Contextualized E-Tech Video Lessons and Students' Performance

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ABSTRACT

As a key tool for delivering material in many flipped, hybrid, and online classes, educational videos have grown in importance in higher education. This study determined the effectiveness of the application of contextualized E-Tech video lessons in teaching Empowerment Technologies (E-Tech) on the performance of the 52 Grade 11 students HUMSS Strand – Section Brilliance of Capiz National High School during the Academic Year 2022-2023. This utilized a single-group pre-test-post-test quasi-experimental research design with the same dependent variable measured in one group of participants. The researcher administered to the participants the adapted pre-test and post-test questionnaires of the DepEd, Division of Capiz. The questionnaire was sent through Google Forms in their group chat and Google Classroom. The test scores were gathered, transmuted, and entered into the master data and computer-processed using a licensed IBM SPSS Statistics 28 program. Frequency, percentage, mean, and Wilcoxon signed rank tests were the statistical tools used. Results revealed that the participants' performance on Empowerment Technologies as a whole before the application of contextualized E-Tech video lessons was poor. Results further revealed that after the application of contextualized E-Tech video lessons the participants' performance on Empowerment Technologies was effective. When classified by sex, both male and female participants had outstanding performance. A statistically significantly positive change in participants' performance after the application of contextualized E-Tech video lessons was revealed. The application of contextualized E-Tech video lessons in teaching Empowerment Technologies was effective. It can have a meaningful impact on student learning and help to improve students' performance.

Keywords: Application, Experimental, Google Classroom, Students' performance, and E-Tech video lessons.

INTRODUCTION:

In the premise that everyone should have the opportunity to participate in life, education can be defined as the thoughtful, hopeful, and respectful nurturing of learning, as what Smith, (2019) pointed out. Singh and Thurman, (2019) defined online learning as learning experiences that take place in synchronous or asynchronous situations while using various internet-con-

nected devices (such as smart-phones, laptops, etc). In these settings, students can learn and engage with teachers and other students from the anywhere (independence).

Littlefield, (2018) argued that while asynchronous learning environments are poorly structured, synchro-

nous learning environments are because students participate in live classes, there are immediate interactions among teachers and students; there is a potential for immediate feedback. Learning materials are available through various forums and systems for learning rather than actual classes or lectures in this kind of an instructional setting. In such a setting, immediate feedback and prompt action are not possible (Rahman *et al*., 2022).

Additionally, Basilaia *et al.* (2020) suggested that in order to combat the spread of this deadly virus, online platforms is necessary, where video conferencing with students of 40 to 50 is feasible, dialogues with students can be held to maintain organic classes, connectivity to the internet is strong, lectures are readily available on mobile devices as well as laptops, the ability to view previously recorded lessons, and immediate feedback from learners can be obtained, and assignments can be taken. Bernard *et al.* (2014) asserted that video is radically changing educational institutions, which is having an impact the way teachers teach, gain knowledge, study, converse, and work. It is included into traditional courses, acts as the foundation for blended courses, frequently the primary method of material delivery in online courses. Technology can improve learning, as demonstrated by a number of meta-analyses.

METHODOLOGY:
This study utilized the single-group pre-test-post-test experimental method research design in which the same dependent variable was measured in one group of participants before (pre-test) and after (post-test) was administered. In this design, a particular kind of quasi-experiment, the outcome of interest is assessed twice: once before and once after exposing a non-random set of participants to a particular intervention or treatment. In this study, scores are measured both before and after a treatment, and the difference between the two scores is compared. It compares scores after a treatment to score in the same measures in the same participants prior to the treatment. This research design involves numerical data collection and statistical analysis. This research design single-group pre-test-post-test experimental design was appropriate for this particular study since its main concern was to determine the effectiveness of the application of contextualized E-

Tech video lessons in teaching Empowerment Technologies on the performance of Grade 11 Students. The study was conducted at Capiz National High School during the Academic Year 2022-2023. A pre-test and post-test with a total of 40 items for each Empowerment Technologies test was used as the main instrument in this study to analyze the effectiveness of the application of contextualized E-Tech video lessons in teaching Empowerment Technologies. The questionnaire has two parts. Part I was on the personal data information to gather basic information such as name, grade and section, gender, and age. Part II was the adapted questionnaire designed by DepEd, Division of Capiz (Jamora and Duran, 2022) that was considered suitable for this research.

The researcher used the updated Curriculum Guide in Empowerment Technologies using the Most Essential Learning Competencies (MELC). The topics covered the selected topics in 1st grading: ICT in the context of global communication, online safety, security and netiquette, effective online research, productivity tools; advance techniques using Microsoft word; advance techniques using Microsoft excel & advance techniques using Microsoft power point. There was a total of 52 Grade 11 students HUMSS Strand, Section Brilliance as participants. This was a population study. The problems encountered by Grade 11 students HUMSS Strand, Section Brilliance in Empowerment Technologies in the new normal setting were first recognized and its strictness was classified. These were stabilized by the result after the participants answered the pre-test to determine how much they learned in Empowerment Technologies. A letter asking permission from the Principal, Assistant Principal, and Schools Division Superintendent to conduct the experimentation was secured. The participants were assisted by the researcher through sending letter of communication to their parents for the conduct of experimentation duly signed by the principal. Avail-ability of gadgets and equipment needed in the conduct of the experiment was deliberated. The modules used for contextualized E-Tech video lesson were identified and prepared. Online orientation with the participants through Google meet was conducted.

The schedule on the conduct of experimentation during online class was established. The contextualized E-

Tech video lesson was applied during the virtual class and was uploaded in a Google drive and to the e-learning portal (website). These were shared to the Google classroom and group chat where they can play, download and watch the video repeatedly. During the series of virtual classes, the researcher was present to determine the students' virtual participation on the activity. Students can answer the questions being asked on the contextualized E-Tech video lessons.

After three (3) months of application of the contextualized E-Tech video lessons, a post-test was administered to the participants to determine the effectiveness of contextualized E-tech video lessons. The questionnaire was sent through Google forms in their group chat & Google classroom. The participants were encouraged to re-watch the contextualized E-Tech video lessons for mastery and improvement of their performance. The accomplished test questions were gathered, transmuted, and interpreted by the researcher to get the output and findings for the research. The results of their scores in pre-test and post-test were gathered and generated using the Statistical Package for Social Sciences (SPSS) and were used as the data source of this study. To facilitate analysis, the raw data were scored and interpreted using the following scoring guide as basis.

RESULTS AND DISCUSSION:
When all the 52 participants were taken as a whole group, **Table 1** discloses that their performance on Empowerment Technologies as a whole before the application of contextualized E-Tech video lessons had a mean of 44.58, verbally interpreted as "Did Not Meet Expectations". When classified according to age, result showed that the participants had a qualitative rating equivalent to "Did Not Meet Expectations". Furthermore, when the participants were classified according to sex, result revealed that both the male and female participants had a qualitative rating equivalent to "Did Not Meet Expectations". The result implied that the participants' performance did not come up to expectations before the application of contextualized E-Tech video lessons. The result was consistent with Wang *et al.* (2014) results that low involvement had a negative influence on learning and academic achievement. The way that students approach learning is also changing, and they now prefer flexible, at all times, &

adjustable learning environments, which is typically made possible by the accessibility of online resources.

Table 1: Participants' performance before the application of contextualized E- tech video as a whole and when classified according to their profile.

Variables	Mean (%)	Verbal Interpretation
Whole	44.58	Did Not Meet Expectations
Age:		
15 to 16 years old	45.25	Did Not Meet Expectations
17 to 18 years old	43.38	Did Not Meet Expectations
19 to 20 years old	46.25	Did Not Meet Expectations
Sex:		
Male	47.06	Did Not Meet Expectations
Female	43.36	Did Not Meet Expectations

When all the 52 participants were taken as a whole group, **Table 2** discloses that their performance on Empowerment Technologies as a whole after the application of contextualized E-Tech video lessons had a mean of 93.89 with a verbal interpretation of "Outstanding" performance. When classified according to age, result disclosed that the participants had an "Outstanding" performance. Similarly, when classified according to sex, result showed that both the male and female participants had an "Outstanding" performance. The result implied that the participants performed well after the application of contextualized E-Tech video lessons.

The study's result corroborated to that of Velnampy, (2013), who found a high favorable corre-lation between using electronic resources & academic performance. Multiple regression analysis revealed a statistically significant relationship between the use of e-resources and academic success. In a similar vein, Tulinayo *et al.* (2018) discovered a positive and substantial relationship between students' attitudes about using these devices, their capacities to use them, and their intents to utilize them, as well as their perceptions of the value of electronic devices for learning. Tan and Pearce, (2011) study revealed that using videos to engage students while also imparting subjective understanding to them was an effective strategy.

Table 2: Participants' performance after the application of contextualized E- tech video lesson as a whole and when classified according to their profile.

Variables	Mean (%)	Verbal Interpretation
Whole	93.89	Outstanding
Age:		
15 to 16 years old	94.42	Outstanding
17 to 18 years old	93.13	Outstanding
19 to 20 years old	93.75	Outstanding
Sex:		
Male	93.24	Outstanding
Female	94.21	Outstanding

Table 3 displays whether there was a significant change in the participants' performance before & after the application of contextualized E-Tech video lessons. Wilcoxon Signed Rank Test revealed a statistically significantly positive change in participants' performance after the application of contextualized E-Tech video lessons because the z-value of -6.280 had a p-value of 0.000 which was less than 0.01 alpha. This result further implied that the application of contextualized E-Tech video lessons was effective & therefore, influenced the performance of the participants in their empowerment technologies subject. The study's result agreed to that of (Tan and Pearce, 2011; Tang and Austin, 2009; Yousef *et al.* 2014; Zhang *et al.* 2006), which established use of digital videos has a significant impact on students' academic achievement. In their research, Narad and Abdullah, (2016) noted that the students' academic performance has a significant role in determining the institution's overall success or failure. Furthermore, they reaffirmed the widely held view that strong academic achievement paves the way for improved employment opportunities and, consequently, a stable future.

Table 3: Significant change in the b Participants' performance after the application of contextualized E-tech video lesson.

Variables	Mean (%)	z-value	p-value	Remarks
Participants' Performance Before the Application of Contextualized E-Tech Video Lessons	44.58			
		-6.280	0.000	s
Participants' Performance After the Application of Contextualized E-Tech Video Lessons	93.89			

p-value < 0.01 = significant

CONCLUSION:

The results show that the participants originally did not meet the expectation in the Empowerment Technologies subject. However, their performance signifycantly improved with the application of contextualized E-Tech video lesson, leading to an outstanding rating. Regardless of age or gender, the improvement was seen. Accordingly, the application of contextualized E-Tech video lessons was successful in influencing and having a favorable impact on the participants' performance in the Empowerment Technologies. The findings emphasize the importance of embracing technology as a teaching tool to improve participants' performance and suggest that further research is needed to explore the potential of other technological innovations in education. To improve students' performance in Empowerment Technologies, academic institutions & teachers may adopt usage of contextualized E-Tech video lessons. It has been demonstrated that the implementation of contextualized E-Tech video lessons to teach students has improved their knowledge and performance. Regardless of their age and gender, this recommendation applies to all the participants. This may be put into practice by educational institutions & lecturers, who teach Empowerment Technologies. To give students a more interesting and successful learning experience, they may incorporate contextualized E-Tech video lectures into their curriculum & teaching strategies. In order to improve the learning results even further, teachers may regularly evaluate and track how these video lessons are affecting their students' performance.

CONFLICTS OF INTEREST:

The author declares that there is no conflict of interest.

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