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# YouTube as a Web-Based Instructional Tool in Higher Education: Technology-Enabled Learning during the Covid-19 Pandemic

**Haidee Fuentes Patalinghug[1], Mark Erana Patalinghug[2*]**

[1]Teacher Education Department, J.H. Cerilles State College, Philippines

[2] Criminal Justice Education Department, J.H. Cerilles State College, Philippines

*Corresponding email: mark.patalinghug@jhcsc.edu.ph

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**Abstract: YouTube as a Web-Based Instructional Tool in Higher Education in Technology Enabled Learning during the Covid-19 Pandemic. Objectives:** YouTube became an alternative to face-to-face teaching during COVID-19, although its use among Bachelor of Science in Criminology students is sparse. This study evaluated YouTube as an instructional tool for Technology-Enabled Learning (TEL). **Methods:** This survey randomly sampled 281 BS Criminology students. Frequency, mean, percentage, and ANOVA were used in analyzing the data. **Findings:** Results disclosed that the students utilized YouTube. However, females have a longer time of Youtube usage than males to search for information for academic studies and enrich their general knowledge. Demographics have no influence on the acceptability of YouTube for TEL. Higher acceptability of YouTube for TEL was seen among students who used it frequently and for an extended length of time. **Conclusion:** Using YouTube as a web-based instructional tool could improve students' sociability, grades, motivation to learn, and curriculum delivery when utilized in TEL.

**Keywords:** YouTube, acceptability, technology-enabled learning, online learning.

***Abstrak: Youtube sebagai Media Pembelajaran Berbasis Web dalam Pendidikan Tinggi: Pembelajaran Berbantuan Teknologi selama Pandemi Covid-19. Tujuan****: YouTube menjadi alternatif pengajaran tatap muka selama COVID-19, meskipun penggunaannya di kalangan mahasiswa Bachelor of Science dalam Kriminologi masih jarang. Studi ini mengevaluasi YouTube sebagai alat instruksional untuk Technology-Enabled Learning (TEL).* ***Metode:*** *Survei ini mengambil sampel secara acak 281 mahasiswa BS Kriminologi. Frekuensi, mean, persentase, dan ANOVA digunakan dalam menganalisis data.* ***Temuan:*** *Hasil mengungkapkan bahwa siswa memanfaatkan YouTube. Namun, perempuan memiliki waktu penggunaan Youtube yang lebih lama dibandingkan laki-laki untuk mencari informasi studi akademis dan memperkaya pengetahuan umum mereka. Demografi tidak mempengaruhi penerimaan YouTube untuk TEL. Penerimaan yang lebih tinggi dari YouTube untuk TEL terlihat di antara siswa yang sering menggunakannya dan untuk waktu yang lama.* ***Kesimpulan:*** *Menggunakan YouTube sebagai alat pembelajaran berbasis web dapat meningkatkan kemampuan bersosialisasi, nilai, motivasi belajar, dan penyampaian kurikulum siswa ketika digunakan di TEL.*

***Kata kunci:*** *YouTube, penerimaan, pembelajaran berbantuan teknologi, pembelajaran online.*

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## INTRODUCTION

In 2020, the COVID-19 pandemic spread to practically every area of the earth. This global health problem has impacted various industries, including education, where there has been a significant surge in adapting online platforms for teaching and learning among educators and students recently. The COVID-19 pandemic has resulted in massive engagement in online learning, even though many institutions and educators worldwide have already incorporated certain online aspects into their teaching and learning processes. The changes in educational settings worldwide brought by the pandemic have shifted the landscape of students' learning from traditional face-to-face transitions to Technology-Enabled Learning (TEL) through blended or web-based learning modes. Amid COVID-19 restriction measures, web-based teaching has become an indispensable means of learning delivery. The significance of Technology Enabled Learning (TEL) cannot be overstated. TEL is not a new concept in educational settings, and the application of technologies in learning has been linked to increased student motivation, self-management, self-assessment, and the promotion of cognitive development in students (Ng, 2015). Moreover, incorporating technology into educational settings was seen to be a contributing factor to student satisfaction (Patalinghug et al., 2021; Sulaiman & Dashti, 2018)

It is becoming more and more common to see web-based educational tools like websites and video-sharing sites used in schools (e.g. Oteyola et al., 2019; Syakur et al., 2020). These instructional tools can be used in education to impact the learning process positively. Students can engage in active learning to realize their potential using technology-enabled learning (Nuryantini & Yudhiantara, 2019). With the help of web-based instructional tools, it is possible to promote active, effective, and interactive learning. Students were better able to understand the information in the test and post-test on the media they made, which led to better learning outcomes (Rukun & Irfan, 2020). While digitization in education has several advantages, it may also be seen as an essential step toward becoming more global in terms of its distribution and access to personal and general sources, among other things (Ugur, 2020). Even though it is not possible to study the content in the field directly, web-based options could assist professors in explaining the context of the lesson (Marianingsih et al., 2021). Likewise, the use of information technology in education can favorably affect the performance of those who utilize it (Bahian, 2015; Kainama & Latuserimala, 2022).

The ubiquity of the internet allows professors to facilitate students' learning and utilize web-based instructional tools even when the limited movement of people was enforced. On the one hand, the digital technology landscape in education has altered swiftly while remaining relatively steady on the other hand. There has been a big change in digital technologies at the technological level that can help people learn. For example, YouTube is a valuable web-based resource that can be used for instructional and teaching activities and is one of the most popular web-based resources today. Maziriri et al. (2020) study indicated that YouTube could be of tremendous aid in college students' learning.

Furthermore, As a video-sharing site, YouTube has become more popular with students, who see how it can help them learn activities and improve their understanding of university courses (Almobarraz, 2018). YouTube is an internet-based educational tool that allows students to retain information quickly and stimulates them to learn using videos and visuals. Learners were motivated to learn because of the videos and graphics provided by YouTube (Deng & Yuen, 2011). Furthermore, several studies show that

video content can help promote a higher connection with the content and more interest in visualization, memorization, and learning (Cohendet et al., 2019; Constantin et al., 2019; Sugiura et al., 2022), better academic achievement and improving general knowledge(Mady & Baadel, 2020; Yaacob & Saad, 2020).

While YouTube has gained prominence and popularity as an online video-sharing platform, several studies have assessed its acceptability and usefulness among users (Ali & Ali, 2018; Yaacob & Saad, 2020). Likewise, Ugur (2020) infers that receptivity to media for instructional purposes is motivated by comfort, digital literacy, familiarity, and self-rated competence levels with digital tools. In addition, researchers identified perceived usefulness (Adeyemi & Issa, 2020), ease of use and playfulness (Dumpit & Fernandez, 2017), and the quality of videos (Shoufan, 2019) as other factors that must also be considered. Moreover, Jung and Lee (2015) suggest maximizing the teaching-learning experience through YouTube as an educational tool, and colleges should foster an environment suitable for technology adaptation and technical support and educate students on how to use this technology. Nevertheless, the interplay between profile and other variables was not seen in the literature cited. Besides, recent research suggests including which parts of and where videos are being watched. (Jung & Lee, 2015), digital literacy skills when exploring such factors as age, gender, and class (Ugur, 2020), students' performance in the class (Almobarraz, 2018), and the sociability of students (Dumpit & Fernandez, 2017).

During the COVID-19 pandemic, YouTube became a popular alternative to face-to-face education as a Technology-Enabled Learning (TEL) tool, but its application among Bachelor of Science in Criminology students is absent in existing literature. Specifically, the primary goal of this study is to investigate how students use YouTube to achieve academic goals and grow and increase their general knowledge and how this influences their opinions of YouTube and their academic standings. The second is to find out YouTube acceptability as an instructional tool in Technology-Enabled Learning (TEL). The study also compared the results on YouTube acceptability among the sample population.

## METHODS

### Participants

Using Cochran's (1977) procedure to calculate the sample size, it was determined that 50 percent of the population proportion would be targeted to participate in this survey with a 0.05 margin of error and a 95 percent confidence level. This means 242 or more measurements/ surveys out of 650 criminology students are needed to have a confidence level of 95% that the real value is within 5% of the measured/ surveyed value. Random sampling was utilized to gather the necessary data from the sample population, which was carried out at J.H. Cerilles State College in Dumingag, Zamboanga del Sur, during the first semester of 2021–2022. The sample population who responded to the survey were 281 Bachelor of Science in Criminology students, which decreases the margin of error for this study.

### Research Design and Procedures

In this study, a descriptive approach has been used in conjunction with an analytical aspect to describe and analyze the use of YouTube as a ubiquitous medium for educational purposes among Bachelor of Science in Criminology

Students. Further, the study aimed to describe the sample population in terms of its YouTube utilization to enrich their knowledge and evaluate their acceptability towards YouTube in an online class setting. Approval from the institution's research officer was secured prior to the conduct of the study, dated January 5, 2022. The gathering of data was scheduled for the whole month of January 2022 using Google forms, following the procedures for conducting an online survey (Alessi, E., & Martin, 2010; Patalinghug & Patalinghug, 2021, 2022; Roble & Tan, 2021).

**Instruments**

The instrument that was utilized in this investigation was derived from Mady & Baadel (2020). After that, it was placed through revalidation and reliability testing, which determined its appropriateness with an alpha score of 0.89 when compared to Cortina's (1993) guide. This resulted in the conclusion that it was appropriate for the current study. Table 1 displays the scoring range that was utilized from the guide that was provided by Salac (2018).

**Table 1.** Likert scale for the acceptability

| No. | Average Weighted Mean Range | Descriptive Equivalent |
|---|---|---|
| 5 | 4.21 – 5.00 | Strongly Agree |
| 4 | 3.41 – 4.20 | Agree |
| 3 | 2.61 – 3.40 | Fairly agree |
| 2 | 1.80 – 2.60 | Disagree |
| 1 | 1.00 – 1.79 | Strongly Disagree |

**Data Analysis**

Descriptive and inferential statistics was utilized in analyzing the data using SPSS version 21. Mean, frequency count, and percentage were used to discribe the profile, frequency of youtube utilization, average time spent on YouTube, and acceptability. On the other hand, ANOVA was utilized to test the significance of the difference on the frequency of use, average time spent and YouTube acceptability when analyzed according to profile and post hoc using Tukey test.

## RESULTS AND DISCUSSION

In order for the researchers to provide a description of the characteristics of the research samples, descriptive statistics were utilized.

**Table 2.** Profile of the sample population

| Variable | Categories | Frequency | Percentage |
|---|---|---|---|
| Gender | Male | 144 | 51.25 |
| | Female | 137 | 48.75 |
| Family Monthly Income | Less than PHP10,000 | 251 | 89.32 |
| | Between PHP 10,001 to PHP 21,194 | 19 | 6.76 |
| | Between PHP 21,194 to PHP 43,828 | 8 | 2.85 |
| | Between PHP 43,828 to PHP76,669 | 2 | 0.71 |
| | Between PHP76,669 to PHP131,484 | 1 | 0.36 |
| Year Level | 1st year | 135 | 48.04 |

| | | | |
|---|---|---|---|
| | 2nd year | 88 | 31.32 |
| | 3rd year | 40 | 14.23 |
| | Graduating | 18 | 6.41 |
| Total | | 281 | 100 |

Table 2 provides an overview of the study participants' demographics. Among 650 criminology students, 281 ramdom samples were taken. This equates to 43.07% of the total population responding. In terms of the gender of the respondents, there was no big difference between the frequency of male (51.25%, n=144) and female (48.87%, n=137) respondents. The majority of the sample population were in their first year (48.04%, n=135) and second year (31.32%, n=88) and had a monthly family income of less than Php10,000 (89.32%, n=251).

**Frequency of YouTube utilization of the sample population**

Figure 1 depicts the respondents' use of YouTube to search for information and enrich their general knowledge.

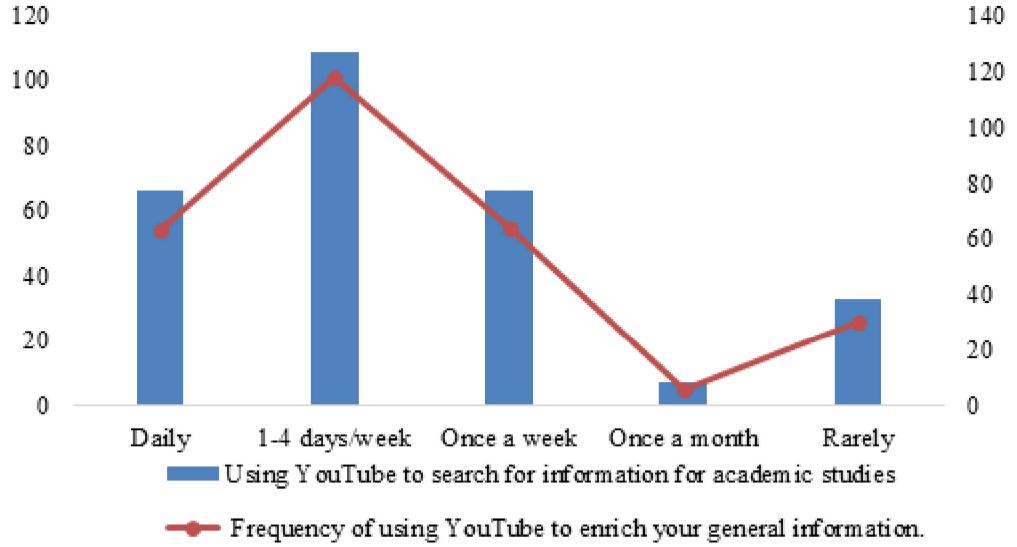


**Figure 1.** Frequency of youtube utilization

The data shows that a large number of respondents (38.79 %, n=109) have used YouTube to search information for academic studies 1-4 times per week, as illustrated. In a similar vein, the frequency both daily and once-a-week visits was the same among the sample group (23.49%, n=66). Meanwhile, the frequency with which they used YouTube to enrich their general information is almost identical to the frequency with which they use YouTube in academic studies, many of the participants used it 1-4 days/week (41.99%, n=118), once a week (22.78%, n=64), and daily (22.42%, n=63) to get information. This demonstrates that, among the respondents in the sample population, the use of YouTube to search for information pertaining to academic and general knowledge is a commonplace, as evidenced by the data.

**Profile and average time spent on YouTube to do per academic task**

Figure 2 reports the results on the average time spent on YouTube to do one academic task based on gender. Based on the results, when it

comes to gender and the amount of time spent on YouTube to complete per academic task, male and female users are practically on par with one another in terms of the shortest (less than 10 minutes and longest (more than 2 hours) duration of time spent. This result was supported in the research done by Mady and Baadel (2020), who discovered that male and female students have equivalent times spent on the shortest and longest durations for accomplishing academic activity. This result was determined to be consistent with their findings.

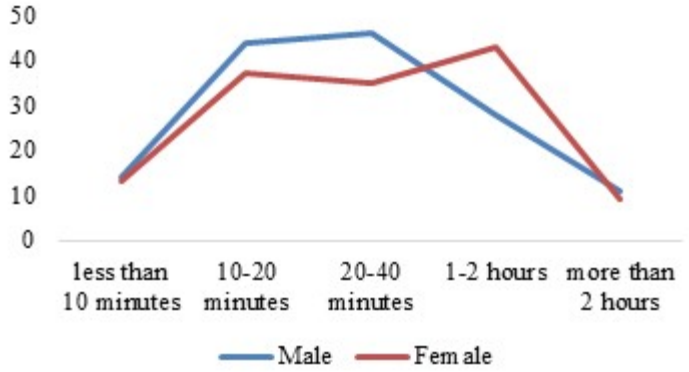


**Figure 2.** Time spent on youtube per academic task by gender

On the other hand, the most common responses provided by male respondents about their length of time spent fell within the ranges of 10–20 minutes and 20–40 minutes, respectively. In addition, the average amount of time spent on YouTube by females to do academic tasks is significantly longer (1-2 hours) than the average amount of time spent by males (20-40 minutes).

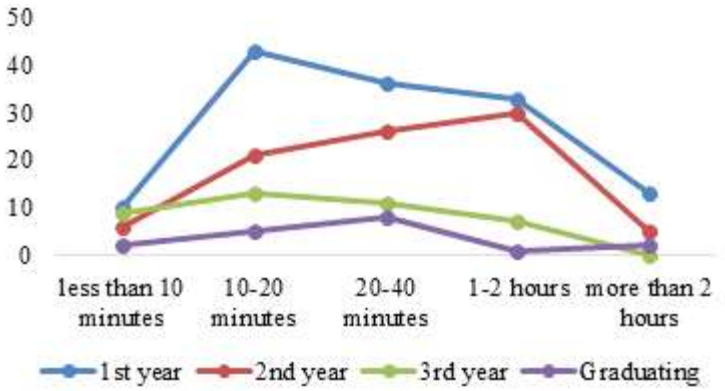


**Figure 3.** Time spent on youtube per academic task by year level.

Figure 3 reports the results on time spent on YouTube per academic task by year level. As shown, among the 1st year and 3rd year criminology students, the longest time spent on YouTube is 10-20 minutes. For the 2nd year BS Criminology students, the longest time spent on YouTube to per academic task is 1-2 hours while among graduating students, the longest time spent in YouTube to do per academic task is 20-40 minute.

**Youtube acceptance for the Technology Enabled Learning (TEL)**

Table 3 presents the acceptability of YouTube for Technology Enabled Learning (TEL) among BS Criminology students during the COVID-19 pandemic. As presented, respondents agreed on the acceptance in terms of easiness of using YouTube compared to other platform utilized (x=3.609, SD=.0795). This demonstrates that the samples under study finds it simple to utilize YouTube as an online technology in TEL for instructional purposes. This finding has an interesting relationship to previous studies showing that technology adoption is linked to the perception of ease of use (Maziriri et al., 2020; Wu & Chen, 2017).

Likewise, the samples agreed that YouTube has ability to promote students' sociability (x = 3.673, SD =.6543). This finding was supported by studies that was conducted more recently, and it indicates that technology can easily contribute to the establishment and development of communication and collaboration among students (Mady & Baadel, 2020; Roza et al., 2022; Spengler, 2015). However, this result did not coincide with Kainama & Latuserimala's (2022) previous findings, which claimed that students' social aspects were unaffected by the usage of technology.

On the aspect of improvement in the students' grades when using YouTube as a learning tool, it obtained a rating of moderately acceptable (x = 3.381, SD =.8541). Previous studies found that both learning with the help of technology and taking part in activities that were conducted online had a favorable impact on the development of the students who participated in the study (Bahian, 2016; Chtouki et al., 2012; Nurhasanah, 2022). In addition, Kainama & Latuserimala (2022) offered support for this result that the implementation of technology can have a major impact on the overall performance of students. This research lends credence to the notion that instructional technology such as YouTube in TEL can play a role in improving students' academic outcomes.

**Table 3.** Youtube acceptance for the technology enabled learning (TEL)

| Categories | Mean | SD | Descriptive Equivalent |
|---|---|---|---|
| 1. YouTube search easiness as compared to other platforms | 3.609 | .7095 | Agree |
| 2. Students' sociability in using YouTube as learning aid improves | 3.673 | .6543 | Agree |
| 3. YouTube as a learning tool can do improvement in the students' grades | 3.381 | .8541 | Agree |
| 4. Using YouTube increases motivation to learn. | 3.658 | .7865 | Agree |
| 5. Curriculum Content can be delivered effectively and meaningfully with the use of YouTube. | 3.662 | .7533 | Agree |
| Overall mean | 3.597 | | Agree |

Regarding motivation, it was discovered that YouTube enhances the motivation to learn with moderate acceptability (x=3.658, SD =.7865). It is interesting to note that the data obtained in this study were a validation to Maziriri et al. (2020), who discovered that the usage of YouTube by students had significance in learning behavior, particularly at the tertiary level. Similary, the findings were consistent with study that was just recently published, which found that using

YouTube videos as instructional tools improves the experiences of communication between teachers and students as well as between students themselves (Olasina, 2017). While the sample population also agreed on the acceptability (x=3.662, SD=.7533) on the statement that curriculum content can be delivered effectively and meaningfully with the use of YouTube. In the study of Olasina (2017), it's clear from the significant results that the YouTube-facilitated group outperformed the traditional learning technique group in academic writing. This illustrates that the subject matter from the curriculum can be taught effectively and meaningfully with the use of YouTube, which in turn can lead to increased academic performance.

The results of the study samples accepted YouTube for TEL during the COVID-19 pandemic with the overall mean of 3.597 having a descriptive equivalent of "Agree", which generally pointed in the same direction about the acceptability of using YouTube to achieve the objective of technology-enabled education. This finding was similarly touched in the researches which demonstrated that student support for using YouTube was found (Almobarraz, 2018; Jung & Lee, 2015; Mady & Baadel, 2020; Oteyola et al., 2019; Yaacob & Saad, 2020).

**Students' demographics, frequency of use, average time spent, and YouTube's Acceptability Difference**

Table 4 reports the result on the test of difference on profile, frequency of usage, average time spent on YouTube, and acceptability difference.

**Table 4.** The result on the test of difference

| Categories | F | Sig. p-value |
|---|---|---|
| **Profile and Youtube Acceptability Difference** | | |
| Age and youtube acceptability | 1.632 | 0.182 |
| Family monthly income and youtube acceptability | 0.501 | 0.682 |
| **Frequency of use, Average time spent and YouTube Acceptability Difference** | | |
| Frequency of YouTube use and acceptability | 5.711 | 0.000 |
| Average time spent on YouTube and acceptability | 5.523 | 0.000 |

*. The mean difference is significant at the 0.05 level.

As shown in the above table on the difference on sample population responses on YouTube acceptability when grouped according to age ($F$=1.632, p-value=0.182> 0.05). and when grouped according to parents monthly income ($F$=0.501, p-value=0.682> 0.05), reflects no significant difference in ANOVA. The results suggest that the sample population's demographics have no bearing on YouTube's acceptability as an instructional tool in TEL.

For the difference on YouTube acceptability when grouped according to frequency of use ($F$=5.711, p-value=0.000>0.05) and average time spent ($F$=5.523, p-value=0.000> 0.05), result reflects statistical significance in ANOVA.

After it was determined that the overall test was statistically significant, a post-hoc analysis using the Tukey test was performed to compare the mean of each group. This result indicated that those sample population who frequently use YouTube from 1 hour onward had significantly higher acceptability than samples with less frequent use and shorter time spent.

## CONCLUSIONS

Based on the results of the analysis and discussion, it can be concluded that students pursuing a Bachelor of Science in Criminology across all year levels frequently used YouTube as a web-based instructional tool during the COVID-19 pandemic. This study also found that females spent more time searching for information for academic studies and to enrich their general knowledge, although there was variation in both the frequency with which they used YouTube and the amount of time they spent doing so. It is possible that students' social interactions, grades, motivation to learn, and the efficient and meaningful delivery of curriculum content could all be improved if TEL teachers used YouTube more often than other web-based platforms. Further, the study also found that the acceptance of YouTube as a web-based instructional tool in a TEL is unaffected by the demographics of the students. On the other hand, the level of acceptability of YouTube for TEL is higher among students who have used the platform frequently and for an extended length of time. Future research can be conducted focusing on the relationship between the content, length of YouTube videos and the degree to which students might accept their use in TEL as it was not covered in this particular study.

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