

# Technostress Experiences from Online Learning

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**Abstract** The continuous development of new technologies could create many new, yet unforeseen jobs in the future. It "is a smart production method based on artificial intelligence and digital technology" however the result of multitasking in the application and continuous communication, repeated information, repeated system improvements and the resulting uncertainty, continuous re-learning and the resulting functional insecurity and technical problems associated with the ICT is the negative sides of technology for end-users. This study aimed to explore the technostress experiences and coping mechanism of participants in online learning. The participants of the research involved 26 students (2 males and 24 females) who are now enrolled in College of Teacher Education-Bachelor of Elementary Education at Quirino State University - Main Campus Diffun, Quirino. The qualitative inquiry method was used. Data were collected through focus group interviews and content analysis as data collection method. Narrative analysis was utilized. Data were analyzed by drawing on thematic analysis method that delivered key themes and patterns. Revealed in the study, the technostress experiences such as technical issue oriented, emotional aspect, and physical aspect. The findings suggest that the participants' are brought together to collaboratively overcome challenges experienced in the online space and work together to overcome technological challenges.

**Keywords:** *experiences, learning, online, technostress*

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## 1. Introduction

With the increasing digitalization, the working environment has changed massively. The continuous development of new technologies could create many new, yet unforeseen jobs in the future. It "is a smart production method based on artificial intelligence and digital technology" [1] to optimize production processes and methods; emphasizing technologies that are and will have the greatest impact of information technology and other forms of technology.

Technology has proved itself to streamline education for 21st-century students through different mobile applications. Technology is widely used by all parties of the learning process i.e. administration, teachers, parents, and students [2].

Technology can decrease paperwork, bring transparency, and facilitate distance learning. Therefore, government incentives aimed at using technology to ensure the continuation of educational path [3].

Despite the fact there are many benefits of technology, there has been an ongoing argument in understanding the negative sides of technology for end-users. Some students are suffering from what is called "technostress".

In this context, the term "technostress" has been established. Individuals experience technostress due to the use of technologies. This phenomenon is a part of the

broad spectrum of stress research. The positive impact of IT usage has been analyzed by numerous researchers. Nowadays, the focus is on the potential negative effects that influence organizational and social life [4].

Studying technostress that is resulting from online learning during Covid-19 is now a mature field that is being spun out to be investigated. This term has been studied in the literature for years by many researchers. It can be best defined as "inability to cope with new technology." [5,6,7].

Recently one of the most prominent definitions of technostress has been developed as "user stress as a result of multitasking in the application and continuous communication, repeated information, repeated system improvements and the resulting uncertainty, continuous re-learning and the resulting functional insecurity and technical problems associated with the ICT use organization" [6]. However, one of the most accepted and widely used definitions of technostress in the literature states that "Phenomenon of technostress experienced by end-users in organizations as a result of their use of information and communication technologies" [8].

Technostress has been defined as the negative psychological link between people and the introduction of new technologies. Technostress or psychosomatic illness caused by working with computer technology on a daily basis.

Some authors suggested that technostress is related to some terms like anxiety, mental exhaustion, skepticism,

and ineffectiveness that is caused by the inability to focus on the use of ICTs or their future use [9]. The demands of work that can provoke technostress are called techno-stressors or technostress creators [10].

Concerning technostress levels, little research has been conducted on this area. It can be argued that researchers have been more interested in exploring this relatively new emerging phenomenon.

In most developing countries, previously reported that barriers to educational technology integration are inadequate financial assistance, structural capability, human resources, management support, as well as behavioral factors [11].

Present-day studies examine the effect of technology on our lives. Recently, technology has become an essential pillar of 21st-century careers. Previous studies show that 21st-century employees are massively using technology in their work. Some researchers believe that workers are available to communicate and work all the time due to modern technology [12]. Subsequently, stress will increase among individuals while the level of performance will decrease.

Thus, this study further explored the technostress experiences of participants from online learning in College of Teacher Education-Bachelor of Elementary Education at Quirino State University - Main Campus Diffun, Quirino.

### 1.1. Purpose of the Study

This study aimed to explore the technostress experiences and coping mechanism of participants from online learning.

### 1.2. Research Question

1. What are the technostress experiences and coping mechanism from online learning at Quirino State University - Main Campus Diffun, Quirino?

## 2. Literature Review

### 2.1. Advantages of Technology

Studies on technology are well documented, it is also well acknowledged that the world has been witnessing a technological revolution in all fields of life, one of which is education. It is very essential to shed light on this field particularly in the light of sudden changes such as the diffusion of the global virus. This situation requires physical distance to avoid the possible dangers of the virus. Technology is a wise solution that bridges the gaps in education. Fortunately, technology is available and students can use technological information everywhere and at any time [13].

Many studies have been conducted on the advantages of online learning. Shaba [14]. indicated that learning through technology affected students positively and increased the chances to develop their levels of learning.

Evans and Fan [15] pointed out three advantages of investing in technology in the educational process. They are presented as follow:

1- The flexibility of students' learning in terms of their choices and the place of learning.

2- Enhancing the self-learning of students, they can learn whenever they want during the organization and management of their time.

3- Students can learn in a way that suits their pace without being influenced by the speed of others' learning.

Fuller [16] has confirmed the advantages of learning through e-tools, one of which is that online learning does not cost like traditional learning. It is cheaper than face-to-face learning as well as how online learning decreases the danger of cars' gases on the environment. After the pandemic has been hitting the educational system, the instructional orientations toward making the classes live [17].

### 2.2. Disadvantages of Technology

Many authors in literature have discussed disadvantages of technology. The researchers found in the literature that teachers face difficulties in employing teaching strategies and methods in e-learning, especially in distance learning through digital media such as zoom. Moreover, some teachers do not have sufficient technological knowledge [18].

Some researchers believe that teaching with technology is dehumanizing. This means that some teachers deal with their students as they are machines or robots during the learning process; without considering human basis [19].

Using the internet is on the rise, especially in the teaching fields, whether the user is a teacher, student, or family. As a result, this constitutes to become a source of concern for users that their privacy is breached and making them feel unsafe. So, teachers' and parents' concern is increasing towards students, especially towards young students, whose privacy is compromised in technology [18].

As has been previously reported in the literature, technology has negative effects on the health and physical effects of the body, especially on those who use technology constantly. In general, those effects include frequent eye strain, headache, blood pressure, back pain, stomach problems, irritability, and heart attacks [20].

Some studies indicate that persons who work constantly for long hours in front of the computer will cause stress, burnout, and a feeling tired. As a result, this reduces performance quality, job satisfaction, and continuance commitment [8].

Saal and his colleagues' study [21] indicates that a teacher can enhance social interaction and communication between himself and with his students, however, the opposite is true for students. Saals' revealed that students feel bored about the lesson with technology because of the teacher who manages the technological tool. This teacher's control will lead to a disruption in communication between students and their teacher. In another study [22], the absence of social communication between teacher and student can lead to many students deciding not to continue learning.

The results of Hornaes found that technology has negative effects on student's self-efficacy. Also, results showed that few men stated that technology has negatively affected their self-efficacy, while a third of

women showed that technology affects their self-efficacy [23].

The weakness of the infrastructure of the internet networks, the lack of technical support for any malfunction, as well as the specialists in the technological side of everything related to digital media and platforms such as Zoom and others. Teachers and students suffer from this dilemma, especially when the network is interrupted for a long time and the great pressure on the internet due to the intense and continuous use of teachers and students at the same time, as well as power cuts, or when facing any technical or technical problem in the digital platform [17].

### 2.3. Some Causes of Technostress

Over time, an extensive literature has developed on the causes of technostress. Technostress' causes are classified by researchers into several classifications, the most important of which is the [24]. classification. Meyer argued that these are the main causes of technostress a) functional characteristics b) organizational and c) personal characteristics of ICT users [25].

A series of recent studies have examined other causes of technostress. The researchers found the following to be the possible causes of technostress a) an overload of information: due to the large number of sources that provide workers with large amounts of information, this may result in a feeling of inability to know and control this information, which causes a feeling of burden [26] b) due to the availability of information and communication technology intake of smartphones and devices tablets, computers, and internet connectivity are now available at any time and place. This fact reinforces the expectation that continuous communication with employees and their response to the requests of officials and operators without interruption [27] c) the intensity of remote work [28] (d) frequent interruptions during work due to various disturbances [29] e) receiving many emails, and the low quality of email messages [30].

The majority of previous literature adopts the classification of [6] the invasion of technology for the users' lives, lack of respect for their privacy, forcing employees to work more and faster, and changing the pattern of work. Admittedly, technology users feel inadequate due to technological complexity. The loss of security sense and the fear of being replaced by those who are more proficient in using technology than they are stressing the low-skilled employees [4].

Previous research has shown that technostress causes are associated with behavioral and psychological stress outcomes [8]. Stress occurs through a virtual process where environmental demands go beyond individual resources. In this process, stress refers to psychological and behavioral responses to stress in the environment of the workplace.

TPACK show that school support had significant effects on technostress. TPACK refers to technological-pedagogical and content knowledge [31]. The TPACK theory simply refers to the skills that teachers should have in teaching their students. These skills include the ability to teach students a subject effectively using technology.

## 3. Methodology

The current study is aimed at exploring the technostress experiences and coping mechanism of participants from online learning.

### 3.1. Research Design

This study made use of a qualitative design of research. The study was designed to look deep into the participants' experiential knowledge [32]. A phenomenological research is a strategy in which the researcher identifies the essence of human experiences about a phenomenon as described by participants. Understanding the lived experiences marks phenomenology as a philosophy as well as a method and the procedures involves studying a small number of subjects through extensive and prolonged engagement to develop patterns and relationships of meaning [33]. The participants were asked to narrate their technostress experiences and coping mechanism on blank sheets of paper. The participants' responses were carefully analyzed in words. A list of coping mechanism was generated from the analysis made.

### 3.2. Research Participants and Sampling

This study involved a purposive sampling to determine the respondents who are Bachelor of Elementary Education students of Quirino State University- Main Campus Diffun, Quirino. The purposive sampling method was used in identifying the participants. This procedure purposely select participants that will best help the researchers understand the problem and the research question [34].

Out of 26 participants, two (2) of them were male and twenty four (24) were female, their ages ranging from 19 to 23 years old. They were all enrolled as full-time students taking their courses as well as taking general education courses at the same time.

### 3.3. Data Gathering Procedure

The participants were instructed to answer an open-ended question by narrating and describing in their own word their technostress experiences and coping mechanism from online learning. The researcher administered the data gathering procedure via google meet and messenger and most of the participants completed the activity in about an hour. Finally, the researcher collected the outputs and serialized them as ready for analysis. The data gathered were read and re-read to described what was common among the participants' experiences.

### 3.4. Data Analysis

In analyzing the data gathered from the participants' outputs, the researcher used the content analysis process. Content analysis is suitable in capturing the words of participants in text or written documents.

In addition, the use of content analysis especially when a researcher uses gist and analyses in a study. Gist analysis is appropriate for qualitative research since it enables the researcher to capture the meaning of the

statements made by the participants concerning the phenomenon being studied. The gist analysis was used to identify the technostress experiences and coping mechanism from online learning as perceived by the participants.

The completed sheets of paper were read several times to get an overview of their contents. The reading was done closely, repeatedly, and intently until they become familiar with its contents and were in positions to conceptualize statements made by the participants. The researcher came up with notes about the statements made by the participants. Key concepts and ideas were identified in the notes.

The researcher then re-read data and highlighted significant statements, sentences, or quotes. This process provides an understanding of how the participants experienced the phenomenon. Related statements were grouped together to form meaning units for emerging themes from the significant statements.

Key events in the participants' stories were chronologically sorted. The coding and themes determined from the data analysis were not predetermined by the researcher but emerged through the analysis process. After coding was complete, relationships were created between categories by comparing and contrasting coding from the different cases. The themes that emerged were derived from the students' experiences.

### 3.5. Validity

The researcher also utilized peer review of coding to decrease bias, with the initial coder sharing analysis with another to ensure that prior experiences with the topic did not influence the analysis process.

### 3.6. Ethical Consideration

Ethical considerations were ensured throughout the study. The participants were given an informed consent message via the social media platform and were asked to volunteer for the study understanding all the rights of withdrawal and refusal. There was no data sought which could exhibit participants' direct identity like names, telephone numbers, address, area or national identification number.

## 4. Results and Discussions

The findings revealed that the students who participated in this study discovered their technostress experiences and coping mechanism from online learning. The identification and emerging of the interesting themes relative to their experiences which the researcher classified into different categories:

#### *Technostress Experiences from online learning*

##### Theme 1: Technical Issue Oriented

Technical Issue means an issue arising regarding technical matters. Technical Difficulties are unforeseen equipment problems such as hardware failures or software bugs that make it difficult or impossible to perform a desired action.

The participant revealed, "*Nahihirapan akong magpasa ng file sa aking instructor dahil nga mahina ang internet*". ("*I experienced difficulty in submitting files with my instructor due to poor internet connectivity*").

The participant expressed, "*Isa ito sa pinakamatinding pagsubok na nangyari sa panahon ng aking pag-aaral ay ang pagkakaroon ng mahinang internet connection*". ("*This is one of the greatest trials that happened in my studies to have a poor internet connectivity*").

The above statements of the participants indicate technical issue in online class.

This supports the claim of [17], the weakness of the infrastructure of the internet networks, the lack of technical support for any malfunction, as well as the specialists in the technological side of everything related to digital media and platforms such as Zoom and others. Teachers and students suffer from this dilemma, especially when the network is interrupted for a long time and the great pressure on the internet due to the intense and continuous use of teachers and students at the same time, as well as power cuts, or when facing any technical or technical problem in the digital platform.

Despite the fact there are many benefits of technology, there has been an ongoing argument in understanding the negative sides of technology for end-users. Studying technostress that is resulting from online learning during Covid-19 is now a mature field that is being spun out to be investigated. This term has been studied in the literature for years by many researchers. It can be best defined as "inability to cope with new technology." [6].

On the other hand, as [35] described, "it is now more important than ever for online instructors to provide students with experiences that challenge their higher-order cognitive skills as opposed to simply transferring content to them"

Even so, the importance of being able to engage your viewers/listeners/colleagues using an online, sometimes not visual (e.g., teleconference) format is an increasingly important skill in the modern workplace and emphasises the importance of clear, concise, and focused communication skills [36].

The accessibility and ease of access of the online medium tends to make it an easier platform for a group assignment than providing limited or no focused support. Some of the ways that these barriers can be reduced involve regular emails (weekly from pre-semester), drop-in sessions, step-by-step instructions for how to access and use each of the platforms and technologies, overviews of how sessions will be run, expectations, ability to access information and sessions at other times, reminders for what should be prepared for each week, interactive schedules through the, user-friendly layout in Learning Management System, and opportunities for consultation (online, off-line and via email). For this reason, a number of strategies (such as those outlined above) can be incorporated that require little facilitator expertise and competency but can have significant effects on supporting students and their learning outcomes in the online space [37].

In addition, in the study, revealed that the biggest challenges to adopting the use of new technologies in Cambodia were hardware incompatibility; complexity;



language barriers; the lack of electricity, computers, Internet access, and of practice for trainees; and the inability to understand the advantages of these technologies. Naturally, in the best of all possible world [38].

On the other hand, Technology is widely used by all parties of the learning process i.e. administration, teachers, parents, and students [2].

#### Theme 2: Emotional Aspect

It is a description of the expected overarching emotional response.

The participant said, "Naranasan ko din umiyak dahil ako'y hindi maka-konek sa aking pagsusulit". ("I cried when I was not able to connect for my examination").

The above response of the participant emphasized emotional aspect. How you feel about a certain event or situation.

#### Theme 3: Physical Aspect

Physical qualities, actions, or things are connected with a person's body.

The participant uttered, "*Nakararamdam ako ng pagod na tila ba napakarami kong ginagawa ngunit ang katotohana'y nakaupo lamang ako at hawak ang cellphone ko*". ("I feel tired as if I have done a lot but in reality I just seated and holding my cellphone").

The participant also stated, "*Dahil sa sobrang paggamit ng gadget ay lagi akong nahihilo, nanlalabo ang paningin at sumasakit ang aking mga mata*". ("Due to excess use of gadget I experience dizzy, blurred vision, and eyes strain").

The above response of the participants emphasized physical aspect.

This affirms the ideas of [19], technology has negative effects on the health and physical effects of the body, especially on those who use technology constantly. In general, those effects include frequent eye strain, headache, blood pressure, back pain, stomach problems, irritability, and heart attacks.

Some studies indicate that persons who work constantly for long hours in front of the computer will cause stress, burnout, and a feeling tired. As a result, this reduces performance quality, job satisfaction, and continuance commitment [8].

On the other hand, personal factors can also impact on student access and participation in the online learning environment [39]. Commitments such as caring for young children or being called into work can affect the attendance and participation of students in regularly scheduled tutorials/live sessions.

## 5. Coping Mechanism

Stress coping skills as "the ability to apply strategies that minimize and manage the stress response [40]." However, it is believed that certain factors may allow some students to succeed academically, such as stress coping skills. Coping skills are factors that determine how a person responds to a task and how well they succeed [41].

Four main coping strategies have been outlined:

1. Problem-focused strategies facilitate to change the initial situation and reduce the technostress level.

Problem-focused coping seeks to solve or change the source of problems by gathering information, analyzing and making rational decisions to deal with a problem or challenge. [42].

Problem-focused coping as "individuals directly confronting and managing the source of their stress. Individuals prefer to deal directly with the stress by confronting, controlling, or managing stressful tasks [43]."

2. Emotion-focused coping aims to reduce or manage the emotional distress associated with problems by seeking emotional support.

Emotional coping strategy is usually practiced in the first year of undergraduate students while in later years the trend is changing towards cognitive, confrontive and painful problem solving [44].

As opined by the student community themselves, every institution needs to offer them psychotherapy sessions, trainings for reducing emotional tension and opportunities to improve social intelligence [45].

3. Technical support and creation of an open knowledge transfer (literacy facilitation) are supportive measures.

4. Skills development - The challenges of a digitized workplace can only be met if there is support and develop their skills.

Coping skills improve class attendance, participation, persistence even when faced with setbacks or failure in general, and arm them with stronger more resilient self who can lead to a much more positive learning experience [46].

## 6. Conclusion and Future Works

The study investigated the students' technostress experiences and coping mechanism from online learning. The data revealed the technostress experiences from online learning such as technical issue oriented, emotional aspect, and physical aspect. The coping mechanism such as problem-focused strategies, emotion-focused coping, technical support, and skills development.

Students are brought together to collaboratively overcome challenges experienced in the online space in the same way they might work together to overcome technological challenges together in their future work environments. The online experience could be more streamlined and smooth with using more features and functionality with the software or a greater ability to work to the existing capabilities of the software and still be able to deliver a comparable experience.

A number of opportunities to minimize student barriers to participation even with differing levels of facilitator technological confidence and competence. The importance of continued critically reflective academic practice to assure the best learning outcomes possible for all students is also emphasised in focusing on social relationship and community building in the online environment, rather than a dominant concern with the technological complexities of the online space. In doing so, some of the student anxieties and issues associated with external delivery modes may be overcome and benefit the students through the pedagogical methods employed in the online environment.

Sharing reflective experiences of assessment and delivery with others becomes an important part of enhancing student learning experiences. Ensuring that students are being equipped with knowledge and skills that are relevant, beneficial and enable them to exhibit best practice in their own future work endeavours.

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