

ONLINE QUEST GAME AS A TOOL FOR ENHANCING LEARNING IN RESEARCH

Ma. Sharmaine JABONERO
ORCID: 0000-0002-2968-3672
Department of Education, PHILIPPINES

ABSTRACT

Several studies show that challenges occur in the online distance learning modality. Thus, it is a must for educators to adapt and explore different teaching strategies and develop interventions to cope up with the difficulties. The primary purpose of this study was to determine if an online quest game can enhance learning in an online research class. Thirty (30) students were divided into control and experimental group. The latter group was exposed to the intervention, a quest game learning approach using Classcraft, an online platform. Pre-test and post-test scores were collected for data analysis. Results indicated that students exposed to the online quest game gained better scores than those who were not. This research provided evidence that the use of online quest games could support and increase the research learning outcome. Thus, the using quest games in online classes is an effective tool for enhancing students' learning.

Keywords: Gamification, Research, Quest Game, Online Class

INTRODUCTION

The significance of research cannot be discounted and is widely acknowledged worldwide. Its excessive contribution to education, economics, medicine, psychology, and almost all facets of life is undeniable. Research activity is considered one of the high-impact educational practices in that the vital skills and attitudes of lifelong learners can be cultivated through inquiry (Imafuku, 2015). However, research is also dubbed as a complex, rigorous, and exhausting task specially by students.

Several strategies to enhance interest, motivation, and learning in the research were already done including technology. In an era where the use of technology in almost all facets of life is at its peak, educators have been exploring varied and innovative strategies to increase student performance through integrating technology in the teaching and learning process.

The importance of technology was further accentuated with the coming of the COVID-19 pandemic. With the global shut down of most educational institutions, the Department of Education (DepEd) has addressed the challenges in basic education for the school year 2020-2021 onwards through its Basic Education Learning Continuity Plan (BE-LCP) under DepEd Order No. 012, s. 2020. One of the learning modalities suggested by the Department is the use of Online Distance Learning. However, several studies showed that a couple of challenges occur with online learning. Rotas and Cahapay (2020) revealed the following categories of difficulties in remote learning: unstable internet connectivity; inadequate learning resources; electric power interruptions; vague learning contents; overloaded lesson activities; limited teacher scaffolds; poor peer communication; conflict with home responsibilities; poor learning environment; related financial problems; physical health compromises; and mental health struggles.

In this premise, the researcher aimed to determine if an online quest game will effectively enhance learning in the Research subject of Grade 12 Senior High School students in a public school in the Philippines for SY 2021-2022.

LITERATURE REVIEW

The sudden change of learning modalities brought by the Corona-Virus 19 greatly impacts the quality of the learning experience and students' mental health (Barot, et al 2021). At the pandemic's peak, 45 countries in Europe and Central Asia closed their schools, affecting 185 million students. Given the abruptness of the situation, teachers and administrations were unprepared for this transition and were forced to build emergency remote learning systems (Worldbank, 2021).

The adjustments done in the educational system affected learners personally and psychologically. As cited by Embudo (2021), based on the study by Psychosocial Support and Children's Rights Resource Center (PSTCRRC) commissioned by Save the Children Philippines, 33% of the student-respondents do not perceive the home as a conducive environment for learning compared to their schools. According to research, many Filipino children struggled to study at home during the COVID-19 pandemic due to lack of motivation as well as social media and gaming distractions. Hence, if undergoing online classes, teachers should find ways to let students be more engaged and interested in learning the lessons. In a study conducted by Belgica, et.al (2020), personal and psychological barriers are some of the challenges pupils encounter during online classes.

Game-based learning and gamification is a trend that has been implemented in many settings, including workplace training, education, and social media. Gamification of education is a strategy for increasing engagement by incorporating game elements into an educational environment (Dichev and Dicheva 2017). The goal is to generate levels of involvement equal to what games can usually produce (Fardo 2014). The gamification of education can enhance students' engagement levels, similar to what games can do, to improve their particular skills and optimize their learning (Smiderle, et.al.2020). Bohyun Kim (2013) suggests that "gamification can add an extra level of motivation and incentive to many higher education activities." With new applications and technologies being developed, incorporating game-based learning has become much easier. Rigo et.al (2020) stressed that gamification of education can enhance students' engagement levels similar to what games can do, to improve their particular skills and optimize their learning. In their study entitled. "The impact of gamification on students' students' learning, engagement and behavior based on their personality traits". They found out that gamification affected users in distinct ways based on their personality traits. Their results indicate that gamification's effect depends on users' specific characteristics.

Game-based learning, on the other hand, involves designing learning activities so that game characteristics and principles are within the learning activities. Game-based learning allows educators to incorporate active learning into their instruction sessions, promote students' interest and engagement, and provide immediate feedback on performance. There is also a significant amount of research that suggests that game-based learning can increase student learning.

Escamez and Tapia (2021) reviewed the use of gamification-based teaching during the pandemic lockdown through a search in Scopus, PsycINFO, ERIC, and Semantic Scholar databases in their study "Gamification as Online Teaching Strategy During COVID-19: A Mini-Review". The results showed that, in general, students reported that gamification was innovative, engaging, and an efficient strategy for delivering curricula material; moreover, it was perceived as a fun activity. Some students reported that gamified videoconferences aided in connecting with their classmates during isolation time, providing adequate social support. Games also allow players to develop skills incrementally through practice and challenge players to push themselves without feeling like the tasks are insurmountable. Educators can leverage these attributes by incorporating game-based learning in the in-person and online classroom to create more compelling learning experiences.

In general, according to several studies, students reported that using games was innovative, engaging, and efficient to deliver curricula material; moreover, it was perceived as a fun activity (Escamiz & Tapia, 2021).

METHODOLOGY

Research Design

The approach to the study is quantitative and is employed to give complete description of the situation, interpret several cases to gain new knowledge, develop concepts and identify other areas of concern..

To determine the effect of quest games in online classes, the experimental research design was used. Pre-test and post-test scores were utilized to collect data.

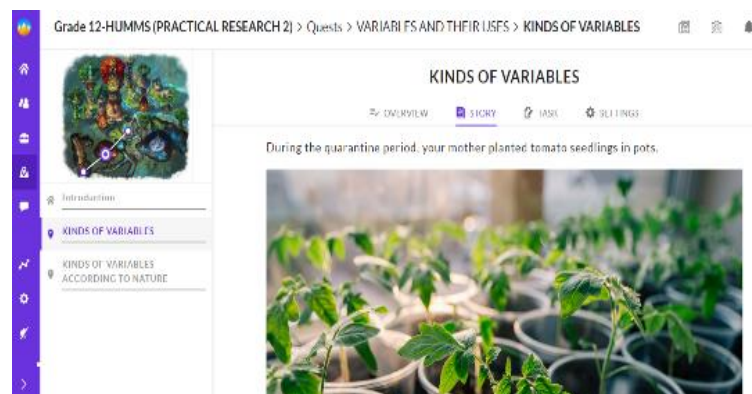
Data Collecting Tools

This study had two groups: the control and the experimental groups. A teacher-made pre-test was given to both groups prior to the implementation.

The experimental group was exposed to online quest game-based learning using the Classcraft online platform and was exposed to the intervention for a week. After which, a teacher-made post-test was given to them. The following pictures show a general view of the intervention:



Picture 1. The Quest: A series of tasks and games to be performed by the students in order to arrive with the expected learning outcomes



Picture 2. The "story" part of each task. Each task is accompanied with a story aiming to enhance students' interest and motivation.

The researcher compared the mean of the pre-test and post-test to determine if there was a significant difference in the students' means. Pre-test- Post-test design is the preparation method to compare participant groups and measure the degree of change occurring due to treatment or intervention (Shuttleworth, 2009).

Sampling or Study Group

The respondents of this study are Grade 12 learners in online classes in a public school in the Philippines. Total enumeration sampling was used.

One class was exposed to Gamified online classroom while the other class underwent the usual online classroom setting. The respondents signed a consent document and were fully aware of the purpose and usage of the research paper.

Data Analysis

Since the researcher delved into an experimental design using pre-test and post-test scores, the researcher utilized descriptive statistical tools such as frequency count, percentage, mean and standard deviation, and inferential statistical tools such as t-test for two dependent samples and t-test for two independent samples. T-test was used to determine the significant difference between the two groups' pre-test and post-test scores.

Research Procedures

Before the implementation of the study, the researcher seeks permission from the School Head and the Public Schools District Supervisor. After this, a consent from the participants and their parents were asked.

The research adopted the Solution Strategy Flowchart to conduct the study following a strict implementation of its process.

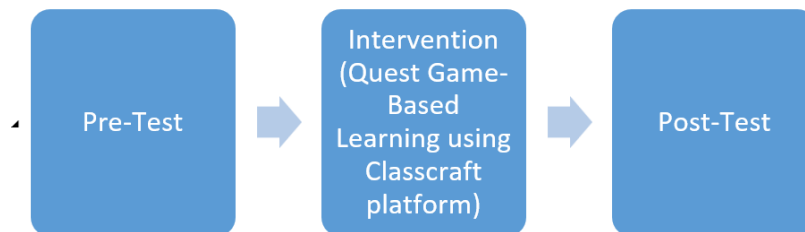


Figure 1. Solution Strategy Flowchart

The procedure for data collection is shown in Figure 3. An initial assessment through a pre-test was delivered to the 60 student respondents using Google Form. The responses were then tabulated and analyzed using statistical treatments. For one (1) week, the implementation of Quest Game-Based Learning using the Classcraft online platform was conducted for the experimental group.

After the intervention, a post-test was delivered to determine the gain in the student's mean scores, and the significant difference in the mean scores were computed and interpreted

FINDINGS AND DISCUSSIONS

After all necessary data were gathered, the researcher analyzed and compared the pretest and post-test of the two groups and identified if there is a significant increase in scores from the intervention.

The following tables furnish the data on the Pre-Test and Post-Test performance of the Control and Experimental groups and the significance of difference between their scores

Table-1. Comparison of the Experimental and Control Group's Pre Pre-Test Results

Group	Mean	SD	Mean Difference	p-value	Interpretation
CG	6.93	1.66	0.13	0.816	Not Significant
EG	7.06	1.44			

Legend: CG-Control Group; EG-Experimental Group

Based on the analysis, it can be revealed that the students from the control group got a mean score of 6.93 in their pre-test while the students from the experimental group got a mean of 7.06. A p-value of 0.816 implies no significant difference between the students' performance in their pre-test scores. Pre-test scores between experimental and control groups are not significant which means the two groups are identical at the start of the evaluation.

Table 2. Comparison of the Experimental and Control Group's Post-Test Results

Group	Mean	SD	Mean Difference	p-value	Interpretation
CG	14.80	2.3	2.67	0.001	Significant
EG	16.86	2.05			

Legend: CG-Control Group; EG-Experimental Group

On the result of their post-tests the students from the control group got a mean of 14.80 while the experimental group got a mean score of 16.86. The mean difference between the scores of the two groups is 2.67. The p-value .001 implies that there is a significant difference between the student's posttest scores.

Table 3. Comparison of the Control Group's Pre-Test and Post-Test Scores

Group	Test	Mean Score	t	p-value	Interpretation
CG	Pre-Test Scores	6.93	-17.81	.000	Significant
	Post-Test Scores	14.2			
EG	Pre-Test Scores	7.06	-19	.000	Significant
	Post-Test Scores	16.86			

Based on analysis results, the post -test mean score of the control group 14.2, is significantly higher than the pre-test mean score 6.93, $t=-17.81$, $df=14$, $p=.000$.

Also, the post-test mean score of the experimental group, 16.86, is significantly higher than the pre-test mean score, 7.06, $t=-19$, $df=14$, $p=.000$. These results show the use of the online quest game have significantly improved students learning. As cited by Yilmaz, Saran, and Connor (2014), Howard (2018) defines a quest from a goal-oriented view where a quest is defined as a value-seeking activity. Their

study also revealed that argued that a questing structure was highly educational and is useful to improve the educative process.

CONCLUSION AND SUGGESTIONS

This study aimed to determine the effectiveness of an online quest game as a tool in enhancing learning in students' research classes. From the quantitative findings, it can be deduced that online quest game-based learning can enhance students' cognitive learning. This research provided evidence that the use of educational games could support and increase the research subject learning outcomes and it aligns to with the results of the study of Lai, CH., Lee, TP., Jong, BS., Hsia, YT. (2012) where results showed that adding game elements in online classes can increase the level of attraction of courses to students fulfilling the purpose of elevating learning.

This study acknowledges its limitation of being conducted with a small sample and a small duration of span of time. Hence, for future researchers, the intervention can be done with larger samples and more studies need to be conducted that take place over a longer period to determine if the results change over time and the causes if they do. Future researchers may also explore other online game-based platforms and apply it in other learning areas

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BIODATA and CONTACT ADDRESSES of the AUTHOR



Ma. Sharmaine S. Jabonero is a Senior High School Teacher at Guinsorongan National High School in the Philippines. She graduated with her Master's in Education majoring in Physics at Samar State University and is currently studying Doctor of Philosophy major in Educational Management in the same institution.

She is inclined into journalism and research and is working on her thesis about School-Based-Management in Public Schools.

Ma. Sharmaine S. Jabonero
Catbalogan City, Samar, Philippines
09634971366
masharmine.solis@deped.gov.ph