DIGITAL TECHNOLOGY EXPERIENCES OF BSED-SCIENCE STUDENTS IN A STATE UNIVERSITY

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ABSTRACT

In response to transformation of educational landscape, schools all over the world have begun using digital technology to boost students' interest and academic performance. Students have been exposed to new learning methods that involve technology. However, excessive and irresponsible use of digital technology may lead to more dangers than benefits. Some of these disadvantages such as poor academic performance, academic failure, or unsatisfactory grades (Flanagan, 2008) prove that an increased amount of time that the youth spend on these activities poses negative effects to their online learning. This prompted the researchers to conduct a study on the advantages and drawbacks of digital technology. It used an explanatory-sequential research design and utilized convenience sampling for the quantitative phase using questionnaire. There were 15 participants randomly selected from 100 BSED students Major in Science for the qualitative phase and were also interviewed using Guide Questions. The qualitative data was evaluated using thematic analysis, while the quantitative data was analyzed through descriptive statistical analysis and exploratory factor analysis using Jeffrey's Amazing Statistics Application (JASP). Findings revealed that students use various digital technologies for both educational and non-educational purposes, such as smartphones and Google Classroom, and Facebook and Mobile Legends, respectively. The impact of digital technology on students' online learning can be either favorable or detrimental, depending on the students' experiences, perspective or attitude, and utilization.

Keywords: digital technology, experiences

INTRODUCTION

It is indeed intolerable to live in a world that has become high-tech but has not been influenced by it, so students have been exposed to new learning methods that involve technology. Electronic tools, systems, devices, and resources that generate, store, or process data are referred to as digital technologies (Teach with Technologies, 2019). For example, social media, online games, multimedia, and mobile phones. Through digital technologies and surfing the internet, it becomes easy for students to search for information and learn, which is why one of the most common activities that youths do online is schoolwork. As a result, schools all over the world have begun to use digital technology as a learning tool to increase student interest and academic performance. However, as digital technology advances, so do the activities that people do online

aside from schoolwork; for example, some teenagers nowadays use chat, Skype, Facebook, and other forms of social media to communicate and interact. Others go online to play games, listen to music, and engage in various other activities unrelated to school. These activities are primarily responsible for excessive and inappropriate use of digital technologies, which leads to poor academic performance, academic failure, or unsatisfactory grades (Flanagan, 2008). As a result, the increasing amount of time that youths spend on these activities raises concerns about the potential effects of digital technology on their online learning.

The world people live in has indeed become a technical world (Fouts, 2000) In many ways, this generation differs from previous generations. People now have more access to technology than they ever have before. Multi-functional devices such as smartwatches and smartphones have been made possible by modern technology. Computers are becoming more robust, portable, and faster than they have ever been (AgingInPlace, 2018). These technological advancements made our life easier, faster, better, and more enjoyable. In fact, this generation is focused on improving student achievement while embracing digital technology as a tool (Christen, 2009). Because of its globalization, digital technology in teaching and learning is considered crucial if we are to have a long-term impact on how students learn, based on the idea that students are more engaged and therefore retain more knowledge (Costley, 2014). Nonetheless, the potential effects of digital technology on students' online learning, whether positive or negative, have not been thoroughly investigated in many other studies. This prompted the researchers to conduct a study on the advantages and drawbacks of digital technology and looked at how students use the digital technologies that they have access to, such as smartphones and laptops, to name a few.

OBJECTIVES OF THE STUDY

This aimed to determine the Digital Technology Experiences of Fourth-Year BSEd-Science students at Leyte Normal University. It specifically attempted to answer the following questions:

1. To identify the digital technologies used by the respondents in terms of:
   1.1 Devices;
   1.2 Learning Management System;
   1.3 Mobile Games; and
   1.4 Social Media
2. To determine the use of digital technology in terms of frequency and purpose.
3. To ascertain how digital technologies affect students' online learning.

METHODOLOGY

This study used a mixed-method approach, specifically an explanatory-sequential design (Creswell et al., 2003). The mixed-method approach is a research method that combines quantitative and qualitative approaches by incorporating both quantitative and qualitative data into a single study (Wisdom, 2013). The quantitative phase emphasizes objective measurement and attempts to numerically or mathematically analyze data gathered from questionnaires, polls, or surveys (Babbie, 2010). Whereas the qualitative phase emphasizes the socially created nature of reality. It seeks answers to the following questions: how are social experiences created and given meaning? (Denzin & Lincoln, 2000). Hence, the course of this study is a mixed-method approach because it aims to obtain an in-depth insight into the research findings by providing complete and combined data utilization (MacDougall, 2019).

Furthermore, the study used an explanatory-sequential design, a type of mixed-method research design that consists of two distinct phases. The first is the collection and analysis of quantitative data, followed by the collecting and interpreting of qualitative data (Cresswell et al., 2003). The explanatory-sequential design was used in this study because it allows the researchers to provide an in-depth look at the research topic and increases the researcher's understanding of the research questions by providing statistically significant results and determining how it happens (Consultores, 2020).

Finally, in quantitative and qualitative phases, this study used convenience sampling and

simple random sampling, respectively. Convenience sampling is a type of non-probability sampling method that collects data from members of the population who are readily available to participate in the study. Meanwhile,Simple random sampling is a probability sampling strategy in which each member of the population can be chosen randomly as a member of the sample (Gravetter & Forzano, 2011).

The quantitative data was analyzed through descriptive statistical analysis using Jeffrey's Amazing Statistics Program (JASP). JASP is a free program developed by Sir Harold Jeffreys that can generate complex statistical analysis relevant for publication in a faster and easier way (JASP Team, 2018). Descriptive statistical analysis is used to outline or to give a summary of the data set, including the variable's mean, standard deviation, and frequency that help in understanding quantitative insights (Hayes, 2021). The researchers adopted and modified some of the sections of the research instrument used in the study of Staddon (2019) titled “Bringing technology to the mature classroom: age differences in use and attitudes.” The instrument has been renamed the “Digital Technology Involvement and Attitude Questionnaire” to reflect the needs that the researchers are attempting to address in this study. The modified survey questionnaire is divided into three sections. The survey’s first section titled “Digital Technology Involvement,” identifies the specific digital technologies used by LNU’s Fourth-Year BSED-Science students, and the section titled “Frequency of Use of Digital Technology,” assesses how frequently these students use digital technology.

For the qualitative phase, the data obtained from the interview was analyzed using thematic analysis. Thematic analysis is a data analysis technique that allows researchers to identify themes and patterns of meaning in a dataset relevant to a particular research problem through analyzing any type of qualitative data, such as interviews, focus groups, and qualitative surveys (Braun & Clarke, 2008). This method involves the following steps: transcription, reading and familiarization, coding, formulation of emergent themes, and finalizing data analysis. In transcription, the audio data gathered from the phone call interview were transcribed to create its text-based format. Transcription allows researchers to make a judgment based on an interpretative process (Bailey, 2008). It is necessary to be very familiar with the data to notice things of interest. Hence, the researchers had to read carefully during the transcription process while keeping the theoretical lenses in mind to be able to determine how these are reflected in the data collected. Following that, the researchers emphasized the important statements. Then, using clustering, the researcher grouped the data that shared similarities. The researchers then classified meaningful information and organized it into themes and categories and then finalized the data analysis.

RESULTS AND DISCUSSION

1. Profile of the Respondents

1.1. In terms of Gender

In general, fourth-year BSEd-Science students of Leyte Normal University ages ranging between 20 to 28 years old. Figure 1 exhibits that 65% of the population are 21 years of age, 26% of them are 22 years of age, 7% of them are 20 years old and the remaining 2% ages between 23 and 28 years of age.

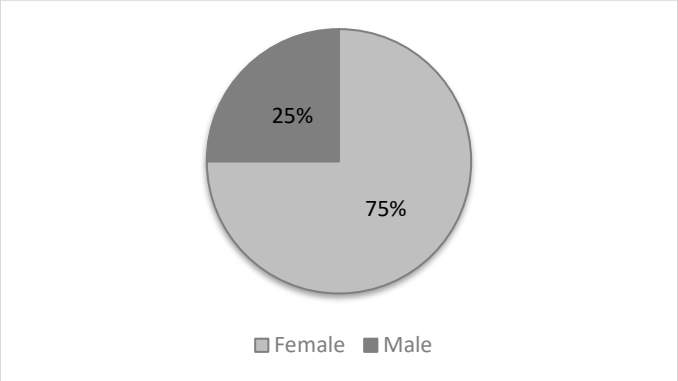

Figure 1. Gender of the respondents

Figure 1 also illustrates the sex frequencies of Leyte Normal University fourth-year BSEd-

Science students. According to the graph above, 75 of the 100 respondents are females, accounting for 75 percent of the total, while the remaining 25% of the respondents are males.

1.2. In terms of Annual Household Income

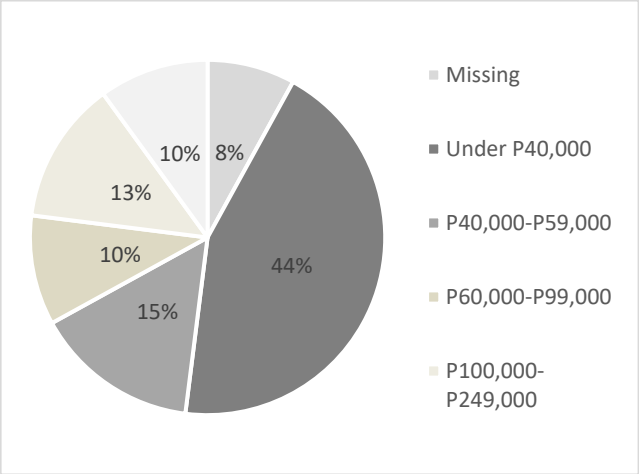

Figure 2. Annual Household Income of the Respondents

Figure 2 depicts the breakdown of Annual Household Income of the Fourth year BSEd-Science students in Leyte Normal University. From figure above reveals that most of the students have annual household income of under P40,000, representing 44% 15% of have approximately P40,000-P59,000, 10% have estimated P60,000-P99,000, 13% have about P100,000-P249,000, another 10% have P250,000 and above, while the remaining 8% of the respondent were undecided of their annual household income.

2. Digital Technology Involvement

2.1. In terms of Devices used by the respondents

According to the descriptive analysis of devices, Smartphone has the lowest mean value of 1.1, followed by Laptop (1.2), Flash drive (1.4), Printer (1.7), Scanner (2.0), Hard drive (2.3), Computer (2.4), and Tablet with the highest mean value of 2.6. It is also worth noticing that the standard deviations are relatively small in relation to their respective means, especially for Smartphone, which is the leading educational device, and Tablet, which is the lowest-ranked.

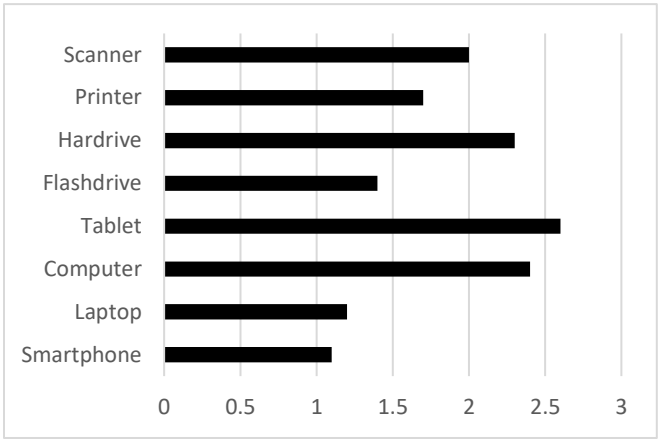

Figure 3. Devices used by the respondents

This would indicate a minimal level of variation in students' use of digital devices. In general, the results show that smartphones, laptop, and flash drives have an average mean value of 1, indicating that practically all fourth-year BSEd-Science students at Leyte Normal University use these gadgets for educational purposes.

2.2. In terms of mobiles games played by the respondents

The results of the descriptive analysis of the Mobile Games revealed ML has the lowest mean value of 2.7, followed by Minecraft (2.9), COD (2.9), COC (2.9), and Axie Infinity (2.9). The average mean of all mobile games is 3, showing that most students do not use them for either educational or non-educational purposes. When compared to the averages, the standard deviations are also minimal, especially for ML with the most played mobile game and Axie Infinity with the least played, showing that there is little heterogeneity in students' use of these mobile games.

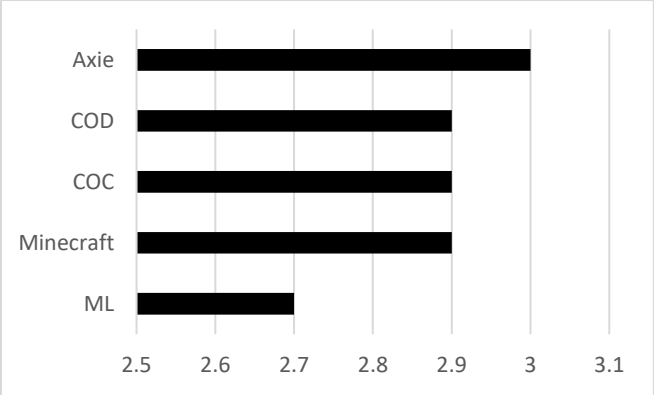

Figure 4. Mobiles games played by the respondents

In general, the results suggest that roughly all fourth-year BSEd-Science students at Leyte Normal University do not play mobile games with an average mean value of 3 for either educational or non-educational purposes.

2.3. In terms of LMS used by the respondents

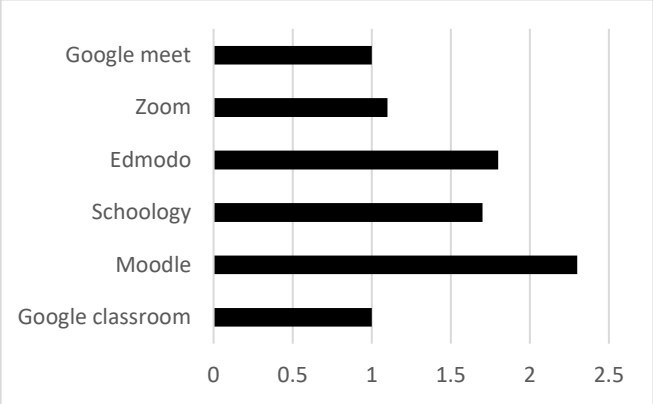

Figure 5. LMS used by the respondents

Per the descriptive analysis of Learning Management System (LMS), Google Classroom has the lowest mean value of 1.0, followed by Google Meet (1. 0), Zoom (1.1), Schoology (1.7), Edmodo (1.8), and Moodle with the highest mean value of 2.3. Also, the standard deviations for Google Classroom, which are the most extensively used for educational activities, and Moodle, which is the least widely used, are both small in relation to their respective means. This implies that students' use of digital tools is very consistent over time. In general, the results suggest that Google Classroom, Google Meet, and Zoom, all of which have an average mean value of 1, are the LMS that almost all fourth-year BSEd-Science students at Leyte Normal University utilize for educational purposes.

2.4. In terms of social media used by the respondents

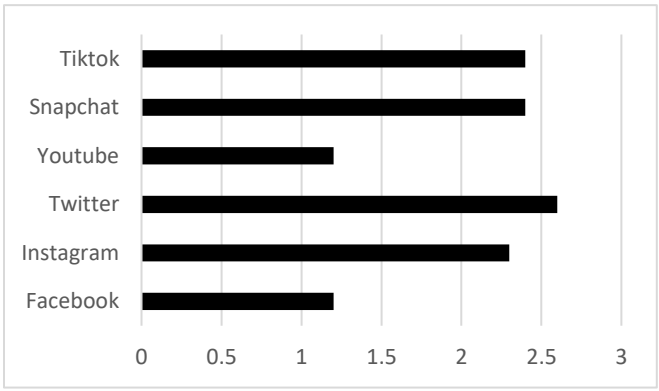

Figure 6. LMS used by the respondents

The descriptive analysis of social media indicates that YouTube and Facebook have the lowest mean value of 1.2, followed by Instagram (2.3), Tiktok (2.4), Snapchat (2.4), and Twitter with the highest mean value of 2.6. The standard deviations are small in relation to their respective means, especially for YouTube, which is the most prominent, as well as Snapchat and Twitter, which are placed last among other social media sites. In general, the results show that YouTube and Facebook, with an average mean value of 1, are often utilized for educational purposes by nearly all fourth-year BSEd-Science students at Leyte Normal University.

The overall results in the fourth-year BSED Science students' digital technology involvement, show that their purpose of utilizing specific digital technology under devices and LMS is for educational purposes, with the exception of mobile games, which they use either for non-educational activities or not at all. Devices and LMS have been

highly significant for students' online learning, which is parallel to the claims of Brush (2019) that students may be able to use interactive aspects such as threaded chats, videoconferencing, and discussion forums utilizing this learning management system. Social media, on the other hand, is revealed in this study that is being used for both educational and non-educational purposes. This finding is consonant to the study of Ansaei and Khan (2020) who believe that students at academic institutions can use social media platforms to engage with their mentors, access their course materials, customize them, and build student communities. Thus, the result of this study indicates that students were exposed to a variety of digital technologies that were immensely helpful to their online learning.

3. Frequency of Use of Digital Technology

3.1. In terms of the use of devices

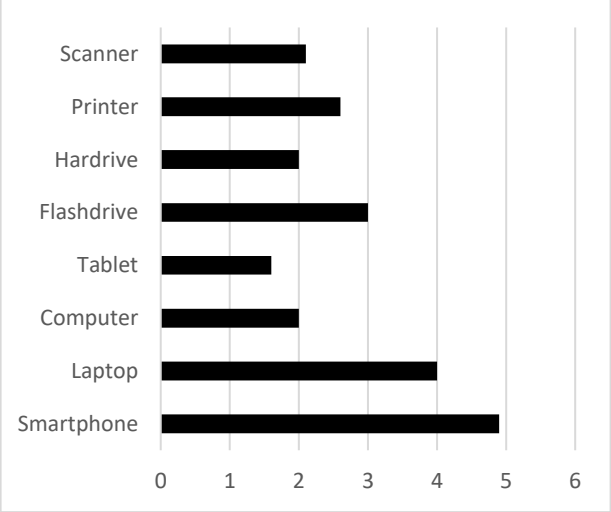

Figure 7. Frequency of the use of devices

As per the descriptive statistics of devices, the Smartphone is the most used device with a mean of (4.9), followed by Laptop (4.0), Flash drive (3.0), Printer (2.6), Scanner (2.1), Computer (2.0), Hard drive (2.0), and Tablet with a mean of (4.9). (1.6). The statistical results of the devices used by the respondents reveal that the smartphone has the highest average of 5 compared to other devices, implying that it has been used on a regular basis by all students at Leyte Normal University. It's worth noting that the standard deviations are minor in comparison to their respective means, particularly for smartphones, which are the most used and tablets, which are the least used. This suggests that students' use of digital devices varies on average. Hence, findings suggest that the use of smartphones, laptops, and flash drives are regularly and occasionally utilized by practically all BSEd Science students at Leyte Normal University.

3.2. In terms of the use of LMS

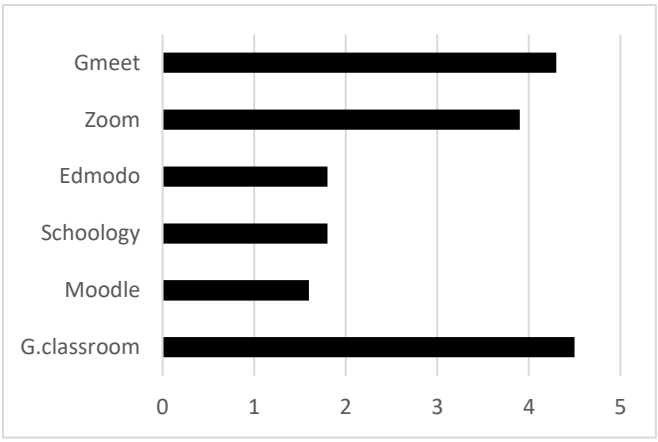

Figure 8. Frequency of the use of LMS

The data descriptive analysis of Learning Management System (LMS) revealed that Google Classroom was the most used LMS, with a mean of (4.5), followed by Gmeet (4.3), Zoom (3.8), and Schoology (1.8), and Edmodo (1.8). Moodle, on the other side, was the least used, with a mean of (1.6). A detailed computation of all respondents in a Learning Management System (LMS) revealed that Google Classroom has the highest mean of (4.5) when compared to other LMS, indicating that it has been utilized on a regular basis by all students at Leyte Normal University. In general, the standard deviations are small in comparison to their respective means, particularly for Google Classroom and Google Meet with the most often used LMS. This demonstrates that students' use of digital devices varies greatly. Thus, the statistics

above infer that Google Classroom and Google meet are utilized regularly by almost all BSEd Science students.

3.3. In terms of the use of Mobile Games

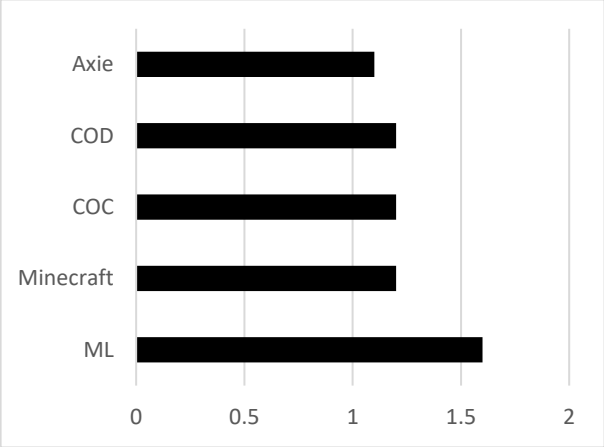

Figure 9. Frequency of the use of Mobile Games

Moreover, based on the descriptive data of mobile games, Mobile Legends (ML) was the most played among the rest with a mean of (1.6), followed by Minecraft (1.2), COC, and COD with a mean of 1.2. Axie Infinity, on the other hand, was the least popular, with a mean usage of 1.1. This means that practically all BSED students at Leyte Normal University responded "never" when asked how frequently they utilized or played mobile games. The standard deviations are also revealed to be relatively small in comparison to their respective means, especially for COC and Axie Infinity, the two lowest-rated mobile games. This shows that students' approaches to these mobile games are similar. As a result, the overall interpretation indicates that most respondents answered "never" when asked how frequently they play these mobile games. This indicates that BSEd Science students are ineffective mobile game app users.

3.4. In terms of the use of Social Media

The findings of the descriptive data analysis of social media, it was revealed that Facebook was the most popular social media platform, with a mean of (4.6), followed by Youtube (4.1), Instagram (3.0), Tiktok (2.0), and Twitter with a mean of (4.6). (2.0). Snapchat, on the other hand, was the least used, with a mean of (2.0). Facebook has the highest average of (4.6) when compared to other social media, indicating that all students regularly utilize it at Leyte Normal University.

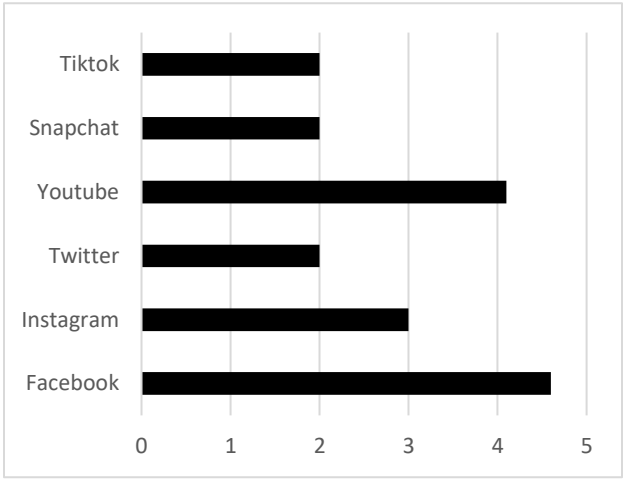

Figure 10. Frequency of the use of Social Media

The standard deviations are also found to be minimal compared to their respective means, particularly for Facebook, which is the most used, and Snapchat, which is the least used. This suggests that Facebook, YouTube, and Instagram are all favorably effective tools for each of the students and are frequently used constantly by almost all BSEd Science students at Leyte Normal University.

4. Effect of Digital Technology on Learning

Figure 11 displays the simulacrum of the four major themes extracted from the thematic analysis of the transcribed interviews. The solid line that connects the circles indicates the experiences of the BSED-Science students experiences in using digital technology. These experiences regarding digital technology are as follows: it allows room for more distractions, disturbs mental health, is a powerful means of

communication, and technological deficiencies hinder learning.

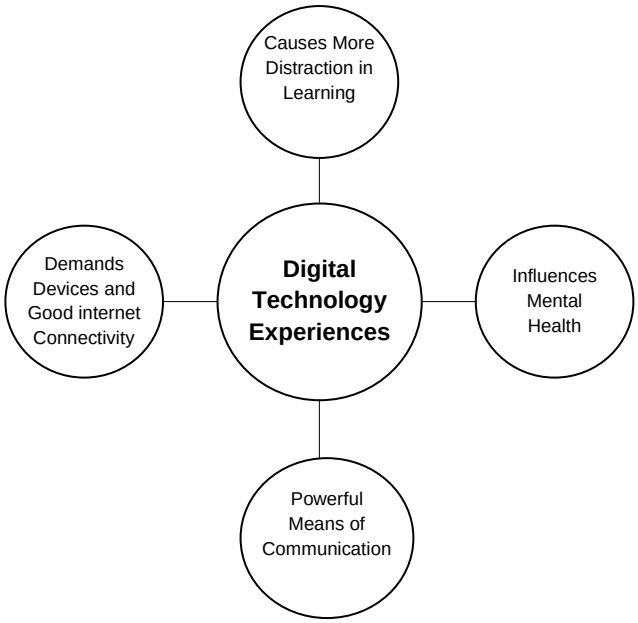

Figure 11. Simulacrum of the digital technology experiences of the BSED students

4.1. Digital Technology Allows Room for More Distraction

The distraction arises because the technology used for online learning is also the same technology used for their personal social life and for their leisure activities. As interview participant 13 stated, "Sometimes, I use cellphone and laptop for gaming, movies and watching Netflix, so definitely it has a negative effect to my online learning because there are times that I set aside my paper works because I prefer to play games and watch movies." Another statement coming from participant 5 supports the aforementioned theme, in the statement the participant said, "In a sense that it [digital technology] affects my focus in studying. For example, instead of doing my school related tasks I most of the time opt to surf or browsing to my other social media accounts and in playing online games." The theme is also aligned to Dontre (2020) claims that the detrimental effects of academic distraction have become increasingly problematic in recent years due to student media multi-tasking. Digital Technology allows rooms for distraction of learners' academic performance by the three forms of technology distraction: laptops, smartphones, and social media use, particularly the social media platform Facebook. Online learning is mostly accompanied by distraction by time to time to the presence and availability of digital technology to learners.

4.2. Digital Technology can Disturb Mental Health

From the exhaustive assessment of assembled information from the interview, it was found that the students without a doubt encounter negative impacts on their health, especially to their mental well-being in utilizing digital technologies amid online classes. Out of 12 interviewees, 8 of them stated they are experiencing eye strain and minor headaches as the cause of frequent utilization of digital technology. Participant 3 states "digital technologies affect my mental health, lifestyle such distortion of sleeping patterns, too much exposure of radiation". While participant 9 said "due to my usage of electronics, I am missing sleep or neglecting physical activity. It's causing me to worry or anxiety, or I'm experiencing bodily symptoms like tension headaches, eye strain, muscular discomfort, or overuse injuries that I can't seem to get rid of". Participant 11 also said "digital technologies expose me in a long period of time to laptop screen radiation and brightness that may harm my eyesight".

This finding is in line with the findings of other studies. The first is a study by Qadrijati et al. (2020), which claimed that electromagnetic radiation from cellular phones and laptops caused subjective symptoms such disrupted sleep quality, headaches, dry eye syndrome, and impaired focus among UNS informatics students. The second study, "No More FOMO: Limiting Social Media Decreases Loneliness and Depression," by Hunt et al (2018), indicated that Facebook and Instagram usage are both directly and indirectly linked to depression symptoms. It further claimed that more Facebook usage has been linked to reduced self-

esteem and loneliness across groups of the society. The third and final study, conducted by the American College Health Association (2016), discovered that students truly experience the following issues: "felt so depressed that it was difficult to function," "felt overpowering anxiety," "felt exceptionally lonely," and "felt things were hopeless." Studies show that advanced innovation habit has been connected to sadness, moderate self-esteem, and prevalent forlornness – side effects.

4.3. Digital Technology can be a Powerful Means of Communication

After a thorough evaluation of the data gathered during the interview, it was discovered that fourth-year BSEd-Science students also use digital technologies for communication. "It [digital technology] aids me in building connection with my classmates and teachers and provides a convenient way of communicating them," said Participant 2. This concludes that these students utilize smartphones to communicate with their classmates and teachers. Participant 12 also said, "this kind of digital technology I used during online class helped me to connect with my classmates, attend virtual classes, receive messages from our instructors, and upload assignments online." These data revealed that the respondents use devices such as smartphones, laptops, and computers to share or exchange information with one another. They used it to communicate with their classmates and instructors, and it was also vital for them to be able to attend classes and submit assignments online. These findings are supported by quantitative data, which revealed that respondents also use technological devices such as smartphones and social media sites such as Facebook for non-educational purposes, demonstrating how powerful communication tools such as smartphones and social media sites like Facebook have become in today's world (Tufts University Relations, 2013).

Moreovet, these findings are also aligned to the studies of Haggman (2017) titled "Connectivity, Communication, and Technology" and "Engagement Theory" of Kearsly and Shneiderman (1998). According to Haggman (2017), digital messages using digital technologies are now the primary means of written communication in today's generation and being connected to the internet allows people to communicate with more people in different locations in a direct and immediate manner, which promotes engagement. While Engagement Theory of Kearsly and Shneiderman (1998) believed that digital technology could facilitate many forms of engagement that are difficult to achieve without it. According to the theory, students are more engaged and devoted to their teachers' learning activities when they interact and communicate with them through digital technology.

4.4. The Demand for Devices and Good Internet Connectivity Hinders Learning

Quantitative data regarding the respondents' usage of devices shows that 68% of the respondents do not have desktops to use for online learning. However, although most of them do not have desktops, 93% of the respondents do have laptops to use for online learning, and roughly 97% of the respondents have mobile phones. This means that one or two devices are required to submit requirements, engage in synchronous sessions, and communicate with instructors and classmates in an online learning environment, which is relevant to Participant 9's response, "In this new normal, all I can say is that I am not flexible in engaging in the class if I don't have these digital technologies and lack of digital learning platforms."

Another issue pertaining online classes arises from the need for good or stable internet connection. Participant 8 stated "In my case, it was really hard [using digital technology] due to slow internet connections and power interruption" while participant 12 exclaimed "I have experienced a lot of troubles and challenges during the online learning because of poor internet connection, financial problems, and other personal matters". This showed how having good or stable internet access would really help them do well and attend to their online classes. Having the devices necessary for online learning is not enough to get

through, because internet connectivity should also be taken into consideration.

Responses from the interview questions regarding the negative effects of digital technology in learning and whether these digital technologies increase their ability to learn reveals that their internet connectivity is somewhat a main problem limiting them to perform well in class. As one responded, "Due to slow internet connection, I find it hard to catch up with my classmates, which also hinders me to give my full potential." And participant 3 also said, "I think using digital technology does not increase my ability to learn because there are many distractions that I encounter along the way. I cannot do multi-tasking such as listening to the webinar while writing paperwork because in each task or situation it needs focus and attention. Plus, the factor of the internet connection keeps me waiting for a long period of time. Buffering and connecting that is still time-consuming."

This finding is parallel to the study of Malamud et al. (2019) which revealed that internet access affects the achievement and cognitive skills of children. It was believed that if there is lack of educational resources, providing access to educational websites with subject-specific content could help improve the cognitive skills of children and that children can access various educational resources such as e-books and other reading materials such as newspapers, blogs, and online encyclopedias. Hence, if access to the internet is denied, learning will not occur.

CONCLUSION

This study concludes that fourth-year BSEd-Science students at Leyte Normal University use a number of digital devices on a daily basis. Devices such as smartphones and laptops, LMS such as Google Classroom and Google Meet, mobile games such as Mobile Legends, and social media sites such as Facebook and YouTube are some of their regularly utilized digital technologies. Students used digital technology devices and LMS for instructional purposes, whereas mobile games and social media sites were used for non-educational purposes.

Furthermore, some claim that incorporating digital technology into online learning encourages greater communication between the teacher and the students; others contend that digital technology is an ineffective learning aid, a source of distraction, and has a negative impact on learners' mental health and learning. Taking all of these experiences into account, this study comes to the definite conclusion that the impact of digital technology on students' online learning can be either favorable or detrimental, depending on the students' experiences, perspective or attitude, and utilization.

RECOMMENDATION

Based on the study's findings and conclusion, the researchers recommend the following: Students should use this study as a guidance to avoid the adverse effects of digital technology on their online learning. Reading this study may also serve as a pivotal moment for them to become more responsible and self-directed learners.To encourage digital technology literacy among students, school administrators may invite digital technology professionals to offer seminars or lectures on the proper use of digital technology in education. They should also urge teachers to develop a technologically oriented classroom where students may learn how to use digital technology appropriately and efficiently.Teachers should modify their teaching strategies to be more technology-integrated in order to increase student engagement in the classroom and improve online learning. Implementing digital technology-based pedagogical approaches can also provide students with the freedom to solve challenges individually and collectively. Future researchers may use this study as a baseline for their research on the effects of digital technology on student online learning could design interview questionnaires that are more focused on the student's experience with digital technologies, as this would provide a better understanding of their experience and attitudes toward using digital technologies for online learning. This would also help to decrease the confusion and comparison of the impact of students' use of digital technologies in online learning versus traditional learning. It is also

recommended that they observe students when they use digital technology, since this may show whether their actual use reflects their attitudes and what real issues they encounter. This would also allow for a more in-depth knowledge of the student's experiences with digital technology in the context of online learning.

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Quinnie M. Doblon was born in Tacloban City, Philippines. Growing up she had been very interested in participating in various organizations and when she went to college to pursue education and major in Teaching Science, she became a Red Cross Youth and Peer Support Staff volunteer. Participating in organizations keeps her motivated in studying. Despite the challenges in finishing studies in the midst of pandemic where it keeps her home and demotivated, this leads to curiosity on the "Digital

Technology Experiences of BSED-Science Students in a State University" which became her first-ever paper to publish together with the other researchers.

Cristine Mae Golez is spending her life as a student for almost 1 decade and 7 years and now approaches her dream as brave as a tiger as she is one more step closer in her dream. Despite all the down floor challenges, she pursues her studies competitively and was awarded as NCII holder in 2 areas of career which consider one of her achievements. For her, being in a university is an opportunity that leads her to the front-line success as an undergraduate research expert part of the International Multidisciplinary Research Journal ready to share her paper to the world.

Alvin John G. Pening was born in the Pearl of the Orient Seas, in the Philippines. Despite of various challenges in life, he never gives up and continues to pursue his dream, which is now soon to be achieved after a long journey of being a student. Because of his love for teaching and curiosity about the world he developed the passion on being a future Science Teacher as one of his achievements was being at the top of the national physics tournament after competing with other universities. There are many more to mention however, to know me better and my colleagues, our paper will definitely take you a journey where you will have a deep connection to us as you dive in our paper.

Jason C. Villanueva received both his junior high school (2016) and senior high school (2018) education from Scandinavian National High School. Graduated as the top of his senior high school batch. He then attended Bachelor of Secondary Education program major in General Science at Leyte Normal University where during his freshman year, he was selected as one of the delegates of the University to a regional science competition and was also awarded as a Dean's Lister during the same semester. He is primarily inclined towards physics literature specifically in the realms of modern physics, where he hopes to formally study in an institution.

Mark Robe M. Lugas is currently a fourth-year college student taking up Bachelor of Secondary Education Major in Science at Leyte Normal University, Tacloban City, Leyte Philippines (expected to graduate this May or June, 2022). He has his fascination in the field of science, specifically in Chemistry and Biology. He believes that teachings in science give more value in understanding and in giving immediate response to sudden stimulus or event which could make abrupt changes to various aspects in life (just like the huge changes brought by the current pandemic globally). He has conducted research, his first paper soon to publish with his fellow researchers which aimed to help in understanding the students' digital technologies experiences during their online classes in time of this pandemic. As you delve on his research, you will be able to connect with him thru this study.

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