International Journal of Academic and Applied Research (IJAAR)
ISSN: 2643-9603
Vol. 6 Issue 10, October - 2022, Pages: 1-5

Asynchronous Video Brain Breaks to Improve Academic Performance in TLE of Grade 8 Students during New Normal

Olivia N. Crisostomo

Emiliano Tria Tirona Memorial National Integrated High School
Kawit, Cavite, Philippines
olivia.crisostomo@deped.gov.ph

Abstract: *This study investigates the effectiveness of asynchronous video brain breaks as an innovative learning strategy to improve the academic performance in TLE of among grade eight of Emiliano Tria Tirona Memorial National Integrated High School during the new normal form of education. To quantify the effectiveness of asynchronous video brain breaks as an innovative learning strategy to improve the academic performance of Grade 8 TLE students, two (2) sections in Grade 8 were chosen as participants in this study. These sections got the lowest mean scores in the diagnostic test (or pretest). Using a lottery method, one section was the Control group while the other section formed the Experimental group. The former was taught using the conventional teaching method and the video brain breaks was applied to the latter. The post-test examination was conducted after the duration of the research period and the results were compared and analyzed using t-tests to highlight any significant difference. From a safety perspective, to attain a more accurate and reliable result, the participants of both groups were chosen randomly. After completing the procedure above, test results showed a significant difference occurred between the post-test mean scores of the control group and the experimental group. Upon arriving at a significant difference between the performances of the two groups of students, those under the traditional method of teaching and those subjected to video brain breaks instruction, it is concluded that an innovative learning strategy called the Asynchronous brain Breaks is an effective way of improving the academic performance in TLE of Grade 8 students during the new normal set up of education.*

Keywords—Asynchronous, significant, control, and experimental

1. INTRODUCTION

1.1. Research Background

The Novel Coronavirus disease (COVID-19) pandemic, has already infected almost 3 million people in 148 countries resulting to more than two hundred thousand deaths worldwide and has wrecked chaos around the globe. The crisis has already transformed into an economic and labor market shock. We are only beginning to understand the economic impacts of COVID-19, but many other issues have emerged and need to be urgently addressed, like the closure of schools and its impact on learning and the burden of education on students, parents and teachers (Bhamani et al., 2020). Thus, the Department of Education (DepEd) issued the DepEd Order no. 12 series of 2020 also known as the Basic Education Learning Continuity Plan (BE-LCP) that adopted multiple learning modalities including the online learning modality, modular learning modality and blended learning modality to be used during this new normal education as an emergency measure to allow instruction amid challenging circumstances. And one of the schools that adopted the modular learning modality is the Emiliano Tria Tirona Memorial National Integrated High School.

In order to ensure continuous children's learning, a collaboration between the telecom industry, school networks at different levels and the education department is needed (UNESCO, 2020). Governments have been launching awareness campaigns on distance learning for parents, teachers, administrators and students (Chang & Yano, 2020). The implementation of an education system at the national level in response of coronavirus outbreak and schools being closed can be supplemented with a curriculum that involves parental guidance, Covid-19 related awareness and integration of technology whether in asynchronous or synchronous. This would help in improving the education systems at large and reassure learning attainment in home settings. Such programs can also yield benefits in students' autonomous learning development to get a sense of responsibility for self-growth and development (Yousafzai, 2020).

Brain breaks are mind-calming exercises. These pauses have been shown to increase our thinking skills and encourage all types of learning. Brain breaks allow for the repair of neurotransmitters and assist brain recuperation when the *amygdala* is at full capacity and has reached information overload, and the learner is unable to retain new material. Because our brains only have so many *neurotransmitters*, it's critical to give one section of the brain time to rest and recuperate while another is active and working.

This prevents all parts of the brain from becoming depleted, allowing information to be kept and maintained. Brain breaks are deliberate learning shifts that allow the brain to rejuvenate itself. It's a chance to reestablish the flow of traffic, or in this case, information, in order to reach its ultimate destination.

One of the strategies proposed by UNESCO (2020) is the use of digital technology using asynchronous or synchronous. One method of developing stronger connections between faculty and students is by having individual faculty develop personal video content that can be integrated into

asynchronous online courses. Development of improved video techniques in online learning platforms and the cultural acceptance of videos in everyday life make the use of instructor-generated video content within online education an important area of study. Given the growth of online education, the demonstrated relationship between student engagement and success, and the increasing ease of use and familiarity of both students and faculty with video content, assessing the influence of video content on student related success metrics is an important area of study (Draus, Curran and Trempus, 2014).

For this reason, it is crucial to study the effectiveness of asynchronous video brain breaks as an innovative learning strategy to improve the academic performance in TLE of among grade eight students of Emiliano Tria Tirona Memorial National Integrated High School during the new normal form of education to foster understanding of an educational reform effort for the benefit of the said learners.

1.2. Research Objectives

This study aimed to investigate the effectiveness of asynchronous video brain breaks as an innovative learning strategy to improve the academic performance in TLE among grade eight of Emiliano Tria Tirona Memorial National Integrated High School during the new normal form of education.

Specifically, this study sought to answer the following questions:

(1) What is the result of the pretest of the participants of the study? (2) What is the result of the post-test of the participants of the study? (3)Is there a statistically significant difference between the pretest and post-test of the participants of the study? The null hypothesis is: There was no statistically significant difference between the pretest and post-test of the participants of the study.

2. METHODOLOGIES AND RESEARCH DESIGN

This section consisted of participants and/or sources of data and information, data gathering methods, and data analysis plan.

2.1 Participants and other Sources of Data

Emiliano Tria Tirona Memorial National Integrated High School is the largest secondary school in Kawit, Cavite in terms of population. There are almost 5,000 students who are currently enrolled in this school and 24% of the population is in Grade 8.

The proponent is handling five (5) sections and two of them were chosen. The researcher employed the purposive sampling scheme by selecting two sections in grade 8. The selection is based on the result of the pretest. The independent samples t-test was utilized to test the significance of the two sections that got the lowest means. The result proved that the two groups have no significant difference. Of the groups selected, Grade 8 – Felipe was assigned as the Control group which is exposed to the conventional way of teaching while Grade 8 – del Pilar was assigned as the Experimental group which was exposed to video brain break intervention. The assignment of the sections was done by using a lottery. According to Robinson (2014), purposive sampling is an intentional selection of informants based on their ability to elucidate a specific theme, concept, or phenomenon.

The participants were sixty (60) grade eight students of the school who were identified with difficulties in understanding and mastering the competencies in TLE 8 based on the pretest. Thirty (30) students assigned as the Experimental Group and another 30 students assigned as the Control Group were chosen using a non–random or purposive sampling technique.

Purposive sampling, also known as judgmental, selective, or subjective sampling, is a form of non-probability sampling in which researchers rely on their own judgment when choosing members of the population to participate in their surveys.

2.2 Data Gathering Methods

Data were collected using a standardized test that will be adopted from TLE 8 Module. The researcher modified the said instrument to get valid and more reliable results in this study. The test consisted of 50 items for the seven competencies that assessed the participants' academic performance in TLE 8 Agriculture during the first quarter. The questions were validated by the head teacher.

The list of topics undertaken by the two groups from the start of the instruction up to the time it ended was arranged as follows:

September 20-24, 2022	Farm tools and their uses
September 27-October 1, 2022	Farm inputs
October 4-8, 2022	Perform calculations
October 11-15, 2022	Farm layout and irrigation
October 18-22, 2022	Personal Protective Equipment (PPE)
October 22, 2022	End

Participants were asked to answer the tests to identify their knowledge about the topic and academic level of performance before and after the intervention program. After administering the pretest, the teacher applied the process of integrating asynchronous video brain breaks in teaching TLE as part of the intervention program for the treatment group for the entire first grading period.

After the first quarter ended, the students were given the test again as a post-test. Each group's test results were compared and evaluated using the paired t-test after the papers were examined. The results of the pretests and posttests for the experimental group were then evaluated for any significant differences. This would demonstrate if the

International Journal of Academic and Applied Research (IJAAR)
ISSN: 2643-9603
Vol. 6 Issue 10, October - 2022, Pages: 1-5

inclusion of asynchronous video brain breaks into TLE instruction had a favorable or detrimental impact on student's performance in the topic.

2.3 Data Analysis Plan

In analyzing the answers of the participants of the action research, different statistical analyses, and treatments of analyzing the data were used such as descriptive analysis and inferential analysis. Below summarizes the statistical treatments that utilized each research question posed for the study:

To answer the research question about the result of the pretest of the participants of the study, descriptive analysis using average and standard deviation were used.

To answer the research question about the result of the post-test of the participants of the study, descriptive analysis using average and standard deviation were used.

To answer the research question if there is a statistically significant difference in the pre-test and post-test of the participants of the study, a test of significance for the difference using Paired samples t-test and Independent samples t-test were applied.

3. RESULT AND DISCUSSION

The researcher compared the mean performance of the students in terms of their pretest to prove that the selected groups were on the same level. To strengthen the result, an independent samples t-test was also applied. Table 1 presents the result of the then pretest for both groups.

Table 1
Pretest Results of Control and Experimental Groups

Scores	Control Group		Experimental Group		Descriptive Ratings (Performers)
	Frequency	Percentage	Frequency	Percentage	
Less than 11	0	0%	0	0%	*Low*
11 – 20	17	57%	20	67%	*Fair*
21 – 30	13	43%	10	33%	*Average*
31 – 40	0	0%	0	0%	*Above Average*
More than 40	0	0%	0	0%	*High*
Total	**30**	**100%**	**30**	**100%**	
Mean	**19.27**		**18.83**		
Description	*Fair Performers*		*Fair Performers*		

As shown in Table 1, 17 or 57% of the control group and 20 or 67% of the experimental group obtained scores within the range 11 to 20, described as Fair performers, and 13 or 43% of the control group and 10 or 33% of the experimental group obtained scores within the range 21 to 30, described as Average performers.

It also presents that the mean score of the control group (M = 19.27. SD = 4.09) is slightly higher than the mean score of the experimental group (M = 18.83, SD = 3.63).

An independent samples t-test was conducted to compare the pretest mean scores of the control and experimental groups. Its results are presented in Table 2.

Table 2
Comparison of Mean Pretest Scores of Control and Experimental Groups

Groups	N	Mean	*t*	df	*p*	Decision	Interpretation
Control	30	19.3	0.434	58	0.666	Do not Reject H_0	Not Significant
Experimental	30	18.8					

Table 2 summarizes the mean scores of both groups in the pretest. The computed *p*-value (p = .666), which is greater than 0.05, indicates that the null hypothesis was not rejected, implying that there was no statistically significant difference in the pretest mean scores of both groups. This revealed that the two groups exhibited almost the same level of proficiency before the researcher conducted the experiment.

The researcher held classes in separate groups. The control group was taught using the traditional method while the intervention video brain breaks were applied to the experimental group. At the end of the quarter, an assessment examination (post-test) was administered to both groups. Table 3 presents the post-test result of both groups.

Table 3
Post-test Results of Control and Experimental Groups

Scores	Control Group		Experimental Group		Descriptive Ratings (Performers)
	Frequency	Percentage	Frequency	Percentage	
Less than 11	0	0%	0	0%	*Low*
11 – 20	0	0%	0	0%	*Fair*
21 – 30	0	0%	0	0%	*Average*
31 – 40	30	100%	11	37%	*Above Average*
More than 40	0	0%	19	63%	*High*
Total	**30**	**100%**	**30**	**100%**	
Mean	**35.33**		**41.2**		
SD	**2.55**		**3.33**		
Description	*Above Average Performers*		*High Performers*		

As shown in Table 3, 30 or 100% of the control group and 11 or 37% of the experimental group obtained scores within the range 31 to 40, described as Above Average performers, and 19 or 63% of the experimental group obtained scores within the range 41 to 50, described as High performers.

It also presents that the mean score of the control group (M = 35.33. SD = 2.55) is less than the mean score of the experimental group (M = 41.20, SD = 3.33).

The proponent then compared the mean performance of the students in terms of their post-test scores using an

International Journal of Academic and Applied Research (IJAAR)
ISSN: 2643-9603
Vol. 6 Issue 10, October - 2022, Pages: 1-5

independent samples t-test. Its results are shown in the table below.

Table 4
Comparison of Mean Post-test Scores of Control and Experimental Groups

Groups	N	Mean	*t*	df	*p*	Decision	Interpretation
Control	30	35.3	-7.67	58	.000	Reject H_0	Significant
Experimental	30	41.2					

As can be gleaned from Table 4, the post-test mean score of the experimental group is higher than that of the control group. The computed *p*-value ($p < .001$), which was much less than the significance level of 0.05, indicates that the null hypothesis was rejected, thus with 58 degrees of freedom, there was a statistically significant difference in their post-test mean scores.

A paired samples t-test was established to determine whether there was a statistically significant difference in the pretest mean score and the post-test mean score of the experimental group. The results are shown below in Table 5.

Table 5
Comparison of mean scores in the pretest and post-test of the experimental group

Tests	N	Mean	*t*	df	*p*	Decision	Interpretation
Pretest	30	18.8	-24.3	29	.000	Reject H_0	Significant
Post-test	30	41.2					

As presented in Table 5, there is an increase in the mean scores of the experimental group from pretest (M = 18.8, SD = 3.63) to post-test (M = 41.2, SD = 3.33). The computed *p*-value ($p < .001$) was less than the significance level of 0.05. The decision was to reject the null hypothesis, therefore, there was a statistically significant difference in their pre-and post-test mean scores.

4. SUMMARY OF FINDINGS

The findings of the study are summarized as follows:

1. Pretest results showed that out of 30 students in the control group, 17 students were described as Fair performers, and 13 were Average performers. Twenty students out of 30 in the experimental group were fair performers and 10 were average performers (Table 1).
2. The pretest mean scores of the control group and experimental group were 19.27 with SD = 4.09, and 18.93, SD = 3.63, respectively. The student-participants were described as Fair performers.
3. The results of the post-test indicated that all or 30 students of the control group were described as Above Average performers while 11 and 19 students of the experimental group were described as Above average performers and High performers, respectively (Table 3).
4. The post-test mean score of the experimental group was higher than that of the control group (Table 4). An independent samples *t*-test indicated that there was a significant difference in the post-test mean scores of both groups as the computed *p*-value was less than $p = 0.05$ (Table 6).

5. CONCLUSION

1. Between the pretest and the posttest, both groups' mean scores increased.
2. The post-test mean scores of students who received Video brain breaks intervention and those who received regular instruction differed significantly.
3. Video brain breaks education was found to be beneficial.

6. RECOMMENDATIONS/REFLECTION

Considering the effectiveness of Video brain breaks instruction in teaching, it was recommended that:

1. Teachers should use this approach to help the students learn the subject or in any subject.
2. The school may use Video brain breaks instruction in delivering the lessons as a method of teaching.
3. Due to the limited time allotted in undertaking the experiment, it was recommended that this study be replicated, and other lessons not covered by this study should be considered.

7. PROPOSED INNOVATION, INTERVENTION, AND STRATEGY

The development of instructor-generated content or video brain breaks, in general, is not new and has been a driving part of online education for years (Sherer & Shea, 2011). However, this study was done at an institution that populated its courses with non-instructor-generated content (i.e., preloaded PowerPoint slides, discussion questions, and assignments), and instructor input into assignments, discussions, and assessments was quite limited. The video brain breaks content included:

- a video welcome message at the beginning of the lesson;
- weekly video lectures from the teacher to augment the usual school-wide PowerPoint with audio;
- at least two video discussion postings per discussion question each week;

- video instructions on expectations for written assignment; and
- video messages, generally two per week, to discuss relevant topics for the week.

To maximize the use of video brain breaks under the modular learning modality, the teacher-researcher decided to use the asynchronous form of using video brain breaks through the use of flash drives, television, tablets, and cellphone which the students were used during the implementation of the intervention. To further enhance the students' performance, all applicable strategies, activities, and procedures were included in the Weekly Home Learning Plan of the students.

ACKNOWLEDGMENT

The researcher would like to express their sincerest gratitude to the following persons whose efforts greatly helped the success of this study: Mrs. Belinda C. Loyola and Mr. Servando R. Romanes for letting the researchers administer the questionnaires to the Grade 8 TLE students of ETTMNIHS. Mr. Marvin Jay I. Maming, who pushed the researcher to conduct this study and for the ideas he has shared that significantly contributed to this research. Grade 8 TLE students of ETTMNIHS who patiently and wholeheartedly answered the questionnaires given to them. God, the source of all knowledge, for without Him this research will not be realized.

REFERENCE

[1] Bhamani, S. et al. (2020). Home Learning in Times ofCOVID: Experiences of Parents. Journal of Education and Educational Development 7(1), 09-26, 2020. DOI: http://dx.doi.org/10.22555/joeed.v7i1.3260

[2] Chang, G. C., & Yano, S. (2020). How are countries addressing the Covid-19 challenges in education? A snapshot of policy measures. Retrieved from World Education Blog:https://gemreportunesco.wordpress.com/2020/03/24/how-are-countries addressing-the-covid-19-challenges-in-education-a-snapshot-of-policy-measures/

[3] DepEd. (2020). Official Statement Department of Education. Retrieved from https://www.deped.gov.ph/2020/05/06/official-statement-2

[4] Sherer, P., & Shea, T. (2011). Using online video to support student learning and engagement. College Teaching, 59(2), 56-59. doi:10.1080/87567555.2010.511313

[5] UNESCO. (2020). COVID-19 Educational disruption and response. Retrieved from https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures

[6] Yousafzai, A. (2020). Low-cost private schools may not be able to survive the COVID-19 crisis. Retrieved from https://www.thenews.com.pk/print/637486-low-cost-private -schools-may-not-be-able-to-survive-covid-19-crisis