



## Digital Stress Experienced During Pandemic by Faculty and Students of Pangasinan State University

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**Abstract** – The study aimed to identify the digital stressors using an adapted and validated survey questionnaire from Fisher *et al.* (2021) as experienced by both faculty and students of Pangasinan State University during the 2<sup>nd</sup> semester of School Year 2020 – 2021, with the end in mind of developing a framework of online learning boundaries during teaching and learning, as well as research-based principles for online classes. For faculty, ten parameters were considered as study variables, while seven parameters were considered for students as study variables.

The researcher found that both the faculty and student respondents generally ‘Agree’ that they experience digital stress during online teaching and learning. Further, the study found significant relationship between selected profile variables of both the faculty and student respondents, in at least one stress indicator, and their perception on being digitally stressed out. Furthermore, for both the faculty and students, their readiness to attend online class and their competence to use MS Teams, are found to significantly relate with their experience of digital stress. Finally, for both the faculty and students, age, gender, gadgets most used in teaching-learning and attendance to stress management related trainings, do not significantly relate with the digital stress that they experience during pandemic.

The researcher recommends a framework for implementation to reduce and or arrest the level of digital stress experienced by the faculty and students as well as the proposal to conduct a comprehensive webinar series which will present topics on ICT, data privacy act and the right to disconnect from work.

**Keywords** – stress, coping mechanisms, performance

### INTRODUCTION

The world technically is in a new form, i.e., improved, or just modified, but is changed, nonetheless. Today, even young children have learned the concept of ‘pandemic’, and covid-19 as a term probably shifts from a technical term to a street term already. People understand that we are at present in a difficult situation, and perhaps no further studies would be required to evidence the mishaps experienced by our countrymen, as social media and other online publishing platforms have been flooded with pictures and stories of thirst and hunger, loss of freedom, loss of lives, and many more. Despite all of these, learning as a process continued outside the four corners of the classroom. Obviously, the world did not stop learning, even when it is struggling.

Learning continued and was sustained even up to this time of April 2021 through the use of laptops, smartphones, and other gadgets that would permit both

the teachers and the students to virtually ‘see’ one another, much like the online learning modalities employed in several graduate schools all throughout the Philippines and for the rest of the world. The only difference is that, developmentally speaking, our elementary pupils, high school learners, and even college students, are not accustomed to learning via online – an approach which graduate school students could possibly do. One of the effects of this online learning is “stress” to both the teachers and the students, and other people engaged in it. In order to provide a solid background of this thesis, the researcher included the Abstract of Dr. Selye (Selye, 1956), the Father of Stress Theory:

‘Dr. Hans Selye was born in Vienna in 1907 and studied in Prague, Paris, and Rome. He received his medical degree from the German University of Prague in 1929 and two years later took his Ph.D. at the same university. He was then awarded a Rockefeller research fellowship which brought him to Johns Hopkins University and later to McGill University, where he



became Associate Professor of Histology. Subsequently he received honorary degrees from eight other universities. In 1945, Dr. Selye (now Professor) took up the post of director of the Institute of Experimental Medicine and Surgery at the University of Montreal, a position he still holds. In the meantime he had become a Canadian citizen. During the war he served as an Expert Consultant to the Surgeon General of the United States Army. His investigations into the problem of stress began in 1936, with a modest laboratory and restricted facilities. Professor Selye now has over 50 assistants and technicians helping him in research. He is the author of over 600 scientific papers and 12 books. Professor Selye is an active member of several scientific and medical societies throughout the world and an honorary member of numerous others. He has received several awards, including the Casgrain and Charbonneau Prize for original work in the prevention and treatment of disease.'

Clearly, 'Stress' as a concept was discovered in 1936, in a 'clinical setting'. Since this year, stress as a concept has been translated into many more types including academic stress, social stress, stress as used in Physics, and many others. The number of definitions of stress has become enormous that any person who has a rather general view of stress might get lost during the review of literature. In fact, Steele *et al.* (2019) claimed in their meta-analysis-inspired study that existing literature provides a complicated picture of the relationship between digital media use and psychological outcomes. In the modern world, Stress has become a universal explanation for human behavior in industrial society. Selye's discovery arose out of widespread interest in the stability of bodily systems in 1930s' physiology; however, his findings were rejected by physiologists until the 1970s. This analysis is framed in terms of Latour's actor-network theories and traces the translation of Stress from the animal laboratory into the narratives of modern life experience. This mapping reveals that translation was brought about by Selye's recruitment of a broadly based constituency outside of academic physiology, whose members each saw in Stress a validation of their pre-existing ideas of the relationship of the human mind and body in industrial civilization. While Selye was successful in realizing Stress as a

scientific fact, he was unable to make his institute the obligatory passage point for Stress research. Selye's notion of a universal non-specific reaction has become accepted in almost all forms of human discourse about life and health, and physiologists in the 1990s use Stress as a unifying concept to understand the interaction of organic life with the environment. However, this modern use of Stress contains none of the physiological postulates of Selye's original findings (Viner, 1999). Further, according to Lazarus and Folkman in 1984, as quoted by Fisher *et al.* (2021), the understanding of this phenomenon has changed significantly and the modern approach to the conceptualization of stress entails a transaction between the individual and the environment, i.e. 'stress as a process'.

This thesis, however, focuses on the aspect of Stress that deserves further study – the aspect of Digital Stress, which is often referred to as 'Technostress'.

The term *Technostress* was coined by, as quoted from Chiappetta (2017) the American psychologist Craig Brod in his book published in 1984 by Addison Wesley: "Technostress: The Human Cost of the Computer Revolution". The psychologist referred for the first time to the stress associated with the use of technologies and their impact on the psychological level. In the definition of Brod, the Technostress was "a modern disease of adaptation caused by inability to cope with new computer technologies in a healthy manner", meaning both computers and software.

Further, in 1997 this concept was revised and expanded by two American psychologists, Larry Rosen and Michelle M. Weil, in the book "TechnoStress: Coping with Technology @Work @Home @Play", as a result of a research lasting 16 years. In their analysis the meaning of technostress became wider indicating "any negative impact on attitudes, thoughts, behaviors or psychology caused directly or indirectly by technology", as quoted from Chiappetta, 2017.

Today, several researchers have simplified the concept of 'Digital Stress', especially in terms of teaching and learning including the definition of Pastoril (2018) that Digital Stress as any negative experience online from sending or receiving text messages, or using any interactive communication using digital devices.



The Pangasinan State University, an institution of higher learning, has shifted from classroom to digital instruction. Initial reports on stress experienced by students always resurface during meeting of its University Academic Council. However, while guidelines are in place to implement online modality of learning, the research believes that further research on digital stress – for both faculty and students – are necessary after an almost 1 year of its implementation in the University.

Finally, the findings reported by Tabisola *et al* – a preliminary report – showed that both the faculty and students of Pangasinan State University experienced similar problems on intermittent lost of internet connection, aside from the technological deprivation of some students who would need to attend online classes but with mobile phones which could not handle the specifications set by MS Teams. With that, digital stressors would happen as a consequence.

### OBJECTIVES OF THE STUDY

The study aimed to identify the digital stressors experienced by both faculty and students of Pangasinan State University during the 2<sup>nd</sup> semester of School Year 2020-2021, with the end in mind of developing a framework of online learning boundaries during teaching and learning, as well as research-based principles for online classes.

### MATERIALS AND METHODS

#### Research Design

The researcher employed quantitative-descriptive-status type of research. The study employed this design because (Camara *et al*, 2020) it attempts to observe and measure (descriptive) the characteristics of the research participants without any form of intervention or manipulation to any prevailing conditions that affect them but (status) with possibility that these characteristics may be different with other populations and with the fact that these characteristics are present to

the population under the study during the data-gathering period.

The researcher employed the survey technique to collect the data using a pre-validated and adopted survey-questionnaire of Fisher *et al*, 2021, with minor modifications. The survey-questionnaire will be converted to a google form, and the link will be administered digitally to the participants, both the faculty members of Pangasinan State University and the presently enrolled college students.

#### Sources of Data

The study gathered data from two sources: faculty, and students. Faculty, in this study, refers to faculty members of Pangasinan State University Urdaneta Campus who occupy either contractual, temporary or permanent plantilla items – with or without academic designations. Further, this referred to teaching personnel only. Students, in this study, refers to any presently enrolled student in any degree programs of Pangasinan State University Urdaneta Campus during the 2<sup>nd</sup> semester of SY 2020-2021. Further, student referred to students in either regular or irregular status.

#### Research Instrument

The study adopted a survey-questionnaire, the Digital Stressors Scale, developed and validated by Fisher *et al*, 2021. The survey-questionnaire was pre-validated by the research adviser after modifications by the researcher and was content validated. Revisions based on the pre-validation were used to integrate improvements on the instrument to ensure that each item question is contextualized to the participants. The teachers and the students had 2 different patterns of survey-questionnaires, for Part I.

The questionnaire, found in Attachment 1, is composed of 2 general parts. Part I requests information on the personal profile of both the teachers and the students which includes, for the teachers, the following variables: age range, civil status, gender, academic rank, designations, years in service, technical perception on readiness to teach via online platforms, level of expertise on the use of MS Teams, and attendance to relevant trainings on digital literacy. For the students, the following variables will be requested for Part I: age range, enrolment status, gender, technical perception on readiness to learn via online platforms, level of expertise on the use of MS Teams, and attendance to relevant

trainings for students. For Part II, slight modifications will be found in attached forms, but are generally the same in concept and context. The following variables were analyzed in Part II: Boredom, Complexity, Conflict, Control, Costs, Insecurity, Involvement, Overload, Privacy Invasion, Role Stress, Safety, Social environment, Technical Support, Unreliability, and Usefulness.

### Statistical Treatment of Data

In analyzing the data gathered from the two sets of questionnaires, the researcher made use of the Likert Scale of the survey-questions, the following points and interpretations were utilized:

| Scale | Scale of Interpretation | Interpretation    |
|-------|-------------------------|-------------------|
| 5     | 4.21 – 5.00             | Very Highly Agree |
| 4     | 3.41 – 4.20             | Highly Agree      |
| 3     | 2.61 – 3.40             | Agree             |
| 2     | 1.81 – 2.60             | Moderately Agree  |
| 1     | 1.00 – 1.80             | Disagree          |

## RESULTS AND DISCUSSION

### LEVEL OF DIGITAL STRESS OF FACULTY- AND-STUDENT-RESPONDENTS

The faculty and student respondents were asked through a simplified survey questionnaire adopted from Fisher et al. (2021). Table 3 shows the comparative mean results for both the faculty and student respondents.

**Table 3. Mean, Standard Deviation and Descriptive Equivalent of the Digital Stress Experienced by Student (n=131) and Faculty Respondents (n=37)**

| STUDENTS (n=131) |      |     |    | Digital Stress Indicators  | FACULTY (n=37) |      |     |
|------------------|------|-----|----|--|----------------|------|-----|
| M                | sd   | Eq. |    |  | M              | sd   | Eq. |
| 3.04             | 0.98 | A   | 1  | Due to ICT I have too little to do.  | 2.84           | 0.90 | A   |
| 3.17             | 0.98 | A   | 2  | Due to ICT my work is too monotonous.  | 2.95           | 0.78 | A   |
| 2.98             | 1.07 | A   | 3  | I often find it too complicated to accomplish a task using the ICT that are available to me at work.   | 2.95           | 1.00 | A   |
| 3.20             | 1.09 | A   | 4  | I often need more time than expected to accomplish a task using the ICT that are available to me at work.  | 3.05           | 1.03 | A   |
| 3.21             | 1.09 | A   | 5  | ICT enables private problems to reach me too often at work.  | 3.19           | 0.81 | A   |
| 3.34             | 1.06 | A   | 6  | ICT enables work-related problems to reach me too often at home.   | 3.24           | 0.80 | A   |
| 3.14             | 1.08 | A   | 7  | I think it is bad when ICT dictate how I should do my work (e.g. when work routines are highly penetrated by ICT).                               | 2.97           | 0.87 | A   |
| 3.24             | 1.02 | A   | 8  | I think that I am too dependent on ICT at work.  | 3.11           | 0.81 | A   |
| 3.41             | 1.09 | HA  | 9  | I have to invest more time into the adaptation of ICT to my individual needs that I would like to.   | 3.19           | 0.81 | A   |
| 3.42             | 0.97 | HA  | 10 | I think that the time needed to adapt ICT to my individual needs is worth it.  | 3.41           | 0.79 | HA  |
| 2.57             | 1.35 | MA  | 11 | I think that my job/class position is threatened due to ICT.   | 2.54           | 0.93 | MA  |
| 2.61             | 1.32 | A   | 12 | I feel that it is threatening that my job/class could be accomplished in an automated fashion due to ICT.  | 2.54           | 0.93 | MA  |
| 2.94             | 1.06 | A   | 13 | If decisions are made in my work environment to use new ICT or replace existing ICT that I am getting too much involved in the decision process. | 2.97           | 0.87 | A   |

*To be continued in the next page.*  
Table 3 Continued

|             |             |          |    |  |             |             |          |
|-------------|-------------|----------|----|--|-------------|-------------|----------|
| 2.89        | 1.08        | A        | 14 | If decisions are made in my work environment to use new ICT or replace existing ICT than I am getting sufficiently involved in the decision process. | 2.95        | 0.74        | A        |
| 3.52        | 1.13        | HA       | 15 | Due to ICT I have too much to do.  | 3.32        | 0.85        | A        |
| 3.39        | 1.19        | A        | 16 | Due to ICT I have too large variety of different things to do at work.   | 3.35        | 0.82        | A        |
| 3.43        | 1.05        | HA       | 17 | I fear that my use of ICT is less confidential that I would like to.   | 3.32        | 0.85        | A        |
| 3.59        | 1.10        | HA       | 18 | I fear that I can be more easily monitored due to ICT than I would like to.  | 3.29        | 0.81        | A        |
| 3.54        | 1.07        | HA       | 19 | It is too difficult for me to concentrate on my work as I could be disrupted by ICT that I might need for other tasks at any point.                  | 3.29        | 0.81        | A        |
| 3.48        | 1.15        | HA       | 20 | It is too difficult for me to concentrate on my work as I am getting constantly disrupted by ICT that I do not actually need to accomplish my tasks. | 3.27        | 0.80        | A        |
| 3.65        | 1.21        | HA       | 21 | I have to worry too often, whether I might download malicious programs.  | 3.05        | 1.05        | A        |
| 3.60        | 1.23        | HA       | 22 | I have to worry too often, whether I might receive malicious e-mails.  | 3.14        | 1.03        | A        |
| 3.16        | 1.14        | A        | 23 | Due to ICT I have too much to do with the problems of others.  | 3.16        | 0.87        | A        |
| 3.39        | 1.19        | A        | 24 | Due to ICT I have less contact with other people than I would like to.   | 3.43        | 0.87        | HA       |
| 3.08        | 1.14        | A        | 25 | I have to worry about ICT-related problems as our organization does not offer enough support for their removal.                                      | 2.95        | 1.03        | A        |
| 3.07        | 1.16        | A        | 26 | In the case of ICT-related problems, it happens too often that there is not enough support available at work.  | 2.95        | 1.08        | A        |
| 3.47        | 1.18        | HA       | 27 | I think that I am too often confronted with unexpected behavior of the ICT use at work (e.g. breakdowns or long response times).                     | 3.32        | 0.97        | A        |
| 3.54        | 1.08        | HA       | 28 | I think that I lose too much time due to technical malfunctions.   | 3.35        | 0.98        | A        |
| 3.11        | 1.15        | A        | 29 | I think that the demands of my work and the functions provided by the ICT I use do not fit sufficiently.   | 2.81        | 1.02        | A        |
| 2.89        | 1.22        | A        | 30 | I think that I do not gain enough benefits from using the ICT that I am provided with at work for my tasks.  | 2.70        | 1.00        | A        |
| <b>3.00</b> | <b>1.08</b> | <b>A</b> |    |  | <b>2.99</b> | <b>0.74</b> | <b>A</b> |

*Legend: 4.21 – 5.00 (VHA, Very Highly Agree); 3.41 – 4.20 (HA, Highly Agree); 2.61 – 3.40 (A, Agree); 1.81 – 2.60 (MA, Moderately Agree); 1.00 – 1.80 (D, Disagree)*

### Digital Stress as Experienced in General

The faculty and student respondents were asked about the level of digital stress that they may experience during this time of online learning. Their responses are reported in Table 3 through the mean level of agreement, its standard deviation, and its descriptive equivalent. Same set of indicators for digital stress were asked for

both the faculty and students clustered through a 30-indicator categorization.

Table 3 generally reveals that both the faculty and the students 'Agree' that they experience the indicators for digital stress with an average weighted mean of 2.99 and 3.00 respectively, and standard deviations of 0.74 and 1.08, respectively. The standard deviations revealed that the responses of the students are more spread out than those of the faculty which implies that the responses of the faculty are statistically similar, i.e. the answers do not vary as much individually. However, for students the scores imply diversity of answers

### Digital Stress Indicators by Faculty Respondents

For the faculty respondents, Table 3 displays that the indicator 'Due to ICT I have less contact with other people than I would like to' received the highest mean of 3.43 and is interpreted as Highly Agree. This implies that the faculty respondents, because of ICT, are experiencing digital stress because they now have less time talking or being with people who they hoped to have longer time with. This is understandable because ICT made you accessible to all other people, especially in the workplace, and spending time with other people has been limited because of this online accessibility. This indicator is related to 'digital social environment'.

Further, the indicator – and the second of only 2 indicators – 'I think that the time needed to adapt ICT to my individual needs is worth it' received a high mean of 3.41 and is interpreted as Highly Agree. This response to this indicator could be considered a warm welcome of the faculty to the use of ICT in online learning, i.e. acceptance that ICT is the new pathway for flexible learning will decrease the level of digital stress experience by the faculty because they know that what they do is important for their work personally.

Furthermore, 2 indicators received the lowest average mean of 2.54 and is interpreted as Moderately Agree. These indicators are related to 'digital insecurity', and to wit, [1] I think that my job/class position is threatened due to ICT' and [2] I feel that it is threatening that my job/class could be accomplished in an automated fashion due to ICT'. While receiving low weighted means, this result has to be interpreted through a positive thinking, i.e. the faculty respondents are not insecure with ICT or its technology, and they do not believe that they will be displaced by ICT.

### Digital Stress Indicators by Student Respondents

For the student respondents, Table 3 reveals that indicators related to 'digital safety' received the 2 highest weighted means. These indicators include [1] I have to worry too often, whether I might download malicious programs' (3.65, 1.21) and [2] I have to worry too often, whether I might receive malicious programs' (3.60, 1.23). This implies that the student respondents feel most stressed out by the fear of downloading and/or receiving malicious programs. This is a common issue in an online class because files are sent digitally and students are supposed to download these files and answer depending on the instructions of their teachers.

Furthermore, the same indicator that faculty respondents rated lowest has been rated with lowest weighted mean by the student respondents, i.e. 'I think that my job/class position is threatened due to ICT' with a weighted mean of 2.57, and is interpreted as Moderately Agree. This is understandable because ICT is not supposed to threaten the class position (student standing) of the students because ICT is the very reason why they could still continue with their education in a flexible setting. That this indicator received the lowest rating means that this is the least the stresses our digital learners.

Interestingly, the researcher noted indicators that received low weighted means (i.e. not very much considered as digital stressors) that could imply favorable conclusions about the implementation of flexible learning in the University. One indicator that relates to the complexity of accomplishing a task using ICT available to the students was rated low. This implies that the presently used ICT (i.e. online learning platform) is easy to use, which is even made easier by the student orientation on the use of ICT. Taking this within this context, it could have been possible that this indicator will be a digital stressor when data-collection for this study was conducted when students were not yet given appropriate orientation. Nonetheless, the result is a clear view that the University is for quality education through appropriate student services.

Another indicator that received low mean relates to the use of ICT or replace (shift one form to another) during work or simply class. This implies that the need to shift from one ICT (i.e. online learning platform) to another is not much of a challenge to online class of the students. This is probably due to the diversity on online learning modalities implemented by their teachers. There were instructors who reach out students through FB

messenger, email, or via mobile phone. With this mechanism, students would need to be familiar with the how each of this ICT works. It is also possible that at the onset of this mechanism, students found it a challenge, but during the conduct of the study (i.e. a year of online learning has passed), the students must have accustomed to this process already.

On the contrary, there were indicators that received high weighted means apart from those mentioned earlier. An indicator that relates to 'digital overload' received a mean of 3.52. This could mean that too much work, which was made possible through ICT, is a digital stressor to the students. Further, the idea that the students are being easily monitored received a weighted mean of 3.59, and another indicator relating to the difficulty to concentrate on a task because of continuous disruption of ICT received a high weighted mean of 3.48. This latter indicator pointed out that these disruptions from ICT are not actually necessary to accomplish their everyday tasks. These ratings imply that the students are most stressed out digitally by overload of tasks, descriptive ICT contents, and accessible monitoring from people including their instructors.

Finally, one indicator that both the faculty and student respondents 'Highly Agree' with is the idea that the time they need to adapt to ICT to their individual needs is worth it with a weighted of 3.41 and 3.42, respectively. As time progresses, both the faculty and students accept that the new normal for teaching and learning is through ICT and learning it at this point in time is worth it.

The data indicate that the teaching module is indeed adaptable to classroom use as evidenced by its high level of acceptability. This can be perhaps credited to the fact that the teaching module supplies the varying needs of the Rizal teacher and

#### **CONCLUSION AND RECOMMENDATION**

In view of the findings of the study, it can be concluded the following:

1. The faculty respondents are largely male millennials, still single, holding instructor item positions and a designation working at PSU Urdaneta with less than a year length of service, who have a rather low perceived readiness to

online teaching, and low MS Teams competence, who have attended to stress management related trainings, and are mostly using laptop during online class.

2. The student respondents are generally female, fresh senior high school graduates under an irregular standing, who have high perception of readiness to attend online classes but with low competence with using MS Teams, without attendance to any stress management related trainings, and who are mostly using cellular phones during online class.
3. Both the faculty and student respondents generally 'Agree' that they experience digital stress during online teaching and learning.
4. The study found significant relationship between selected profile variables of both the faculty and student respondents, in at least one stress indicator, and their perception on being digitally stressed out.
5. For both the faculty and students, their readiness to attend online class and their competence to use MS Teams, are found to significantly relate with their experience of digital stress.
6. For both the faculty and students, age, gender, gadgets most used in teaching-learning and attendance to stress management related trainings, do not significantly relate with the digital stress that they experience during pandemic.

In view of the findings of the study, it can be recommended the following:

1. To address the digital stress experienced by both faculty and students, the proposed framework for implementation could be used to address or at least arrest the level of digital stress felt by the faculty and students.
2. Since readiness to teach and learn online is found to significantly relate with the digital stress experienced by both the faculty and students, a comprehensive webinar series on strategies for teaching and learning using ICT must be proposed for implementation at the start of every semester.
3. Since the competence of using MS Teams in teaching and learning is found to significantly relate with the digital stress experienced by both the faculty and students, an equally comprehensive orientation where all students and faculty are required to join must be strictly



enforced at the start of every semester, and a certificate of completion must be issued for each faculty and student after they show competence on the use of MS Teams prior the official start of classes, i.e. institutional approach.

4. A webinar on laws relating to Right to Disconnect from Work and the Data Privacy Act must be included as an institutional activity during campus planning sessions, allotting for such purpose the necessary budget and service credits.

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