EXPERIENCED DIFFICULTIES IN THE E-LEARNING ENVIRONMENT DUE TO THE COVID-19: AN ASSESSMENT OF ACADEMIC DEVELOPMENT

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ABSTRACT
This study seeks to present and confer the Experienced Difficulties in the E-learning Environment Due to the COVID-19 of the allied health students from 1st year- 4th year which bring negative effects to their learning capability.

The researchers will conduct a survey to gather fundamental information that is necessary for data collection, such as the demographic profile of the respondents and questions on the students' concerns and aspects of the Cognitive, Affective, and Psychomotor domains.

Furthermore, the researcher strives to answer the questions why and how do the learning capabilities of the learners have been affected by the limitations due to the COVID-19 and determine the coping mechanisms that could be suggested to the learners.

Keywords: Difficulties, E-Learning Environment, COVID-19, Academic Development.

1. INTRODUCTION

On the 31st of December 2019, Coronavirus disease 2019 (COVID-19) was officially reported by the World Health Organization. It is identified first in the city of Wuhan, China. Later on, WHO declared that COVID 19 is a global health emergency as it had spread already to dozens of countries, declaring it as a pandemic. It had forced every country to impose travel bans and restrict the movement of the people. According to the World Health Organization, there have already been 227,586,983 confirmed COVID-19 cases and 4,678,606 deaths around the world as of September 17, 2021. Since then, the lives of the people and the society at large which include the economy, health care, tourism, and education have been affected. UNICEF-UNDP stated that in the National Capital Region in the Philippines, COVID-19 has impacted the society starting with the household level such as employment, income, food security, food consumption, mental health, education, social protection, and gender equality.

Besides the casualties, the COVID-19 pandemic has a multidimensional impact globally and a large number of students are deprived of their education. The Pandemic contributed to closure of more than 90% of world's schools (Strauss, 2020). In the Philippines, classes were called off since March 14, 2020 as a preventive measure to curb the spread of the virus and protect the welfare of the students. As the classes were suspended, the transition from face-to-face classes into an online mode of learning and modular learning has not been easy for both the academic faculty and the students. Many academicians considered the decision to move quickly to online or virtual class as premature in face of limited infrastructure and training. (Khati & Bhatta, 2020)

Most of the schools migrated to a new learning environment which is an online mode of learning to help against the spread of coronavirus disease 2019 (Covid-19), face to face classes to Online classes transition did not go smoothly to most schools and universities, since it happens unexpectedly like how the Covid-19 affected the whole world. Because of the pandemic, e-

learning is the last resort of the educational sector to continue education amidst the pandemic without sacrificing the safety of both professors and students. Nevertheless, many schools and universities developed a new learning environment that makes the classes more convenient for both teachers and students. This new e-learning environment utilizes platform which uses cell phone, computer, or laptop.

The e-learning term started in the 1980s wherein it pertains to learning through technologies with an online interface through the use of an electronic media and widgets. E-learning uses computers that enable the delivery of data to the instructors and students and vice versa which could be utilized with various forms such as web-based learning, course learning, virtual and collaborative learning. In this mode of learning, it provides the learning environment even remotely with timely-content delivering, flexibility, delivery of data consistently, and online interactivity. It could provide various types of approaches which could give learners different ways to cope up and be adaptive. According to Khamparia and Pandey (2015), there are ways to be able to give a dynamic content to the students appropriate to their learning style such as their behavior, needs, interests and knowledge requirement in the setup of an e-learning environment.

However, everyone knows that in every system there will always be a good side and downside. Considering that the transition between face-to-face and online classes is unforeseen, a lot of factors will be needed to consider on the way the university, teachers, and students will be able to embrace the new learning environment. The transition of classes from face-to-face to online classes and the uncertainties brought by COVID-19 have resulted in additional stress for the students and instructor. Given that some instructors and students are not technological savvy. As a third world country, difficulties with E-learning environment became a vital issue for a lot of students as well as instructors wherein this digital learning is not accessible and suitable for every learner.

The online mode of learning puts students at a great disadvantage, numerous factors affect academic performance such as bad internet connections, financial issues, mental health conditions, household environment, geographical location, etc. The students have been facing technological problems and with the online mode of learning, some students' personal learning style is not compatible with it. Frustrations have been rampant also as the students missed the interpersonal relationships and school events especially graduation ceremonies. According to the study of Ghazi-Saidi, et. al (2020) Most students found remote learning not as engaging as F2F (11/17; 65%) and found online learning less productive than F2F (11/17; 65%). In describing the remote learning experience, 7/17 (41%) students liked it because they received continuous education while remaining safe, 9/17 (53%) found it challenging but had no other choice in order to be safe and 2/17 (12%) found it challenging.

The present situation challenged the education system across the world as it forced educators to shift to an online mode of teaching overnight. Many academic institutions that were earlier reluctant to change their traditional pedagogical approach had no option but to shift entirely to online teaching–learning. Now, the challenge to educational institutions is not only finding new technology and using it but also reimagining its education to help students and academic staff who are seeking guidance for an effective learning environment despite the restrictions brought by the pandemic. Learning should still promote an integrated system that will establish and support the students even in the situation of the pandemic.

Therefore, this study aims to gather the learning difficulties experienced by students which bring negative effects to their learning capability and how it affects their learning capability as

they face various challenges, and ways on how to possibly improve those aspects, so that future learners' learning difficulties will be lessened.

2. STATEMENT OF THE PROBLEM

This study will search and evaluate for the learning difficulties experienced by the allied health students of the University of the Perpetual Help College of Manila in the new learning environment due to distance learning. Given the current situation brought by COVID-19 pandemic, a lot of aspects adds up to the difficulties experienced by the student which this study will seek for answers through the following sub-questions:

1.What is the demographic profile of the students in terms of the following:

    1.1 Gender

    1.2 Age

    1.3 Study level

    1.4 Monthly Family Income

2.What are the different learning difficulties in the E-learning environment in terms of the following:

    2.1 Student Concerns

    2.2 Problems with the equipment

    2.3 Cost-effectiveness

3.How may the learning difficulties in the e-learning environment affect the students in terms of:

    3.1 Cognitive aspect

    3.2 Affective

    3.3 Psychomotor

4.What coping mechanisms can the study propose with the e-learning difficulties?

3. METHODOLOGY

The study gathered comprehensive findings on the learning difficulties in the E-learning difficulties using mixed methods wherein it is a qualitative and quantitative study to evaluate comprehensively the learning difficulties of the Radiologic Technology students in the E-learning environment and how these various difficulties affects the students in the aspect of Cognitive domain, Affective Domain, and Psychomotor Domain.

The research started to affect evaluate quantitative problems and ended up with qualitative questions to further gather data precisely and objectively. This study utilized a descriptive research design. First, the study designed a quantitative questionnaire to gather quantitative findings to determine statistically the number of students that experience learning difficulties and how it affects them in the different learning domains. Next, it used qualitative findings through open-ended questions to further strengthen the findings of the study. According to Taguchi (2018), the integration of quantitative and qualitative methods of research results in more promising results as it gives light to the significant factors in terms of context and individuality wherein it could influence the patterns observed. As a result, the study gained a mora e comprehensive understanding.

The researcher surveyed those questionnaires and conducted interviews to gather quantitative and qualitative data to support the study. Published documents have also been analyzed to further strengthen the points of the study.

Locale of the Study

The study gathered various data through primary and secondary sources. The primary sources of data are primarily from the 1st year to 4th year Radiologic Technology students at the Perpetual Help College of Manila in the academic year 2021-2022, through surveys or questionnaires, and the secondary sources are from the published studies and literature which includes articles, journals, books, thesis, and other reliable sources. The Perpetual Help College of Manila (PHCM) is the first among the many educational institutions established by the University of Perpetual Help System (UPHS). Dr. Jose de Guzman Tamayo and his wife, Dr. Josefina Laperal Tamayo, founded the Perpetual Help System in 1968, with the College of Nursing as its first institution.

Figure 2. Map of Perpetual Help College of Manila

Population and Sample of the Study

The researcher purposely selected the first year to fourth-year Radiologic Technology students at Perpetual Help College of Manila in the school year 2021–2022, with a population size of 53, because they believe that these students are the qualified respondents since they are the ones who have experienced the e-learning difficulties and they are the ones who will benefit from the results of this study.

The prepared questionnaire for the study was given to the 40 involved Radiologic Technology students, who represent roughly 75% of the total population of the college of Radiologic Technology. It deals with their demographic profile and quantitative and qualitative questions about their learning difficulties in the e-learning environment.

Table1.

Respondents	
Year level	**Respondents**
1st year	10
2nd year	7
3rd year	14
4th year	9

Table 2. Frequency and Percentage Distributions of Demographic Profile of the Radiologic Technology Students

N=40		*f*	Percentage
Age	16-20 years old	13	32%
	21-25 years old	22	55%

	26-30 years old	4	10%
	31-35 years old	1	3%
	36-40 years old	0	0%

Continuation…

Year Level

	1st year	10	25%
	2nd year	7	17%
	3rd year	14	35%
	4th year	9	23%

Monthly Family Income	1,000 – 15,000 Pesos	8	20%
	16,000 - 30,000 Pesos	11	27.50%
	31,000 - 45,0000 Pesos	12	30%
	46,000 - 60,000 Pesos	3	7.50%
	61,000 - 75,000 Pesos	6	15%

Research Instruments

In this study, the instruments that the researchers used in collecting or gathering data that tested the reliability and validity of the research study being conducted are questionnaires (rating scale), interviews, and demographic questions. According to Saul McLeod (2018), a questionnaire is a research instrument consisting of a series of questions to gather information reform respondents.

The instruments that are used are researcher-made questionnaires based on the readings on the professional literature, theories, legal basis, and foreign and local studies that are relevant to the study. The research instruments consist of four parts. Part I consists of questions regarding the demographic profile of the respondents such as their name, age, gender, year level, and monthly family income. Part II of the research instrument consists of questions about the learning difficulties of the students in the e-learning environment. Part III will focus on the questions regarding the effect of the learning difficulties on the students in cognitive, affective, and psychomotor aspects. The researchers used the Likert scale method in the second and third parts of the questionnaires. Part IV consists of written interview questions. Open-ended questions are given that allowed the respondents to give their insights related to the topic.

The instruments have undergone validation from a panel of experts, and the researcher's thesis adviser has meticulously reviewed the instruments and has provided feedback which guided the researchers in the improvement of their instruments.

Data Gathering Procedure

The researchers made a letter for the approval to conduct the study at Perpetual Help College of System, Concepcion, Sampaloc, Manila, that had been forwarded to the Dean of the Radiologic Technology Department. Attached to the letter is the approved questionnaire that is used in the data collection of the study. Afterward, the researcher distributed the questionnaires in

the form of Google form to the respondents and deliberately explained the instructions for answering the questionnaires and clarified some terms to the respondents so that the respondents can answer the questionnaire with full knowledge. The researcher also informed the respondents that all personal information and their identity are confidential to others. To comply with the Data Privacy Act of 2012; to protect the privacy of individuals while ensuring the free flow of information to promote innovation and growth.

After gathering all data needed the researchers sought help from a statistician in determining the appropriate statistical tool that is used and in interpreting the data. Based on the result data, the researcher came up with coping mechanisms for the learning difficulties of the students in an e-learning environment.

Data Processing and Statistical Treatment

After gathering and collecting data through questionnaires, surveys and interviews, the data are collated in a datasheet, and evaluated analyzed, cross-tabulated, and interpreted quantitatively and qualitatively using the following statistical treatment. According to Pandey (2021), interpreting the data collected gives light and understanding to the data's implications, and will provide the significant meaning of the material regarding the purpose of the study being focused.

The scale and descriptive equivalent are based on the self-made questionnaire which evaluated the relative frequency of the learning difficulty that is most experienced by the learners in terms of student concerns, and what learning domain is mostly affected by the learning difficulties. The range of the Likert scale is determined wherein the average of the responses is computed

Numerical Rating	Range	Verbal Interpretation
5	4.21 – 5.00	Always
4	3.41 – 4.20	Often
3	2.61 – 3.40	Sometimes
2	1.81 – 2.60	Rarely
1	1.00 – 1.80	Never

1. **Frequency Array** – direct method is used to compute the weighted mean of the quantitative data of the study. The weighted mean of the data will determine the distribution of responses and present the data in a table.

Formula:

Where: f= Frequency

$\sum f$x= Sum of all values of fx

2. **Simple Array** – direct method is used to compute the graded mean of the quantitative data of the study. The graded mean of the data will determine the distribution of responses and present the data within a table.

Formula:

Where: $\sum$x = Sum of all values of x

N = Number of respondents

4. RESULTS AND DISCUSSION
Summary Of Findings:

This section states the summary of the study's findings. The primary research problem is: What are the different experienced difficulties of the students in the E-learning environment and how these difficulties affect the students with the different learning domains? The study utilized both quantitative and qualitative methods to obtain significant findings.

1.What are the different learning difficulties in the E-learning environment in terms of the following:

1.1.Student Concerns

The findings based on the gathered data of the study show that most of the students' concern is the difficulty with loads of activities given to them which signifies that most of the students are struggling with the abundance of activities given to them wherein it might be because of the conflict with their household and school responsibilities. Next, the students are also being disturbed by the household condition and responsibilities. Students are also experiencing difficulties with having a conducive learning area. Students are also experiencing difficulty due to their geographical location which can have poor signal and frequent brownouts that hinders the students to attend classes. The least difficulty that students are also experiencing is being affected by the limited social interaction with their classmates and instructors. Moreover, according to the qualitative findings that the study gathered, most of the students expressed that they are having difficulties with the overload of activities that affects their learning experience.

1.2.Problems with the equipment

The findings based on the gathered data show that most of the students' problems with the equipment are with their poor internet connection, which signifies that the majority of the students are experiencing poor internet connections that vastly affect their learning experience negatively. Students are also having problems with the overheating of their gadgets due to long hours of online classes. Furthermore, students stated that they have no backup mobile data they can use in case of an unexpected internet interruption. In addition, students also experience slow and lagging on their devices, which negatively affects their learning experience. Lastly, the least students' problems with the equipment are the availability of gadgets that they use for attending online classes and doing school activities. Furthermore, according to the study's qualitative findings, most students stated that a poor internet connection hurts their learning experience.

1.3. Cost-effectiveness

The findings based on the gathered data of the study show that most of the students have a higher electrical consumption due to online classes which signifies that due to the amount of time the students spend time on their laptops, computer, or cellphone when attending online classes and accomplishing schoolwork, their electrical consumption drastically increases. Moreover, the students are also experiencing financial issues to cope with the school fees and other online class-related expenses. The students are also experiencing difficulty with providing the appropriate equipment due to its high cost. Furthermore, the students are also having insufficient daily allowance to cover their data connection. The least experienced is having difficulty in sustaining payment with the internet connection. Furthermore, according to the study's qualitative findings, the majority of students experienced an increased in electricity bills due to long-time use of their gadgets in attending online classes and doing school activities.

2. How may the learning difficulties in the e-learning environment affect the students in terms of:

2.1 Cognitive aspect

Based on the quantitative findings of the study, the majority of the students are being affected cognitively as the students are not able to absorb the lesson due to overburdened activities which signifies that the overburdened activities affect the students as they tend to focus more on the deadline and loads of activities that need to be accomplished on time. Moreover, the students are also unable to comprehend the lessons due to surrounding noise. The students are also having trouble outsourcing knowledge due to insufficient access to library resources. Furthermore, the students are also having trouble in gaining and retaining knowledge from laboratory subjects in an E-learning environment. The least difficulty experienced based on the survey is having a hard time understanding the entire lesson on synchronous classes due to interruption caused by poor internet connection. Additionally, based on the qualitative findings of the study, most of the students have been affected cognitively in terms of retaining and absorbing the lessons due to the various difficulties that the students are experiencing.

2.2 Affective

Based on the quantitative findings of the study, most of the students are suffering anxiety because of overloaded activities which indicates that it is often experienced by the students. This signifies that the deadlines and number of activities make the students anxious as they get overwhelmed. Moreover, students are also experiencing stress due to disturbance in an unfavorable learning environment. In addition, the students are also frustrated due to the household duties that interferes with their time for school activities. Students are also having a hard time being continuously motivated on studying due to less peer interaction. The least is the students are experiencing emotional stress due to financial problems. Additionally, based on the qualitative findings of the study, it supported the qualitative findings that the students are experiencing anxiety as the activities pile up with the household chores, living in a rural area where there is no consistent reliable internet and data connection, and due to the worries for their future career as this e-learning environment resulted to having less competence.

2.3 Psychomotor

Based on the quantitative findings of the study, the majority of the students are having a hard time executing the skills due to the lack of actual laboratory classes which signifies that the students are unable to practice and learn the skills proficiently as there is no proper training, room, and equipment available for them to practice and apply the psychomotor of learning wherein the naturalization of skills is hard to attain without these aspects. Moreover, the students are lacking also in actual laboratory demonstrations. The students are also having insufficient actual laboratory activities to learn the skills and theories. Students are also less engaged in online classes as a result of the various hurdles such as poor internet connection and household interruptions. Also, the students are also having difficulty in practicing the skills due to no proper laboratory equipment at home. Furthermore, based on the qualitative findings of the study, it supported the qualitative result of having a hard time learning the actual skills without actual laboratory classes as there is no instructor that could guide them in real-time if they are demonstrating the skills properly and having an instructor that will first actually demonstrate the skills that the students can actively follow. Without this, retaining the laboratory lessons will be more challenging.

5. CONCLUSION

The researchers were able to formulate this conclusion based on the findings of the study:

Majority of the students from 1st-year year 4th-yearear Radiologic Technology courses are experiencing several learning difficulties in their online learning, such as overload of activities,

poor internet connection, problems with the equipment, power outages, and the effects of the said learning difficulties in their cognitive, affective, and psychomotor aspects. It has surfaced from this study that the overload of activities has a huge impact on the students' mental health. The majority of the students claimed that due to the overload of activities, they became more stressed and anxious. Furthermore, students stated that due to anxiety caused by the overload of activities, their academic performance is vastly affected in a negative manner negatively. Therefore, colleges should provide a stress management program that can be contacted through email and a contact number. Wherein students can seek help and assistance in managing the stress and anxiety that the overload of activities and other life responsibilities causes them.

6. RECOMMENDATIONS

This study was able to grasp the learning difficulties of students in the e-learning environment and to minimize such difficulties, the following recommendations are proposed based on the study's results and conclusion to ease the students' difficulties.

1. Students who are experiencing difficulties with an overload of activities should learn how to utilize a study or day planner to efficiently organize their time between school activities and household responsibilities. As a result, they will be able to complete their assignments on time and will not overlook activities that must be completed.

2. The College of Radiologic Technology should provide a "Connectivity in the Philippines" seminar and open forum that tackles the difficulties brought by the internet connection and poor signal in the Philippines for the awareness of the students, faculty, and administration wherein supports and alternatives could be tackled and for the understanding of each faculty member and the administration. Therefore, end solution for the students and faculty could be developed in a Perpetual help student student-centered.

3. Students who have higher electricity bills as a result of using their laptops, computers, or cell phones for online classes and for doing school activities should be educated about phantom loads. As a result, their electricity consumption will be reduced, and they will save money that they can allocate for their school expenses.

4. Students should not be given heavy loads of activities as it is mentally exhausting given the fact that the current situation with the COVID-19 pandemic has already affected the students' cognitive domain of learning. An interactive learning environment is more effective than having loads of theoretical tasks.

5. Stress management programs could help the students manage their affective domain of learning as it could ease the pressure and stress from the students. This involves having a counselor unit that could connect with the students and be able to assess the level of stress of each student therefore appropriate stress management programs could be given.

6. Flipped-classroom-based e-learning could effectively improve the cognitive, affective, and psychomotor abilities of the students in the E-learning environment.

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