The Effectiveness of E-Learning Method in Improving Student's Achievement in Entrepreneurship

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Abstract: *The major problem of this study was to assess the effectiveness of e-learning method in improving student's achievement in Entrepreneurship of the senior high school learners in the public high school. There are 64 total respondents of the study under Grade 12 students. The study made use of the Pretest-Posttest Experimental Design in which comparison groups was employed. The implementation of determining what group would be control or experimental is by the matched pair technique with random assignment was used in equating the groups IQ and GPA. The data were presented using tables and the results of the study were tabulated and processed using Statistical Packages for Social Sciences (SPPS). The results of the study revealed that, there is no significant differences exist in the Intelligent Quotient (IQ) of the experimental and control groups was accepted. The members of the experimental and control groups were similar in terms of their GPA. However, respondents from experimental group gained better learning through the use of e-learning tool. There was no significant differences exist in the pretest performances between the experimental and control group was accepted. Respondents' from both groups showed more or less equivalent scores in terms of their pretest performance. There was no significant difference exists in the posttest performances of the experimental and control group was rejected. Comparing the posttest results, data suggests that the use of application is more effective in improving the performance of students in entrepreneurship subject. E-learning helped enhance the performance of Senior High School students in Entrepreneur subject. This tool could lead to higher learning interest to student. It is time efficient and offers variety in learning process.*

Keywords—E-Learning Method, Student's Achievement , Entrepreneurship, Experimental Design

1. INTRODUCTION

In this present time, technology plays a vital role in the teaching – learning process. The integration of Information and Communications Technology (ICT) in teaching the Senior High School students, especially when it comes to teaching Entrepreneurship, has been a trend in educating the 21st Century Learners. E-learning systems have witnessed a usage and research increase in the past decade [1].

An author stipulated that E-learning has been raised as a potential solution to many program which find it difficult to meet the expanded requirements for learner competence in multiple modalities. E- Learning is an educational tool which made use of internet, network, or standalone computer. It is essentially the network-enabled transfer of skills and knowledge using electronic applications and digital collaboration [2].

The world is facing a crisis today as Covid 19 pandemic hit most countries, including Philippines. Given the present situation, the people are forced to adapt to the "new normal". The application of E-learning is relevant and timely. It lessens the danger of face-to-face interaction since the virus easily spreads out through direct contact with other people. Since this is the digital age, in which technology is inseparable in people's lives, it is very convenient to utilize E - learning. It is primarily about the online delivery of instructional content in teaching the students. Distance learning and blended learning are the current trends.

Online classes are vital key factors nowadays to reinforce learning. Learning can push through with the aide of technology and gadgets. The rapid progression of ICT resulted to essential changes in the field of education to innovate new ways for people to learn and work together to improve the teaching and learning process. Generation Z, generation Alpha (the children of the millennials) and the generations beyond are prepared for non - traditional types of learning, such as E - learning. As they grow up, they are even fearless in using digital technology. Online learning materials are available in different ICT platforms to ensure that the teaching - learning process will push through. The presence of E- library provides over a hundred three to five - minute videos on core subjects. With these, learning is still possible in midst of a pandemic.

The respondents of the study were the Grade 12 students of Senior High School in Calumpit, Bulacan. Before the researcher conducted the study, the researcher made sure that all the students will be undergone the experiment, have their gadgets and their internet connection.

This study aims to find out the effect of E-learning in the students' achievement in the subject Entrepreneurship to the Senior High School students.
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2. RELATED WORKS

Review of studies conducted in the field of e-learning application and its impact on learning and creativity suggests that the use of this teaching method in the teaching-learning process can lead to the effectiveness of training [3].

As e-learning is definitely a growing field in the educational and training market and e-learning standard is a new emerging area, there are many challenges in implementation of undergoing technological changes and developments. The security of services, the encryption of

messages and the common taxonomies to describe services and service access points in e-learning systems environments are all in need of consideration.

A study questions the efficiency and effectivity of e-learning website selection problems. He mentioned that e-learning websites becoming an important interface for learners. The selection of a particular website directly affects the end users' performance, with the objectives and expected outcomes of e-learning being largely dependent on the quality of the teaching processes and the effectiveness of online access. Evaluation and selection of these websites has thus become a decisive issue for learners and developers [4].

The creation of e-Learning content in short 'chunks' increases potential for flexible access. 4. Timeliness: e-Learning technologies can be used to enable learners to gain access on an as-needed, where-needed basis and deliver immediate knowledge required for performance-improvement needs. 5. Relevance: Access methods and content can be customized and adapted to the learner's needs and context. 6. Accountability: Evaluation can be enhanced by electronic mechanisms for providing feedback on the performance of learners, managers and eLearning developers [5].

The used of chalk and board in teaching Entrepreneurship still prevalent in most classrooms. The good thing is, many educators are embracing the use of technology, like e-learning in educating the students. They know that E – Learning could be a powerful tool in education. Teachers can disseminate their lessons and assignments with ease, and students can work on their lessons at home. Audio and Video lessons can be delivered to students through social network and webcams. Students can attend classes in e-classrooms. Teachers can send lectures through e-mails, network applications, social media and schools can issue announcements through the same way.

According to a study, e-learning has a positive impact on academic achievements of students. There was a study at the e-learning center in Khaje Nasir Toosi University concludes found that the use of e-learning in physiology teaching-learning process improves students learning and creativity [6]. It was also initiate that learning and recollection of students who were educated to multimedia methods, is more than learning and recollection of students who were educated in the traditional method.

A study was also conducted in an undergraduate level with the use of e-learning particularly in analytic geometry to lessen the common fear of Filipino students to Mathematics. Since teen age students used to engross themselves with the use of technology specifically computers, this study maximized the capability of computers in reducing math anxiety by teaching mathematics subject using e-learning thus improving student academic performance [7].

The use of electronic technologies has led to the development of educational opportunities and helps students develop their skills. According to studies, the evidence shows that e-learning can have a profound and positive impact on

learner's involvement, positive attitudes of teachers, personalized learning, and learners' creativity.

A report showed that secondary school students who generally participate in online or e-learning achieve far better amounts compared to secondary school students who examined traditional methods. Due to emergence of advancements in educational technology, e- learning is currently gaining substantial attention in education and for this reason; several educational institutions are now pursuing application of electronic learning programs. As such, e-learning is continuously becoming well-established in a number of both private and public education institutions in the world nowadays. Most of these education institutions have become aware of the impacts related to e-learning on students' academic achievement [8].

EDMODO Application as used in E-learning Platform. According to Indiaeducation.net, In the last 20 years, the Internet has grown from being nearly non-existent into the largest, most accessible database of information ever created. It has changed the way people communicate, shop, socialize, do business and think about knowledge and learning. Much more than just a new twist on distance learning, online schooling is changing the face of traditional classrooms and making education more accessible than ever before.

Online Education or E-Learning had infinite number of ways to teach and learn outside of traditional classrooms and away from college campuses. With online education, students can turn anywhere with Internet access and electricity into a classroom. Accordingly, there were a lot of online classroom platforms like Google Classroom, Canvas, Moodle, Schoology, Sakai, Showbie, Itunes U, Edmodo and a lot more. But among of these online classroom platforms, EDMODO was the most majority of educators used [9].

According to Patrick Cauley of IT Babble.com, Edmodo is an educational website that takes the ideas of a social network and refines them and makes it appropriate for a classroom. Using Edmodo, students and teachers can reach out to one another and connect by sharing ideas, problems, and helpful tips. A teacher can assign and grade work on Edmodo; students can get help from the entire class on Edmodo. It is a safe environment. There is no bullying or inappropriate content, because the teacher can see everything that is posted on Edmodo. Also, parents can join the class to bring a level of transparency that is difficult to achieve without technology. All in all, Edmodo is a great companion to just about any class.

Asynchronous communication is used to facilitate collaboration between individuals and among groups in distance learning environments. There are many tools available today for asynchronous communication. According to the website of Edmodo, the said online platform is geared more towards educators. More specifically, teachers, students (mainly K-12) and parents would benefit from using this tool because of its collaborative nature. It allows students to practice communication skills in a controlled environment which is so important to student development. Edmodo also provides a secure environment for students to use and

develop positive social networking skills. Students can post content, collaborate with each other, and connect with their teacher(s) in meaningful ways. Using Edmodo is a great way to promote and teach online safety, digital citizenship, and online netiquette in younger students. The use of online badges is also a great motivator for student learning. I believe that creating blog entries in Edmodo can allow students to express their creativity and themselves through writing. Blog entries can challenge students to utilize higher order thinking skills, and therefore increase student engagement with the lesson.

3. STATEMENT OF THE PROBLEM

The general problem of the study was to assess the effectiveness of e-learning method in improving student's achievement in Entrepreneurship subject. Specifically, it sought to answer the following questions:

1.How did the experimental and control groups compare in terms of IQ?

2.How did the experimental and control groups compare in terms of GPA?

3.How did the members of the experimental group and control group compare in terms of pretest scores?

4.Based on post test scores, how did the program implementation affect the experimental and control groups' achievement in entrepreneurship subject?

4. METHODOLOGY

This study used the Pretest-Posttest Experimental Design in which comparison groups was employed. The subject of the study, which consisted of experimental group and control group. The implementation of determining what group would be control or experimental is by the matched pair technique with random assignment was used in equating the groups IQ and GPA. Both groups were given of pre-test.

The results were analyzed using a t-test procedure. The strategy used the method of teaching Entrepreneurship using E-learning method in the experimental group while the Traditional Method on teaching Entrepreneurship served as the control group. The control group served the purpose of determining whether or not using e-learning method are effective in teaching Entrepreneurship. The significant improvement on posttest (O2) result when compared to pretest (O1) result was the measurement of the effectiveness of the treatments given. Posttest from the experimental group and control group were analyzed.

Under the Academic Track of Senior High School, Grade 12 Students of Science, Technology, Engineering and Mathematics Strand (STEM), Technical-Vocational-Livelihood Track with specialization in Information and Communications Technology Strand (ICT), Home Economics Strand (HE) and General Academic Strand (GAS) of Senior High School in Calumpit, Bulacan of the school year 2019-2020 were the participants of this study.

There are 64 total respondents of the study. They were randomly matched and paired from the original population based on their IQ and prior knowledge in Entrepreneurship as indicated by their grade point average in Business Mathematics. The sixty-four (64) students were divided into experimental and control groups. The experimental group was exposed to "program x", the use of e-learning in teaching Entrepreneurship while the control group did not receive any treatment. Instead, they were exposed to the traditional method of teaching Entrepreneurship. Permission to conduct the study was first obtained from the Schools Division Superintendent of Bulacan and the School Principal of the school in the Municipality of Calumpit, Province of Bulacan. The experiment formally started last January 6, 2020 and ended January 31, 2020 only one teacher handled the experimental and control groups to control the teacher factor.

The Pretest-posttest is used in this study. The instrument consisted of 50 items multiple choices. The scoring is one point for every correct answer and zero points for every wrong answer. The items are made according to the Curriculum Guide of the K-12 Basic Education Curriculum, Senior High School under the Applied Track Subject in Entrepreneurship. There are two lessons under this subject which are developing a business plan and implementing a simple business. The instruments focus on the first lesson since the students are new to this subject. The questions are made according to Bloom's Taxonomy Higher Order Thinking Skills. The researcher presented the test to Competent Professor in Entrepreneurship for comments and suggestions. A table of specification on the test was made (see Appendix B. 1) and validated by senior high school teacher with master's degree and an assessor of Technical Education and Skills Development in Bookkeeping NCIII. Considering all the comments and suggestions, the research adviser approved the 50 – items questions for pre-test (see Appendix A.1). This pre-test posttest result served as the achievement test from experimental and control group.

The researcher used the same topics in the two different methods. Experimental group uses E-learning method while the control group uses the traditional method (Chalk and board method). The Experimental Group used the e-learning method by means of EDMODO application. They can download it to their mobile phones via app store or google play. The application is the medium where the researcher and the students will interact on their lessons (e.g. hand-outs, video tutorial, and modules), activity, and quizzes. And sill use the computer laboratory for their business plan. While the Control group will only use traditional chalk and board method.

5. RESULTS

Comparison Between Respondents' IQ

Table 1. Comparison Between Respondents' IQ

Statistics	Control Group	Experimental Group
N	32	32
M	91.9375	93.0938
σ	11.67832	13.69332
SEM	2.06445	2.42066
SED	3.24693	
D	18.36741	
T	.356	
Computed t=	.356	Alpha=0.05
p-value =	0.724	
Interpretation	Non-Significant	

Statistics	Control Group	Experimental Group
N	32	32
M	15.3125	16.1563
Σ	5.68778	6.98436
SEM	1.00547	1.23467
SED	1.41429	
D	8.00044	
T	.597	
Computed t=	.597	Alpha=0.05
p-value =	0.555	
Interpretation	Non-Significant	

The IQ profile revealed that the experimental group registered a mean value of 93.0938. The control group recorded a mean score of 91.9375. These resulted to a mean difference of 1.15625 and standard error of 3.24693, resulting to a computed t-value of .356 with associated p-value of 0.724. This means that the members of the two groups were more or less equivalent in terms of their IQ.

Respondents' Profile in Terms of GPA

Table 2. Respondents' Profile in Terms of GPA

Statistics	Control Group	Experimental Group
N	32	32
M	82.218	82.6875
Σ	5.85157	6.37757
SEM	1.03442	1.12741
SED	1.49797	
D	8.47381	
T	.313	
Computed t=	.313	Alpha=0.05
p-value =	0.821	
Interpretation	Non-Significant	

In comparison of the GPA, results revealed that the experimental group registered a mean value of 82.6875. The control group recorded a mean score of 82.218. These resulted to a mean difference of .46875 and standard error of 1.49797, resulting to a computed t-value of .313 with associated p-value of 0.821. This means that the members of the two groups were more or less equivalent in terms of their GPA.

Comparison Between Experimental and Control Groups' Pretest

Table 3. Comparison Between Experimental and Control Groups' Pretest

The comparison of pretest performances revealed that the experimental group registered a mean value of 15.3125. The control group recorded a mean score of 16.1563. These resulted to a mean difference of .84375 and standard error of 1.41429, resulting to a computed t-value of .597 with associated p-value of .555. This means that the members of the two groups were more or less equivalent in terms of their pretest performance.

Comparison Between Experimental and Control Groups' Posttest

Table 4. Comparison Between Experimental and Control Groups' Posttest

Statistics	Control Group	Experimental Group
N	32	32
M	40.0625	40.8125
Σ	5.3275	5.54999
SEM	.94179	0.98111
SED	1.40563	
D	7.95147	
T	.534	
Computed t=	.534	Alpha=0.05
p-value =	0.047	
Interpretation	Significant	

By comparing the posttest performance of the control group and the experimental group, the result revealed a mean score of 40.8125. The control group recorded a mean score of 40.0625. These resulted to a mean difference of .75000 and standard error of 1.40563, resulting to a computed t-value of .534 and with an associated p-value of 0.047. Since the p value is less than the alpha 0.05, it was concluded that significant differences exists in the post test performances of the members of the experimental and control groups. This also indicates that the use of E-learning utilized by experimental group showed higher improvement on the performance of students in entrepreneurship subject than that of the controlled group.

6. DISCUSSION

The results drawn from the study proved that the use of e-learning helped enhance the performance of Senior High School students in Entrepreneur subject. It showed that the use of e-learning could be effective in enhancing students' performance in Entrepreneur subject. The improvement on students' posttest is a valid evidence for this claim. Through e learning, students are encouraged to participate in the process of learning.

It is undeniable that current generation of learners are equipped with the latest trend in technology. With that, the use of e learning could lead to higher learning interest to students. Their emergence to technology proved that utilizing e-learning is more effective than traditional learning.
c.E-learning is learner friendly as students had the option to choose their learning preference using the tool. It is time efficient and it offers variety in learning process. Additionally, the students may brows back to their previous lessons at any time.

The tool Encourage collaboration amongst learners, an online environment can foster group cohesiveness by enabling learners to interact outside the classroom in a safe educational environment which is mediated by the teacher.

It bringing students' contributions to the classroom. Instead of devising tasks and activities by themselves, teachers can count on students' contributions and ask them to post ideas, videos, images, opinions and questions before the lesson starts. These contributions can be used by the teacher in the lesson planning process, thus contributing to a more learner-focused lesson as supported by a study [10].

Edmodo tool provides the teacher with more opportunities to give personalized feedback on students' production. It might also help the teacher to provide individual support and make extra resources and activities available to learners.

7. CONCLUSIONS

Based from the findings of the study, the following were drawn: (1) The null hypothesis 1 no significant differences exist in the Intelligent Quotient (IQ) of the experimental and control groups was accepted; (2) The members of the experimental and control groups were similar in terms of their GPA. However, respondents from experimental group gained better learning through the use of e-learning tool; (3) The null hypothesis 2 which states no significant differences exist in the pretest performances between the experimental and control group was accepted. Respondents' from both groups showed more or less equivalent scores in terms of their pretest performance; (4) The null hypothesis 3 no significant difference exists in the posttest performances of the experimental and control group was rejected. Comparing the posttest results, data suggests that the use of application is more effective in improving the performance of students in entrepreneurship subject; (5) E-learning helped enhance the performance of Senior High School students in Entrepreneur subject. This tool could lead to higher learning interest to student. It is time efficient and offers variety in learning process.

8. RECOMMENDATIONS

Teachers should encourage learners to use E-learning tool. This tool could provide them with variety of ways to learn a topic. This could be beneficial to the learners regardless of their IQ or GPA profile. To further expose students on their preferred learning procedures. They should try to use of E-learning tools on their lessons in entrepreneur subjects. Most students are motivated in this way, as most of them if not all are using gadgets. Students should be provided with on-grade level appropriate learning materials when using E-learning tool in teaching entrepreneur subject. They should also be allowed to utilize innovative instructional tools. Although we do not discourage the use of traditional method in teaching. Teachers should arm themselves with enough knowledge about E-learning tools before incorporating the tools to their students. E-learning tools could be beneficial to both facilitator and learners, as long as proper procedures and standard are followed.

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