

**VIDEO CLIPS INTEGRATION IN UNDERSTANDING WEATHER
ELEMENTS AMONG GRADE 4 PUPILS**

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ABSTRACT

This study evaluated the effectiveness of integrating video clips in helping students to acquire deeper and higher understanding on weather elements. According to Organisation for Economic Co-operation and Development (OECD) (2018), Trends in International Mathematics and Science Study (TIMSS) (2019) and Bernardo (2020), Filipino learners fall behind from other countries in Science and Mathematics education. For this reason, teacher-researchers developed, administered, and tested different interventions and remediation to improve Science and Mathematics teaching-learning process in the country. This also motivated the researcher to conduct study on integrating video clips in understanding the weather elements among 34 Grade 4 pupils of Cabbo Elementary School employing total enumeration sampling. Quasi-experimental approach research design, particularly the pre-test and post-test design was utilized. The pre-test and post-test mean scores showed that the understanding of the participants has increased significantly by 15.59%. This implies that there is an increase in the performance of the participants during the post-test. Moreover, the paired sample t-test analysis and the computed η^2 revealed that the intervention has significant effect on the score of the participants. Hence, it was concluded that integrating video clips with modular instruction in the new normal is effective in helping students to have deeper and higher understanding on weather elements. Thus, it is highly recommended that video clips be integrated with modular instruction on the different topics in science as well as other subjects in the new normal.

Keywords: *level of understanding, weather elements, video clips, integration, Science*

INTRODUCTION

Today's world is increasingly becoming more science-oriented, and excellence in science is necessary to live effectively and to be globally competitive. Science teachers continue to provide quality education to their pupils to make them 21st Century pupils by adapting different innovations with fast-changing technology.

However, despite interventions made and remediation administered, TIMSS (2019) revealed that Filipino students fall behind from other countries in the international assessment for Mathematics and Science Grade 4. In Science, 13% of Filipino pupils were on low benchmark, which means they had limited understanding of scientific concepts and limited knowledge of fundamental Science facts, while 87% did not even reach this level (Bernardo, 2020).

Programme for International Student Assessment (PISA) of the OECD (2018) revealed also that Filipino learners placed last among 79 participating countries and near last in Science and Mathematics.

Furthermore, research revealed that elementary pupils have mostly very short attention spans and low interest in reading long text, especially in this generation age where technology is at their fingertips at all times. If teaching is done straight out of a science textbook or just reading from printed modules, they cannot grasp well what is expected for them to learn. It is therefore important to integrate or incorporate video clips in the lessons with the absence of the teacher to explain the lesson. Five-minute videos on the topics will help them understand better.

Moreover, research estimates that 90% of information transmitted to the brain is visual and they are processed 60,000 times faster than text. This proves that video can improve learning and increase the rate at which pupils retain information.

Also, studies have shown that the use of short video clips allows more efficient processing and memory recall. The visual and auditory nature of

videos allows each user to process information in a way that's natural to them. In a nutshell, videos are good teachers (Bevan, 2020).

In addition, research also shows that videos are useful media to demonstrate aspects that cannot be recreated in a classroom. Most pupils are interested in video, and it can stimulate and arouse curiosity.

On the other hand, the performance of Grade 4 pupils of Cabbo Elementary School in Science during their Grade 3 fourth quarter is remarkably low as it is indicated in their computed grades. Twenty-one pupils out of 34 pupils got grades ranging from 75% to 79%.

Modular learning has been used to continuously provide quality education to the learners during the pandemic. However, it is noted by the proponent that during home visitation conducted to monitor learners' modular learning, 25 out of 34 pupils had difficulty understanding the written concepts on the modules. Moreover, there are about 20 parents who gave feedback that they also had difficulty explaining the concepts to their children.

The above reasons prompted the proponent to conduct research on integrating video clips in understanding the weather elements among Grade 4 pupils. Furthermore, she was motivated to supplement the absence of a teacher in discussing the concepts in the distance learning mode. It would be difficult for the pupils to imagine the weather elements and the weather instruments by just reading from the modules. Learners would be more interested in engaging than just reading from the concepts printed in the module. The pupils can view the video clips using their smartphones, television, tablet, or laptop even without internet. Hence, the purpose of this action research is focused on integrating videos with modular instruction in the new normal.

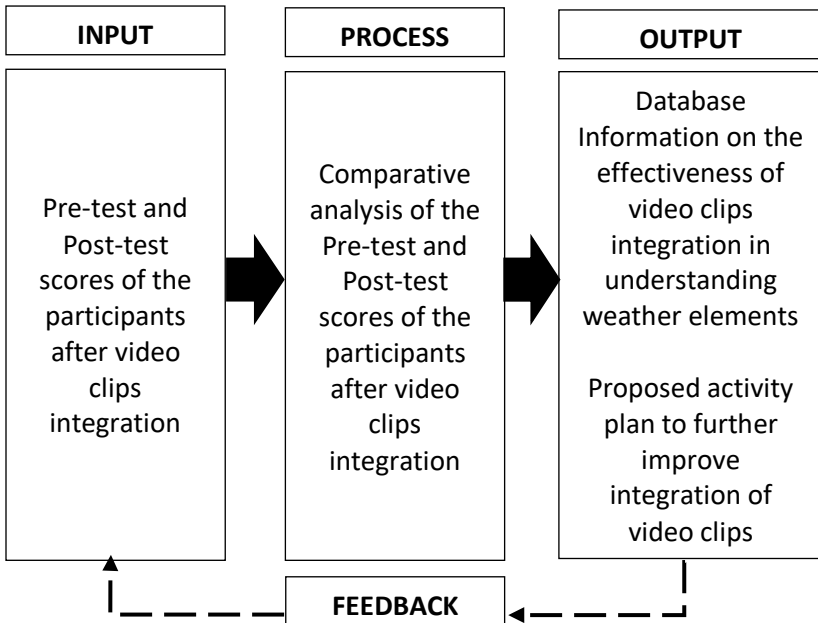
Conceptual Framework

According to Bevan (2020), videos are good teachers. Studies have also shown that the use of short video clips allows more efficient processing and memory recall. The visual and auditory nature of videos allows each user to process information in a way that is natural for the students.

This paper is designed to test the effectiveness of integrating video clips in understanding the weather elements. It was guided by the paradigm below. The inputs for the paper are the pre-test and post-test scores of the participants after video clips integration. These scores were analytically compared. This paper is expected to provide information on the effectiveness of video clips integration in understanding weather elements together with a proposed activity plan to further improve integration of video clips.

Figure 1

Paradigm of the Study



Statement of the Problem

This study focused on the integration of video clips in understanding the weather elements among Grade 4 pupils of Cabbo Elementary School.

Specifically, it sought to answer the following questions:

1. What are the mean pre-test and post-test scores of participants after video clips integration?
2. Is there a significant difference between the pre-test and post-test scores of the participants?
3. What is the effect-size of the video clips integration in understanding the weather elements of the Grade 4 participants?
4. What activity plan should be done to further enhance video clips as an intervention for its effective utilization?

METHODOLOGY

Research Design

This action research used quasi-experimental approach specifically one-group pre-test and post-test since the objective of this study is to test the effectiveness of integrating video clips in understanding the weather elements among Grade 4 pupils of Cabbo Elementary School.

Participants of the Study

The participants consisted of thirty-four (34) Grade 4 pupils of Cabbo Elementary School for the fourth quarter of the school year 2020-2021 using total enumeration sampling.

Instrumentation

The researcher utilized a 30-item self-made test for the pre-test and post-test that was validated by a master teacher and the school head.

Data Gathering Procedure

The tool was administered to the Grade 4 pupils in cluster or limited face to face following strict health protocols during the pandemic for the pre-test. Then the researcher utilized the use of video clips in teaching and learning of the pupils for the submission of module outputs. The

post-test then followed similar to the pre-test. The scores were coded, tallied, and consolidated using MS Access and MS Excel for the comparison of the pre-test and post-test.

Data Analysis

The data were analyzed using the following:

Mean and Standard Deviation. This was utilized to analyze the results of the pre-test and post-test scores of the participants.

Paired t-test. This was used to determine if there is significant difference between the pre-test and post-test scores of the participants.

Eta-squared. This was applied to determine the effect size in the integration of video clips in their understanding of the weather elements.

RESULTS AND DISCUSSION

This presents the discussion, interpretation and the analysis of data based on the problems of the study.

Table 1

Pre-test and Post-test Mean Scores of Participants after Video Clips Integration

Test	n	Mean	Standard Deviation	Qualitative Description
Pre-Test	34	9.85	3.24	Low
Post-Test	34	25.44	2.02	Mastered

Legend:

- 0 – 6 Very Low (VL)
- 7 – 12 Low (L)
- 13 – 18 Average (A)
- 19 – 24 Moving Towards Mastery (MTM)
- 25 – 30 Mastered (M)

Table 1 shows the pre-test and post-test mean scores of participants after the video clip integration. It reveals that the mean scores of the participants before and after the video clip integration are 9.85 and 25.44, respectively. This means that before the video clips were integrated, the participants had low understanding on weather elements. The participants mastered the weather element concepts after the video clip integration. This result implies that video facilitated students' understanding of the topics on weather elements as these concretized the concepts (Bellotti et al., 2009).

Table 2

Paired Sample T-test Result on the Difference between the Pre-test and Post-test Scores of the Participants

Test	Mean	SD	df	t-value	p-value	Decision
Pre-test	9.85	3.24	33	33.549	0.000	<i>Reject Ho</i>
Post-test	25.44	2.02				

A paired sample t-test was conducted to compare the scores of the participants before and after video clips integration. On average, the participants performed better after ($M = 25.44, SD = 2.02$) than before ($M = 9.85, SD = 3.24$) the video clips integration. This improvement was statistically significant at 95% confidence interval, $t(33) = 33.549, p < 0.05$. Thus, the null hypothesis (H_0) is rejected. This implies that the integration of video clips is effective in improving the understanding of students on weather elements.

Table 3

The Effect-size of the Video Clips Integration

n	t-value	Eta ²	Effect Size
34	33.549	0.97	Large Effect

Magnitude of Effect Size:

<i>Eta-Squared (% of variance explained)</i>	<i>Effect Size</i>
0.01 or 1%	Small
0.06 or 6%	Moderate
0.14 or 14%	Large

Table 3 shows the effect-size of the video clips integration in understanding the weather elements of the Grade 4 participants. It is reflected on the table that the value of Eta^2 is 0.97. The integration of video clips has a great effect on how Grade 4 participants understand weather elements. Hence, the integration of video clips is beneficial in helping students understand weather elements better. This finding agrees with that of Tuzhyk (2021) and of Bevan (2020) who revealed that videos facilitate teaching and learning, hence, fostering enhanced academic achievement. Majekodunmi and Murnaghan (2012) stressed that videos are especially useful when documenting experience and demonstrating visual information, thus, making learning more concrete and meaningful.

CONCLUSION

Based on the findings of the study, it can be concluded that the level of understanding of students on weather elements has improved after the integration of video clips. The findings also show that video clips integration has a significant effect on the level of understanding of students on weather elements. Hence, it is concluded that integrating video clips with modular instruction in the new normal provided students with a deeper and higher level of understanding on weather elements.

RECOMMENDATIONS

In light of the findings and conclusion drawn from the study, the following recommendations are derived:

1. Sustainability plan can be communicated to the teachers and other stakeholders for the effective utilization of video clips in teaching and learning.
2. Video clips may be integrated with modular instruction in the new normal to help students have a deeper and higher understanding on the different topics in science as well as other subjects.
3. DepEd teachers can develop video clips that are suitable to the interest and capability of their students.

4. DepEd may encourage its school administrators to develop their own program of activities on how to help teachers in learning and/or improve knowledge and skills in making video clips to be integrated with modular instruction in the new normal.
5. Teachers can be encouraged to conduct research work and to collaborate with other teachers in preparation of modules and other instructional materials to be used during COVID-19 pandemic.
6. Teachers may continue to explore other instructional strategies that encourage the learners' full participation to gain better understanding on the material.
7. The teacher-researcher can arrange for a research dissemination seminar whereby elementary school teachers in Peñablanca West would be invited to attend and take benefit of the findings of this study. In such gathering, it is expected that other opinions will surface which would eventually improve further the use of video clips for classroom teaching and learning.

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