-test and post-test.

Per the pre-test, out of eighty (80) students, thirty-two (32) or 40.00% of the total population gained scores of 21 to 30, which was satisfactory. This was followed in frequency by those who scored 11 to 20 points which twenty-eight (28) students or 35.00% of the population were identified as fairly satisfactory. On the other hand, only two (2) respondents gained 0 to 10 points which did not meet expectations.

Per the post-test, out of eighty (80) students, twenty-nine (29) or 36.25% of the total population gained scores of 21 to 30, which was Satisfactory. This was followed in frequency by those who had scored 31 to 40 points, and twenty-eight (28) students, or 35.00% of the population, were identified to score as such. On the other hand, only eight (8) respondents gained 41 to 50 points.

Overall, students' performance in pre-test and post-test is on the same level with the mean score of 23.28 and standard deviation of 8.39, on the other hand, post-test mean score of 29.53 and standard deviation of 8.77, verbally interpreted as satisfactory.

Based on the result, there was a positive change in students' performance. However, it falls on the same level. Based on the researcher's observation, because some students indicated that they were distracted by household chores and others had an inconsistent internet connection, the teacher had difficulty encouraging them to finish watching and studying the material on time.

Moreover, according to the results, the learners' performance improved significantly between the pre-tests and post-tests. Supplementing video materials in the learning process has a substantial impact on factors for motivation and learning efficiency, according to Ljubojevic (2014), and as a result, students can better understand and recall the essential elements of a lecture.

Moreover, recorded video for self-study has a positive effect and can help improve the students' performance which is both agreed by Yao (2020) and Dalal, (2014).

Furthermore, after carefully analyzing the data, the researcher can conclude that it can help students improve their performance; however, it is unclear whether it can be used as an intervention for students who do not achieve the passing score or 50% of the items as score in both the pre-test and post-test.

3. What is the mean level of students' perceptions of Vodcast as supplementary material in Science in terms of:
 - 3.3 content and
 - 3.4 satisfaction in learning?

Students' Perception on Vodcast as a Supplementary Material in Modular Distance Learning

After utilizing the vodcast in selected Science Modular Distance Learning students of Grade 9, the researcher also gathered the learners' perception in terms of its content and satisfaction of learning.

Table 6. Level of Students' Perception on Vodcast as a Supplementary Material in Science in terms of Content

STATEMENT	MEAN	SD	REMARKS
1. The content in the video podcast is interesting and appealing as a material in Science.	4.25	0.72	Strongly Agree
2. I love the video podcast because it increases my understanding of the lesson.	4.15	0.73	Agree
3. I can focus on the important learning objectives because they are clearly shown in the video podcast.	4.18	0.85	Agree
4. The video podcast is very useful as supplementary material in modular distance learning because it includes the significant information needed to learn.	4.01	0.85	Agree
5. I love the video podcast because it helps me improve my learning performance because it includes the essential knowledge and skills needed to acquire.	4.14	0.85	Agree
Overall Mean		4.15	
Standard Deviation		0.80	
Verbal Interpretation		High	

Legend	Score	Remark
5	4.21 – 5.00	Strongly Agree
4	3.41 – 4.20	Agree
3	2.61 – 3.40	Moderately Agree
2	1.81 – 2.60	Disagree
1	1.00 – 1.80	Strongly Disagree

In terms of content, Table 6 shows the average level of students' perception of vodcast as a supplemental material in science which has a mean score of 4.15 and a standard deviation of 0.80, indicating that their perceptions were High.

Based on the results, video podcasts must exhibit clear statement of objectives, increasing students' understanding of the lesson, which is also agreed by Hoover (2018) and McNeill (2012). Moreover, learning occurs best when more senses are engaged, and most learners' attention is drawn to a video. According to Thompson (2013) and Teo (2016), digital natives prefer to learn through image, sound, and video rather than text alone. Using the same script or learning content in printed learner materials and video podcasts can have a favorable influence.

Table 7. Level of Students' Perception on Vodcast as a Supplementary Material in Science in terms of satisfaction in learning

STATEMENT	MEAN	SD	REMARKS
1. I love the media (content, audio and video quality) used in the video podcast because it stimulates my interest to learn.	4.05	0.79	Agree
2. I am attentive to the video podcast, and I think it will help me perform better in Science.	4.03	0.76	Agree
3. The video podcast is useful in answering my assignments or learning tasks.	3.89	0.99	Agree
4. My skills in answering the learning tasks in Science improved and tasks became easier because of the video podcast.	4.05	0.76	Agree
5. I am satisfied with the video podcast as a learning tool in Science to enhance my performance rather than the module alone because I can see and hear my lesson at the same time.	4.01	0.86	Agree
Overall Mean		4.01	
Standard Deviation		0.84	
Verbal Interpretation		High	

Table 7 shows the mean level of students' perception of vodcast as supplemental material in science in terms of learning satisfaction, which was High among the students with a mean score of 4.01 and a standard deviation of 0.84.

According to the findings, learning satisfaction can assist in stimulating interest in learning, be valuable in completing learning tasks and be an effective learning tool for improving performance. As the researcher mentioned

earlier, visually appealing materials tend to arouse learners' interest since learners nowadays are considered digital natives, which is agreed by Tobin (2014) and Amini (2015). Also, skills in answering the learning tasks become easier when an instructor is guiding it because learning in a guided condition would develop better scientific attitudes (Buntem, 2014). Exams or assignments that demand higher-order thinking skills promote conceptual knowledge (Jensen, 2014). Instead of only memorizing facts and figures, guided questions must be added when presenting educational videos. 141

4. Is there a significant difference in the level of performance of the students between pre-test and post-test?

Table 8. Significant Difference on the Level of Performance of the Students Between Pre-Test and Post-test

	Mean	t statistic	Critical t value	p-value	Analysis
Pre-Test	23.275	-10.977	1.990	0.000	Significant
Post-test	29.525				

Table 8 presents the significant difference in the level of performance of the students between the pre-test and post-test. There is an observed significant difference between the pre-test and the posttest as evidenced by the t statistic -10.977. A negative t-statistic suggests that the post-test scores are higher than the pre-tests. Furthermore, the statistic is way beyond the critical value of 1.990. The computed p-value of 0.000, which is less than the significance of alpha 0.05, implies the significance of the test.

From the findings above, it can be inferred that at a 0.05 level of significance, the null hypothesis "There is no significant difference in the level of performance of the students between pre-test and post-test" is rejected. When learners engage in learning activities other than traditional classes (Zainuddin, 2015), their performance improves. One of the reasons why videos are useful is because learners may control the video by rewinding, pausing, and replaying it as needed. In effective videos, the multimedia method enables the simultaneous utilization of learners' verbal and graphical cognitive pathways (Ferrer, 2014). Moreover, based on the findings, post-test showed increase in performance in comparison to the pre-test, indicating that vodcast as supplementary material in Science has a positive impact to learning. According to Tune, (2013) and Rodgers (2020) who has similar results, the learners benefit from a teaching-learning approach that includes videos to support the lecture and discussion.

4. CONCLUSION AND RECOMMENDATION

The mean level of acceptability of the Vodcasting evaluated by experts is very high. Comparing the pre-test and post-test results implies that vodcasting can increase the students' performance. The mean score revealed that the students' perception regarding vodcasting as supplementary material in MDL is high, which means that it has a positive impact. The findings revealed that vodcasting technology has a significant effect on enhancing modular students' performance in science. As a result, the hypothesis is rejected, implying that using video podcasts as supplemental material in Science in Modular Distance Learning in the new normal setting improves student performance.

The study revealed the effectiveness of Vodcasting as a Supplementary material in Modular Distancing in Science. Thus, the following recommendations are a result of this presented. Because vodcasting has been shown to have a major positive influence on Modular Distance Learning students, teachers of other subjects, not only Science, can incorporate the creation of this material or tool to promote positive learning results. Although creating a video podcast requires effort, the benefits can benefit students. Future researchers may examine selecting respondents based on their learning styles and whether they are low or high-performing students in class. A similar study with a larger group of respondents may be conducted to see if the same results can be established.

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