DIGITAL TECHNOLOGY NORMS AND ONLINE LEARNING CHALLENGES OF STUDENTS

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Abstract: This study aimed to determine which domain of digital technology best influences online learning challenges of students. This study utilized the non-experimental quantitative research design using descriptive technique involving teachers in one District of Davao Occidental Division, Philippines. The study was conducted on the second semester of school year 2021-2022. Research instruments on digital technology and online learning challenges of students were used as source of data. Using mean, pearson-r, and regression as statistical tools to treat the data, the study showed the following results: the level of digital technology norms is high, the level of online learning challenges of students is very high, there is a significance on the relationship between digital technology norms and online learning challenges of students, domain of digital technology norms best influences online learning challenges of students is Responsibility.

Keywords: Digital Technology, Online Learning Challenges of Students, Educational Management, Quantitative Research

1. Introduction

The online learning modality has been around in local schools for over a year now. Despite the experience that the students in this modality have acquired, they are still baffled by some challenges which affect their learning experience. These challenges have cause students to perform low while others become unmotivated with their tasks leaving them attend online class uninterested (Hermanto & Srimulyani, 2021).

Strengthening the online engagement of students in their class requires a great deal of support in finding solutions to the issues they have in their classes. One support is to address the online learning challenges the students' experience through teaching students on the various digital technology norms. These norms when practice by the students will more likely to help them improve their coping mechanism on the on the online learning challenges they experience in their class (Chiu, Lin & Lonka, 2021).

One common challenge the students have in the online class is the poor time management. Many students cannot comply with the tasks because they attend many other tasks altogether. This poor time management resulted to lack of preparation before class making them attend unprepared or late. Teachers often complain with the students who are unable to attend classes on time as it also hampers class readiness (Heng & Sol, 2021).

Another online learning challenges that students identify is the lack competence and proficiency in using various interfaces or systems that allow them to control a computer or another embedded system for studying. As online classes require use of online tools to help increase student engagement and to sustain their interest, this has also posed a problem among the students since they have to know how to navigate the different tools to participate in the activities. There are apps and tools that may appear difficult to interface that students require enough time to get familiar so they can use them with confidence (Bdair, 2021).

In the local context, there are students who complain about the feeling of being emotionally disconnected or isolated during online classes. Some students cannot relate to their classmates and to their teachers that they think they do not belong to the class. This has added their feeling of disinterest to attend regular in the online class.

Many students also become the center of the attention of the class which makes them feel uncomfortable and this has led to their decline interest to actively participate in the discussion.

The problem-situations mentioned are the experiences of the students in the online learning challenges. The need to address the problem will ensure greater learning opportunities for the students. Hence, the researcher is prompted to conduct this study to address the knowledge gap in terms of finding relevant evidence in the local context regarding digital technology norms and online learning challenges of the students as the researcher has rarely come across with the same study on the same topic in the local setting.

Research Objectives

This study aims to find out which domain of digital technology norms best influences online learning challenges of students. Specifically, this study sought to answer the following objectives:

1. To describe the level of digital technology norms in terms of:
    1.1. etiquette;
    1.2. responsibility;
    1.3. well-being, and
    1.4. security.
2. To ascertain the level of online learning challenges of students in terms of:
    2.1 Self-regulation challenges;
    2.2 Technological literacy and competency challenges;
    2.3 Student isolation challenges;
    2.4 Technological sufficiency challenges;
    2.5 Technological complexity challenges;
    2.6 Learning resource challenges, and
    2.7 Learning environment challenges.
3. To determine the significant relationship between digital technology norms and online learning challenges of students.
4. To determine which domains of digital technology norms best influences online learning challenges of students.

Hypothesis

The following hypothesis will be treated at 0.05 level of significance.

1. There is no significant relationship between digital technology norms and online learning challenges of students.
2. No domains of digital technology norms best influence online learning challenges of students.

2. Methods

This study used a correlational approach to conduct non-experimental quantitative research. A major portion of quantitative educational research is non-experimental because many critical factors of interest are uncontrollable. Because non-experimental research is such an important strategy for many researchers, it is necessary to establish a classification system for non-experimental methods that is both highly descriptive of what we do and allows us to communicate effectively in an interdisciplinary research context. Correlational research designs determine the type and extent of a relationship between two naturally occurring variables.

3. Results

Level of Digital Technology Norms

Presented in Table 1 is the level of *Digital Technology Norms* with the overall mean of 3.77 with a descriptive equivalent of *high* indicating that all enumerated indicators were oftentimes manifested. The overall mean was the results obtained from the mean of the indicators for the specific items from the questionnaire intended for this particular indicator which is appended in this study. Among the enumerated indicators, *Security* obtained the

highest mean score of 4.18 or high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I update the browser on my PC, I install and update the antivirus software on my PC, and I install and update the anti-spy software on my PC.

Responsibility obtained a mean score of 4.03 or high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I agree that network administrators have the authority to monitor computer and Internet usage, I use the computer within the timeline given by the instructor, and I am aware of copyright infringement.

The indicator *Etiquette* obtained the highest mean of 3.62 with a descriptive rating of high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I state my reasons when I disagree with something, I don't encourage online fights even if I encounter one, and I obey mobile phone bans.

Well-Being obtained a mean score of 3.28 or high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I use a footrest and an adjustable chair that supports my back when working on a computer, I make sure my eyes are parallel to the computer screen and keep them at a proper distance from the screen, and I place my keyboard properly and make sure my forearms are horizontal and my wrists are straight.

Table 1. Digital Technology Norms

Indicator	SD	Mean	Descriptive Level
Etiquette	0.53	3.62	High
Responsibility	0.60	4.03	High
Well-Being	0.58	3.28	High
Security	0.68	4.18	High
Overall	**0.78**	**3.77**	**High**

Level of Online Learning Challenges of Students

Presented in Table 2 is the level of *Online Learning Challenges of Students*. Computations revealed an overall mean score of 4.26 or *very high,* indicating that all enumerated indicators were oftentimes manifested. The overall mean was the results obtained from the mean of the indicators for the specific items from the questionnaire intended for this particular indicator which is appended in this study.

Among the enumerated indicators, *Learning Resource Challenges* obtained a mean score of 3.53 or high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I have an insufficient access to library resources, and I have an insufficient access to laboratory equipment and materials.

Technological Complexity Challenges obtained a mean score of 4.38 or very high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I am distracted by the complexity of the technology during online classes, I experience difficulties in using complex technology, and I experience difficulties when using longer videos for learning.

Table 2. Level of Online Learning Challenges of Students

Indicator	SD	Mean	Descriptive Level
Self-Regulation Challenges	0.38	4.25	Very High
Technological Literacy and Competency Challenges	0.26	4.32	Very High
Student Isolation Challenges	0.51	4.15	High
Technological Sufficiency Challenges	0.90	4.12	High
Technological Complexity Challenges	0.81	4.38	Very High
Learning Resource Challenges	0.25	4.53	Very High
Learning Environment Challenges	0.92	4.10	High
Overall	**0.88**	**4.26**	**Very High**

Technological Literacy and Competency Challenges obtained a mean score of 4.38 or very high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I resist learning technology, I am distracted by an overly complex technology, and I have difficulties in learning a new technology.

Self-Regulation Challenges obtained a mean score of 4.32 or very high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: raising my hand or answering questions in class, participating actively in small group or discussion board discussions, having fun in class, and asking questions when I don't understand.

Student Isolation Challenges obtained a mean score of 4.15 or high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I feel emotionally disconnected or isolated during online classes, I feel disinterested during online class, and I feel unease and uncomfortable in using video projection, microphones, and speakers.

Technological Sufficiency Challenges obtained a mean score of 4.12 or high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I have an outdated technology, I do not have Internet access during online classes, and I have low bandwidth and slow processing speeds.

The indicator *Learning Environment Challenges* obtained a mean score of 4.1o or high. As presented in the appended table, the mean ratings of the following items under this indicator were as follows: I experience online distractions such as social media during online classes, I experience distractions at home as a learning environment, and I have difficulties in selecting the best time and area for learning at home.

Correlations between Measures

Illustrated in Table 3 were the results of the test of relationship between the variables involved in the study. The overall correlation had a computed r- value of 0.825 with a probability value of 0.001 which is significant at 0.05 level. Doing an in-depth analysis, it could be gleaned that the indicators of *Digital Technology Norms* and *Digital Citizenship of Teachers* revealed a computed r-value ranging from .183 to .400 with probability values of 0.01 which is lesser than .05 level of significance. The significant relationship between the two variables is an indication that the increase in the level of *Digital Technology Norms* led to the increase in *Digital Citizenship of Teachers*.

Table 3. Significance of the Relationship between Digital Technology Norms and Online Learning Challenges of Students

Digital Technology Norms	**Online Learning Challenges of Students**		
	R	**p-value**	**Remarks**
Etiquette	.286	.001	Significant
Responsibility	.159	.018	Significant
Well-Being	.382	.001	Significant
Security	.464	.000	Significant
Overall	**.825**	**.001**	**Significant**

*Significant at 0.05 significance level.

Significance of the Influence of the Domain of Digital Technology Norms on Online Learning Challenges of Students

Presented in Table 4 is the regression analysis showing the predictive ability of *Digital Technology Norms* on *Online Learning Challenges of Students*. The analysis shows that when *Digital Technology Norms* was regressed on *Digital Citizenship of Teachers*, it generated an F-value of 68.71 with 0.01. The value of this regression is 68.71 with 0.01. It can be stated that *Digital Technology Norms* influenced *Online Learning Challenges of Students*. Among the indicators of *Digital Technology Norms* only one gave significant influence on *Digital Citizenship of Teachers*, which is *Responsibility*, t=2.18, P=0.001.

Table 4. Regression Analysis Showing the Extent of the Influence of Predictor Variables on Online Learning Challenges of Students

Online Learning Challenges of Students				
Digital Technology Norms	**β (Standardized Coefficients)**	**B (Unstandardized Coefficients)**	**t**	**Sig.**
	1.6468	0.4195	1.68	0.000

Constant				
Etiquette	-0.02618	0.06408	-0.1	0.623
Responsibility	0.8249	0.08259	2.18	0.001
Well-Being	0.03189	0.06195	0.01	0.593
Security	0.05273	0.06285	0.03	0.846
R	0.683			
R^2	0.497			
F	68.71			
p	0.000			

Conclusion

With considerations on the findings of the study, conclusions are drawn in this section. The level of digital technology norms is high, the level of online learning challenges of students is very high, there is a significance on the relationship between digital technology norms and online learning challenges of students, domain of digital technology norms best influences online learning challenges of students is Responsibility.

The results of this study revealed that the level of digital technology norms is high. The researcher recommends that the district where the study is conducted in Schools Division Office of Davao Occidental may conduct training that will help improve the aspects of Well-Being.
Meanwhile, the study revealed a very high level of online learning challenges of students. The researcher recommends that the district office may provide Learning Action Cell among the teachers on the topic Learning Environment Challenges.

The study found a significant relationship between digital technology norms and online learning challenges of students. The researcher therefore recommends that the District Office may consider the provision of trainings or activities relative to the variables under study to help the school heads and teachers enhance on the indicators which are among the lowest in the indicators of the variables under study.

The study found that the domain of digital technology norms best influences online learning challenges of students is Responsibility. The researcher recommends that school heads may provide sessions in Learning Action Cell among teachers for improvement.

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