The Effect of Interactive Learning Application on Students Performance in Analyzing World War I Events

Lloyd Ryan T. Narag
Cagayan National High School
lloydryan.narag@deped.gov.ph

ABSTRACT: Borderless 21st century learning means helping the learners meet higher performance in-class and national examinations through the use of interactive ICT inspired teaching aids. With these considerations, the teacher-researcher created the Interactive Learning Application as a means of helping students improve their performance in Araling Panlipunan. The students of Grade 8-Copper and Grade 8-Antimony, A.Y. 2019-2020, stood as the respondents of the study. The groups were randomly selected to systematically assign them as the Control Group and Experimental Group. The results revealed that in the pretest, scores of the control group were more consistent compared to the experimental group. However, after the use of the intervention, the posttest scores of the experimental group appeared to be more consistent. Moreover, in the pretest mean scores of both groups showed no significant difference; this suggests that both groups are of the same level in terms of their performance in analyzing World War I events. Finally, the posttest scores of both groups showed significant difference.

It can be deduced from the study that the use of the Interactive Learning Application is effective in improving students' performance in examining the events of World War I. Further, it is recommended for use in Araling Panlipunan classes with the same topic.

Keywords: Offline Learning Application, Chronology of Events

I.   INTRODUCTION

Recognizing the need for both teachers and learners to be able to adapt in and embrace the changes in their environment and instilling the 21st century competencies in learners are two inseparable considerations in the educational arena.

The study of Talosa, Javier and Dirain, 2021 revealed that self-regulated learning and digital or technological self-efficacy are the two themes found as a learning opportunity with the current learning modality. This fact points out to the new normal idea that learning is no longer limited to the use of physical textbooks or paper and pen; it is borderless. Further, this implies that since there have been a number of mushrooming technological advancements, educators and students should take advantage of them as understanding concepts and applying them to create a product or service is not bounded by inadequate print resources.

In the pursuit of the K to 12 Basic Education Program, Republic Act No. 10533 prescribes the learner-centered approach in teaching that puts emphasis on the needs and interests of the students; thus, acknowledging their changing learning necessities is equally important. Moreover, the Policy Guidelines on the K to 12 Basic Education Program enclosed in DepEd Order 21,s. 2019, reiterates one of the features of the curriculum that integrates Information and Communications Technology (ICT) competencies to equip learners with skills that allow them to keep pace with technological evolution. In addition, that teaching approaches have to be collaborative and contextualized is regarded essential in this context.

The proponent's Grade 8 *Araling Panlipunan* classroom is a palpable indicator of considerable ICT demand; although textbooks and other print materials have been provided, a number of learning competencies are not satisfactorily met. This assertion is strongly supported by the result of the National Achievement Test (NAT) last academic year and even in the previous years (Rappler, 2013), where Social Studies attained a low mean, further suggesting that there is a problem in the teaching and learning of this subject area. Moreover, the consolidated item analysis created by all Grade 8 teachers, which further created the Mastery Level Card, is a tangible evidence of the existing concern of learning competencies that have surely contributed to the unsatisfactory result of NAT. One of these is the students' ability to examine events that took place during the World War I which has 49.13% mastery level qualifying it as a Least Mastered Competency; with these data, education reform has to be undertaken and teachers have to immediately address this matter by presenting an effective solution. In addition, based on the proponent's observations, students do not show much interest in this topic probably because there are too many events and concepts in print materials that they fail to appreciate the significance of each in the history of the world.

As a teacher, addressing the competencies and needs of the learners is a crucial concern, which necessitates immediate action. Furthermore, to attain a higher NAT percentage, all the components of the Social Studies area should be addressed indispensably; that include complete examination of historical events, especially World War I. The study primarily aimed to suggest solution to the Grade 8 students' problem on analyzing World War I events through the use of Interactive Learning Application, a 21st century learning-inspired intervention that encompasses focus on collaborative learning and incorporation of ICT skills.

This action research aimed to improve the performance of Grade 8 students in analyzing World War I events through the Interactive Learning Application. Specifically, it sought to answer the following questions:
1. What are the mean pretest scores and mean posttest scores of the students in each of the two groups?
2. Is there a significant difference in the mean pretest scores of the two groups?
3. Is there a significant difference in the mean posttest scores of the two groups?

II.   METHODS

Interactive Learning Application is anchored on the principles of Collaborative Learning and Information and Communications Technology (ICT) integration, which are both prescriptions in the K to 12 Curriculum (DepEd Order 21, s. 2019). Further, the idea sprung from the pilot 21st Century Learning Environment Model (CLEM) Classroom in Inosloban-Marawoy National High School in Batangas, in 2018, which was filled with laptops, projector, smartboard, and other technology-inspired materials. Although the proposed intervention does not call for all these equipment, the plan is to create a learning environment close to the CLEM classroom.

Interactive Learning Application will be used in small groups of Grade 8 students for three sessions to facilitate understanding of the numerous events that took place during the World War I. This learning tool, which is organized according to *Mga Pangyayari*, *Mga Alyansa*, *Mga Kilalang Tauhan*, and *Ang Dokumentaryo*, is created through Language Vb.net, a multi paradigm, object-oriented programming language that creates communities of visual studio. The offline

intervention is saved in a computer; in its implementation, it will be saved in students' laptops that will be utilized during classroom discussion. In the implementation of the intervention, the teacher-researcher will arrange or prepare the necessary gadgets/materials, such as laptop before each session begins.

Since the intervention has four different components, the sessions will be divided accordingly to ensure its comprehensive use. On the first session, the teacher and students will focus on *Mga Pangyayari*. Second day will be on *Mga Alyansa,* while the last session will be allotted for *Mga Kilalang Tauhan* and *Ang Dokumentaryo*. Once the button for each specific topic is clicked, information about it will be flashed on the screen; students discuss collaboratively as a group. With the intervention on their hands, students are free to navigate the timeline at their own pace and intelligently share with one another its content.

On the part of the teacher, to monitor students' understanding and interaction, he will frequently ask questions about its content. Moreover, the teacher will constantly inspect learners' participation and involvement in groups and will check knowledge grasp my posing questions before the class ends. Lastly, to ensure that all students have a full grasp of the lesson, the content of Interactive Learning Application will be distributed to the students as a handout.

This study involved Grade 8 Antimony and Copper students of Cagayan National High School. Antimony Class is composed of 11 males and 24 females; Copper on the other hand has 7 males and 27 females. Other sources of data include the results of the consolidated Item Analysis last school year 2018-2019 and two sets of questionnaire, which yielded the pretest and posttest scores.

Two sets of test question whose items are parallel was created. The first test was used to generate the pretest scores of the respondents while the second set was utilized for the posttest scores. Grade 8 Antimony was taken as the experimental group, while Grade 8 Copper served as the control group; both were selected in random. Toss coin was used to decide on the group functions.

The items that were used in the test materials are eclectically made because they were taken from various references such as textbooks, standardized tests, and online.

After securing the necessary approval from the school authorities, School Research Committee, and parents/guardian, the research proposal was implemented.

The data gathering period or the administration pretest, implementation of the intervention and posttest ran for five sessions/meetings/days. On the first day, the leaners took the pretest. Scores were recorded and tabulated. Then, the intervention was implemented for three days. Since the study did not cover an experimental and control group, the entire class was used for data collection.

The last day was used to administer the posttest to the learners. After tabulating and analyzing the scores and answers, results, discussion and reflection were written to complete the study.

To determine if Interactive Learning Application is effective in improving the competency of Grade 8 learners in examining World War I events, the following statistical treatment was used:
- Mean and Standard Deviation to analyze the mean pretest and mean posttest scores of the learners in each of the two groups;

- Independent Samples T-test to determine if there is a significant difference between the mean pretest and mean posttest scores of the learners;
- Paired Samples T-test to identify if there is a significant increase in the mean pretest score and mean posttest score of the each of the groups;
- Cohen'd d to analyze the effect of the Interactive Learning Application as an intervention in improving performance on examining World War I events, which will be interpreted by following this scale:

| Cohen's d Score	Qualitative Description
.20 and below	Small Effect
.21 - .79	Moderate Effect
.80 and above	Large Effect

III.   RESULTS

Figure 1 – Mean Pretest Scores of Grade 8 Copper (Control Group) and Grade 8 Antimony (Experimental Group)
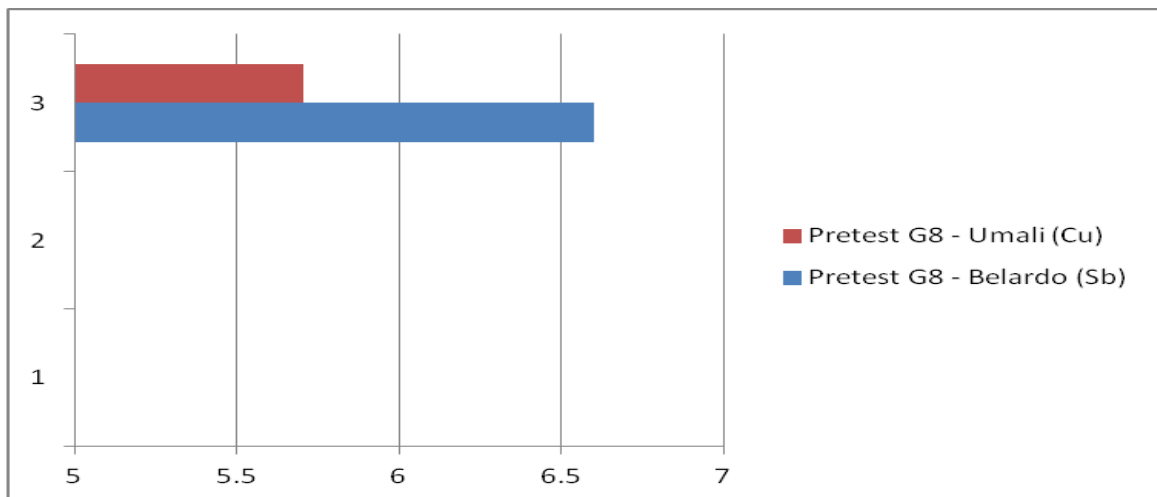
The graph shows that the mean of the control group is 5.71 with a standard deviation of 2.30; on the other hand, the experimental group has a mean of is 6.60 with a standard deviation of 1.83. The data further suggest that the experimental group has a more scattered set of pretest scores compared to the control group as manifested by a greater standard deviation.

Figure 2 – Mean Posttest Scores of Grade 8 Copper (Control Group) and Grade 8 Antimony (Experimental Group)
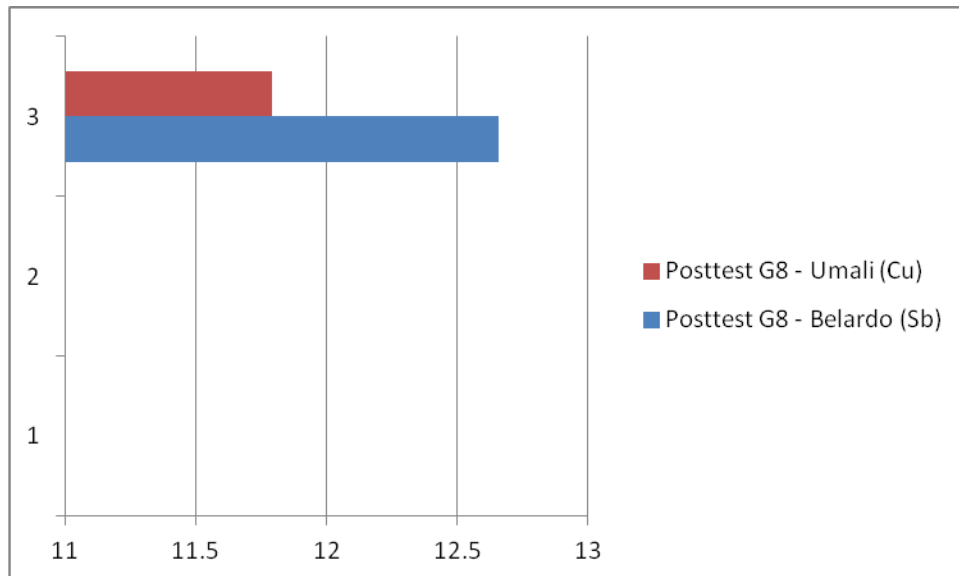
The graph reveals that the mean of the control group is 11.79 with a standard deviation of 1.77; on the other hand, the experimental group has a mean of is 12.66 with a standard deviation of 1.68. The data above imply that the experimental group has a more consistent set of posttest scores than the control group; this is explained by the lesser standard deviation. Comparing the two sets of scores, there was a shift from being more scattered to more consistent in the experimental group.

IV. DISCUSSION

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pretest	Equal variances assumed	1.430	.236	1.762	67	.083	.89412	.50737	-.11860	1.90684

It can be gleaned in the table that there is no significant difference in the pretest mean scores of the control and experimental groups. The data indicate that sections Copper (control) and Antimony (experimental) have equal level of prior understanding of the events of World War I.

		Levene's Test for Equality of Variances		t-test for Equality of means						95% Confidence Interval of the Difference	
Independent Samples Test											
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
Posttest	Equal variances assumed	.002	.964	2.077	67	.042	.86303	.41546		.03377	1.69228

According to the results of the posttest, there is a statistically significant difference between the scores of the control and experimental groups. The statistics also indicate that the use of Interactive Learning Applications is a more successful teaching technique when it comes to studying World War I events than just enabling students to learn without the use of any ICT-inspired materials or resources. As a result, using instructional materials is an essential part of instilling the importance of teaching methodology in students, which will greatly assist teachers in their daily feeding of knowledge to their students.

V.   CONCLUSION

One of the most important objectives of this research is to improve the performance of G8 students in evaluating World War I events by utilizing the Interactive Learning Application. According to the findings of the research, the use of the Interactive Learning Application is a successful tool in teaching World War I, and as a result, students demonstrated learning through the use of an ICT-inspired material in their classes.

REFERRENCES

[1] Abana, A (2021). A Scrutiny of K-12 Strands and the Learning Program Vis-à-vis its Academic Performance. 58 (2) : 7977-7984

[2] Antonio, A. (2021). Syntactical Scrutiny: Inaccuracies in the Lesson Planning of Non- Language Pre Service Teachers

[3] BALOG, P., & Gonzales, E. . (2021). From Linguistic Landscapes to Teaching Resources: A Case of Some Rural Areas in the Province of Quezon. *International Journal of Arts, Sciences and Education*, *1*(2), 23–44

[4] Bangayan-Manera, A. (2019). Textual Analysis of School Graffiti. The Asian EFL Journal. 21 (2.3), 273-285.

[5] Bangayan-Manera, A. (2019). Doodle: Towards A Hermeneutical Appreciation in Jacques Derrida's Deconstruction. The Asian EFL Journal. 24 (4.2), 291-204.

[6] Bangayan- Manera, A. (2020). Writing Without Permission: A Case study on Skinner's Analogy through Vandalism. International Journal of Psychosocial Rehabilitation. 24 (08), 571-578

[7] Bustamante, E.D. & Mercado, M.M. (2014). *Sulyap sa kasaysayan ng daigdig.* Quezon City, Philippines: St. Bernadette Publishing House Corporation

[8] Department of Education. (2016). *Araling panlipunan kasaysayan ng daigdig.* Quezon City, Philippines: Author.

[9] Department of Education. *Education chief underscores importance of 21st century learning, expresses gratitude to partners.* (2018). Retrieved from https://www.deped.gov.ph/2018/09/03/education-chief-underscores-importance-of-21st-century-learning-expresses-gratitude-to-partners/

[10] Department of Education Order No. 21, Series of 2019. *Policy guidelines on the K to 12 curriculum.* Retrieved from https://www.deped.gov.ph/wp-content/uploads/2019/08/DO_s2019_021.pdf

[11] Malana, M.L. (2020) Comparative Analysis in the Performance of Students in Chemistry. International Journal of Psychosocial Rehabilitation. 24 (6)

[12] Malana, M.L. (2020). Attitude and Level of Performance of Students in Chemistry. International Journal of Psychosocial Rehabilitation. 24 (8)10148-10154

[13] Rappler. (2013). *Low NAT scores may worsen under K to 12.* Retrieved from https://www.rappler.com/nation/24205-low-nat-scores-may-worsen-under-k-12

[14] TAMANU, R. (2021). RECORDED TEACHER MODEL VIDEO LESSON IN DEVELOPING THE LETTER SOUND RECOGNITION SKILL OF KINDERGARTEN LEARNERS. *International Journal of Arts, Sciences and Education*, *2*(1), 279–285.

[15] Talosa, A. D., Javier, B. S., & Dirain, E. L. (2021). The flexible-learning journey: phenomenological investigation of self-efficacy influencing factors among higher education students. Linguistics and Culture Review, 5(S3), 422-434. https://doi.org/10.21744/lingcure.v5nS3.1590