Effectiveness of Food Processing Instructional Videos (Food Pro I-Vid) In Enhancing the Performance of Grade 9 TLE Learners

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ABSTRACT: This research determined the effectiveness of developed instructional videos in enhancing the performance of the learners. This study utilized quasi-experimental research design and match pairing method. The participants were grouped into control and experimental groups where each group has 30 students. Pre-test results revealed that the two groups of respondents had the same mean scores while on the posttest mean scores, the experimental group had a higher mean score than the comparison group. For the formative test mean scores of the two groups of respondents, it showed that there was a significant difference between the formative mean scores of the experimental and comparison groups. It revealed that there was a significant difference between the posttest mean scores of the experimental and comparison groups. The test of difference between the pretest and posttest means scores of both the experimental and comparison groups showed that there was a highly significant difference between the results of pretests and posttests on both experimental and comparison groups. The results showed a significant difference between the performance of the two groups of respondents. Hence this Food Pro I-Vid is an effective tool to enhance the teaching and learning among the students in TLE.

KEYWORDS: Pretest, Posttest, formative test, Instructional Video, TLE

INTRODUCTION

The United Nations report (2020) delved into the impact of the education catastrophe brought by the COVID-19 pandemic. It has wreaked havoc on education systems, affecting almost 1.6 billion students all over the globe. Some 94% to 99% of the global student population were impeded due to school closures and other learning centers. Closures of educational institutions obstruct the delivery of important services to children and communities, such as access to nutritious food, limit many parents' capacity to work, and increase the danger of violence against women and children (Ghallab, 2020).

More so, in the new normal of education, various learning modalities were given emphasis depending on the majority of the students' needs and the school's capacities to implement. While online learning is for those who have access to the internet and for those who have computers to use, modular learning modality is mostly offered to students who have no means to sustain education at a distance, leaving them with little interaction to no interaction at all with their teachers. Students merely rely on printed instructions from their modules.

Today, reading is a necessity to attain learning through the various modules and learning tasks that teachers give. For students, reading has become a springboard to grasp all the ideas, concepts and real-life lessons enclosed on every page of the module. This key factor hampers learning especially for those who cannot fully comprehend what is in the written text alone. In addition, the Technology and Livelihood Education subject requires interaction to process learning from theory into practice. With this scenario, it proves more than ever what we have been advocating since then – those educational materials and platforms are critical to improving the teaching-learning process, and modern educational technology's function is a cornerstone for many possibilities (Busayong, 2021).

Alongside the perseverance of DepEd to deliver quality and relevant education, budget allocation is recalibrated together with the initiative of local government units using the Special Education Fund (SEF). Tablets were purchased and were given to each student for better learning resources, experiences, and expansion of new learning modalities. This endeavor not only decrease paper production and lower printing cost, but also paves the way to instructional videos (Okumuş, Dağdeler, Konca & Demiröz, 2020).

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To point it out, Kukulska-Hulme (2013) defines instructional films as "the use of technology in language acquisition where portability enables a user-rich experience." This includes not only the text and pictures as the main aid for teaching and learning, but also consists of covers, MP3/MP4 recordings, and activities. This idea is underpinned by 'ubiquitous learning' (Cardenas-Robledo & Peña-Ayala, 2018) which can be enhanced through the help of augmented reality in both offline and online learning. For learners, social learning is a way of thinking through interactions between individuals and others in various situations, using immersive technology and a context-oriented emphasis (Bachore, 2015 as cited in Ghallab, 2020).

Apart from this, the fundamental qualities of learning using instructional films are accessibility, immediacy, interactivity, and schooling settings (Ogata & Yano, 2005). Ghallab (2020) believes that students and teachers can benefit greatly from learning through instructional videos. Cellphones, like computers, have slowly improved their ability to be used in teaching over the last few decades. Teachers have a critical role in the introduction and implementation of new technologies, such as the use of smartphones in TLE/TVL classes.

Relative to that, Mayer (2009, as cited in Walsh, 2017) points out the emergence of 'multimedia principle'. It suggests that words with visuals help people learn more profoundly than just plain text alone. Adding words to visuals, on the other hand, is not an effective approach to achieve multimedia learning. Furthermore, humans can only process a certain amount of information in a channel at a given time, and they make sense of incoming data by actively creating mental representations from sensory receptors to a repository of all learned information, or simply from short-term memory to long-term memory.

Consequently, these instructional videos as a learning resource paved the way for the researcher to improve teaching and learning Technology and Livelihood Education for Grade 9 high school students. The researcher who has been teaching for a couple of years witnessed the struggles and challenges of educators and students in teaching and learning skills, especially for modular learning modality. This impediment has stimulated timely and relevant innovations to tie the loose ends and bridge the gaps in learning.

In consonance, this research sought to improve the teaching-learning process especially in teaching Technology and Livelihood Education subjects among the high school students in Jacobo Z. Gonzales Memorial National High School. The developed instructional videos aim to promote better engagement with students, and offer varied educational resources such as the inclusion of videos, audio recordings and speech simulations accessible even for offline learning. Also, this research strived to empower students as active knowledge constructors in line with the demands of the 21st century.

This study may provide a relevant contribution to the teacher in Technology and Livelihood Education in enhancing the performance of TLE- Food Processing students. Real-life demonstrates that, even if students want to learn, a lack of instructional materials makes it difficult to learn and understand the lesson effectively, especially in distance learning. Indeed, instructional materials play an important part in improving student performance and deciding how successfully teachers teach and deliver lessons in their classrooms. The researcher came up with the idea to make a Food Pro I-Vid, an instructional video in Food Processing TLE 9 to enhance the performance of the Grade 9 students at Jacobo Z. Gonzales Memorial National High School.

OBJECTIVES OF THE STUDY

This research determined the effectiveness of Food Pro I-Vid (Instructional Videos) in enhancing the performance in TLE of Grade 9 students in Jacobo Z. Gonzales Memorial National High School.

Specifically, it answered the following questions:

1. What is the mean score performance of the experimental and comparison group on their pretest, posttest, and formative test?
2. Is there a significant difference between the formative test mean score of the experimental and comparison group??
3. Is there a significant difference between the posttest mean score of the experimental and comparison group?
4. Is there a significant difference between the pretest and post-test mean scores of the experimental and comparison group?

MATERIALS AND METHODS

This study used the quasi-experimental research design. In this design at least one independent variable was manipulated and treated, the other relevant variables were controlled, and the effect on one or more dependent variables was carefully observed. A focus observation should be done to gather reliable and valid results. Bautista (1998) added that experimental research design is best to show causal relationships between variables underplay.

To quantify the validity and acceptability of the developed instructional videos in teaching Technology and Livelihood Education for junior high school streamline for Hybrid learning, quantitative research design was used.

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In this study, the numerical data came from the pretest and posttest scores as they used the instructional videos in teaching Technology and Livelihood Education for junior high school streamline for Hybrid learning

A Match-only pretest-posttest control group design was employed in this research. This study had different groups, one with a pretest and a posttest, while the other two sets of observations (one representing the pretest and the other group experiments) were not assigned to the groups at random.

The participants of the study were Grade 9 TLE- Food Processing students in Jacobo Z. Gonzales Memorial National High School, Division of Binan City. The selection of the participants was based on the result of the pretest to be conducted with the group of 60 participants which belong to one section. The participants were grouped into control and experimental groups.

For validation of the developed instructional videos in teaching Technology and Livelihood Education for high school streamline for blended learning, the help of the experts were highly needed. The population for this study was composed of the Head and Master teachers of TLE, including the teachers of TLE in the High School department and 6 Information and Computer Technology (ICT) Teachers in Jacobo Z. Gonzales Memorial National High School.

In administering the pretest and posttest, Grade 9 learners from Jacobo Z. Gonzales Memorial National High School served as respondents. The researcher used the purposive sampling approach, which Crossman (2018) defines as a non-probability sample chosen based on demographic characteristics and the study's goal. This was useful since it allowed researchers to rapidly identify the target sample.

For the development and validation of the instructional videos for teaching Technology and Livelihood Education, the researcher asked help from ICT experts then, a standardized survey questionnaire for the expert's evaluation was used using the ISO 9126 Based Quality Model for E – Learning Systems Evaluation.

RESULTS AND DISCUSSION

Based on the data analyzed, the following findings are:

For the experimental group, the pretest mean score was 24.00 (SD=6.91) and the posttest mean score was 34.20 (SD=8.34). On the other hand, for the comparison group, the pretest mean score was 24.00 (SD=6.91) and the posttest mean score was 29.67 (SD=7.38). During the pretest, the two groups of respondents had the same mean scores while on the posttest mean scores, the experimental group had a higher mean score than the comparison group.

For formative test mean scores on performance of the two groups of respondents, the experimental group obtained 14.00 (SD=3.72), while the comparison group got a mean score of 11.40 (SD=4.47).

The experimental group had a mean score of 14.00 (SD=3.72) and the comparison group had a mean score of 11.40 (SD=4.47). It had a mean difference of 2.600 and Cohen's d of 0.632. It also showed that there was significant difference in the formative mean scores of the experimental and comparison groups (t(58) = 2.448).

In terms of posttest, the experimental group had a mean score of 34.20 (SD=8.34), while the comparison group had a mean score of 29.67 (SD=7.38) with mean difference of 2.033 and Cohen's d of 0.575. It revealed that there was a significant difference in the posttest mean scores of the experimental and comparison groups with t(58) = 2.229.

The results of the test of difference between the pretest and posttest mean scores of both the experimental and comparison groups. It showed that there was a highly significant difference in the results of pretests and posttests on both experimental and comparison groups with mean differences of 10.200 and 5.667, respectively. The computed t-value in the experimental group of 13.553 and in the comparison group of 3.248 were both interpreted as highly significant at 0.01 level of significance.

CONCLUSION

Based on the findings of the study, the conclusions were drawn:

There is no significant difference between the formative test mean scores of the experimental and comparison group was rejected since there is a significant difference between the formative test mean scores of the two groups of respondents.

There is no significant difference between the posttest mean score of the experimental and comparison group was also rejected since the mean scores of the experimental group in post-tests has a significant difference between the mean scores of the comparison group.

There is no significant difference between the pretest and posttest mean score of the experimental and comparison group was rejected since the pre-test and post-test mean scores of both groups are significantly different.

The outcome similarly shown that the utilization of Food Processing Instructional Video (Food Pro I-vid) is an effective instructional tool that can be utilized to teach TLE-Food Processing and can help in enhancing the performance of the learners

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RECOMMENDATIONS

The following recommendations are deemed appropriate based on the summary and findings of this study:

[1] Teachers may seek out opportunities to learn new teaching methods and approaches as part of their instructional talents.

[2] To help students attain higher levels of achievement, improve the teaching materials.

[3] School heads are encouraged to capacitate the faculty members through seminars, training, and internet resources that will help them address and improve their concerns about delivering the courses.

[4] The utilization of the localized instructional videos is encouraged in all grade levels and in all learning areas since it is effective in teaching and learning process.

[5] Organizing instructor seminars to encourage them to plan classes on the cognitive and emotional dimensions.

[6] A future researcher could conduct similar studies on other topics, focusing on teacher skills.

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