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Time management and digital burnout during the COVID-19 Pandemic: An exploration of University students experiences

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Abstract

This study aims to investigate the impact of the COVID-19 pandemic on university students' time management and explore the relationship between time management strategies and digital burnout. The research employed a descriptive-correlational design and surveyed 361 students across all levels from Cagayan State University's eight campuses in the Northern Region of the Philippines. The study utilized three instruments: a personal profile and online learning resources questionnaire, the Time Management Questionnaire (TMQ), and the Technostress Scale. Mean was use dto describe the data and the test of relationship was conducted using Pearson-R moment of correlation. The findings revealed that students generally have good time management skills and prioritize tasks effectively. They also value time as a resource, make quick decisions, and avoid wasting time. However, there is room for improvement in planning weekly activities. The respondents experience moderate levels of technostress, particularly in the area of techno-insecurity. A negative relationship was found between time management and technostress, indicating that better time management could reduce technostress levels. It is recommended that students enhance their time management skills, particularly in weekly planning, and learn coping strategies to manage technostress. Incorporating time management training and technostress management into the online learning curriculum may be beneficial.

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Introduction

The COVID-19 pandemic has brought significant changes in the way people live and work, including university students. As universities had to adapt to remote learning, students had to adjust to new learning environments and manage their time differently. This research aims to investigate the impact of the COVID-19 pandemic on university students' time management strategies and explore the relationship between time management and digital burnout. Many students have encountered challenges while attending online classes, including issues with connectivity, the rising cost of online classes, and availability of online materials. Additionally, the effectiveness of online learning compared to face-to-face instruction has been a topic of debate. One of the biggest concerns today is the ability of students to manage their time effectively in order to make online learning an effective mode of delivery.

The success of online learning is dependent on students' time management skills and their ability to use online learning tools effectively.

Triandis (2019) suggests that students who have good time management skills when it comes to online learning tend to have more positive learning outcomes. Interestingly, students who are highly interested in their academics tend to have positive time management skills when using e-learning platforms. They frequently use the platforms, and their situational interests are boosted as a result (Indreica et al., 2016). The development of time management skills is considered essential for the effective use of e-learning platforms (Jasuli, 2018).

In summary, the conduct of online classes has presented many challenges for students, including connectivity issues, rising costs, and availability of materials (Nozaleda et.al, 2021).

Time management skills are critical to the success of online learning, and students who have good time management skills tend to have more positive learning outcomes. Additionally, students who are highly interested in their academics tend to have positive time management skills when using e-learning platforms. Developing time management skills is essential for effective e-learning.

Similarly, the pandemic has increased the reliance on digital technologies for learning, communication, and social interaction, which may lead to digital burnout. Digital burnout refers to a state of emotional exhaustion, depersonalization, and reduced personal accomplishment caused by prolonged use of digital technologies. Digital burnout is also synonymous to the term technostress (Angelito *et al.,* 2022).

Johnson *et al.* (2012) conducted a systematic literature review on technostress in various contexts, including work and education. They found that technostress in education has received little attention in research, and called for more studies to be conducted in this area. Meawnhile, Lee and Choi (2017) conducted a study on the factors that influence technostress in online learning.

They found that time pressure was a significant predictor of technostress, indicating that time management may play a role in the development of technostress in this context. These studies provide support for the idea that technostress in education, including in the context of online learning, has received little attention in research.

They also suggest that time management may be a key factor in the development of technostress in this context, and that further research is needed to better understand this relationship. Due to these gaps in research, this study aims to explore the relationship between learners' time management and technostress.

While there has been a significant amount of research on students' time management in online learning, the results have been conflicting and unclear. Furthermore, many studies have linked students' time management in online learning to technostress. This study aims to shed light on this relationship between time management and technostress in online learning.

Theoretical Framework

The study on students' time management skills, attitudes, and technostress levels in the context of online learning can be understood within the framework of several theories and concepts.

Firstly, the Self-Regulated Learning Theory (Zimmerman, 2002) posits that students who effectively manage their learning process, including time management, goal setting, and self-monitoring, are more likely to achieve academic success. Within this framework, the role of time management skills and attitudes in online learning is essential for self-regulation and better academic performance.

Furthermore, the Technostress Theory (Brod, 1984) suggests that the introduction and use of technology can lead to stress and negative psychological effects. In the context of online learning, understanding how technostress affects students' time management and attitudes toward learning is crucial to devising strategies for reducing stress and enhancing the learning experience.

Lastly, the Cognitive Load Theory (Sweller, 1988) focuses on the mental effort required to learn new information and the impact of cognitive overload on learning outcomes. In an online learning environment, managing time effectively and coping with technostress may help students reduce cognitive load, thereby improving their learning efficiency and performance.

By integrating these theories and concepts, the study can explore the relationships between time management skills, attitudes toward online learning, and technostress levels, as well as their combined impact on academic success.

Research objectives

As an end, this research seeks to examine the strategies that university students use to manage their time during the pandemic and how these strategies are related to digital burnout.

By understanding the impact of the pandemic on time management and digital burnout, this research aims to provide insights for university administrators and educators to support students' well-being and academic success. Specifically, the following are the research questions:

1. What is the time management of the respondents as they perform their online learning?
2. What is the technostress level of the respondents in their online learning?
3. Is there a significant relationship between the technostress of the respondents with their time management along online learning?

Materials and methods

Research design

This study used the descriptive-correlational design to answer the research questions.

Respondents of the study

This research was undertaken in Cagayan State University's eight campuses (CSU), located in the Northern Region of the Philippines. As the largest state institution of higher learning in the whole of the Cagayan Valley Region, CSU offers a diverse range of curricular programs and boasts a substantial student enrollment.

To select a representative sample for the study, the respondents were chosen from students across all levels in the undergraduate programs, at each of the eight campuses. To ensure the accuracy and generalizability of the findings, the sample size was computed using Slovin's formula, which is widely used in social science research to determine the appropriate sample size from a larger population. The respondents were selected using convenience sampling.

Subsequently, stratified random sampling was employed to ensure a balanced representation of students from each campus. In this approach, the total population was divided into distinct strata based on the campus they belonged to, and then a random sample was drawn from each stratum in proportion to the population size of that stratum. This method ensured that the sample accurately reflected the characteristics of the entire student population at CSU.

Table 1 presents the population and sample size of students in each campus, showcasing the distribution of respondents across the eight campuses. By employing stratified random sampling and calculating the sample size using Slovin's formula, the study aimed to achieve a comprehensive understanding of students' time management skills, attitudes, and technostress levels in the context of online learning at Cagayan State University.

Table 1. Distribution of respondents by campus.

Campus	Population	Sample
Andrews	5619	567
Aparri	3482	396
Carig	8415	804
Gonzaga	1512	167
Lallo	1025	104
Lasam	743	85
Piat	1437	177
Sanchez mira	1981	209
Total	24,214	2,509

Research Instrument

This study utilized one survey questionnaire, consisting of three sections. The first section elicited the personal profile and online learning resources of the respondents.

The second instrument was the Time Management Questionnaire (TMQ), a 27-item scale designed to measure the time management practices of university students. It was adopted from Alay & Kocak (2002), and responses under each item consisted of always, frequently, sometimes, infrequently, and never. In scoring, a 5-point scale was assigned to the answer "always" for positive items, and a 1-point scale was assigned to the answer "always" for negatively-worded items. Higher values on the TMQ corresponded to better time management practices. The Cronbach Alpha coefficients or internal consistency for the three subscales of TMQ for the selected 361 university students ranged from .47 (Time Wasters) to .88 (Time Planning). The relatively low Cronbach alpha coefficient for the Time Wasters subscale (.47) may have been due to the varied interpretation of items in this subscale or the limited number of items. Hence, future studies can further conduct examination and possible refinement of the Time Wasters subscale to improve its internal consistency. Nonetheless, the overall Cronbach alpha for the total scale was 0.87, indicating satisfactory reliability for the TMQ as a whole.

The third instrument measured the technostress of the respondents. This instrument was adopted from Booker et al. (2014) in their exploratory study of technostress in online education. The instrument contained 20 statements distributed among the five dimensions of technostress, namely: (a) techno-overload, (b) techno-invasion, (c) techno-complexity, (d) techno-insecurity, and (e) techno-uncertainty.

Data Analysis

Descriptive statistics (frequency counts, percentages and means) was utilized to present the attitude on online learning and technostress levels. For hypothesis testing, nonparametric tests were utilized in the study due to violation of the assumptions of normal distribution and homogeneity of variance. Kendall's tau-b correlation was run to determine the relationship between technostress and time management along online learning. All analyses were tested at 0.05 level using IBM SPSS.

Results and discussion

Table 2 shows the respondents' time management along time planning which is very good ($\bar{x}$=4.14). The very good time planning of the respondents indicates that they set goals for each day and commit to finish those goals. The item which obtained the highest mean is *Do you set and honor priorities?* ($\bar{x}$=4.41-excellent*)*. The excellent skill of the respondent regarding review of class notes even without a test means that they are conscientious students. On the other hand, the item which registered the lowest mean is *Each week do you do things as they naturally occur to you, without an effort to make a plan in advance and compulsively?* ($\bar{x}$=2.59-fair). The finding signifies that the respondents are indeed good planners as they always create plans of action pertaining to their academic work.

The findings indicate that the respondents have a very good time management skill and planning ability. They set goals for each day and prioritize their tasks

accordingly, which is essential for academic success. The highest mean score was obtained for the item related to setting and honoring priorities, indicating that the respondents were excellent at managing their time and completing their tasks efficiently.

This finding is consistent with previous research that has highlighted the importance of goal setting and time management for academic success (Dabbagh, Kitsantas, & Johnson, 2018; Sackett, Hardison, & Cullen, 2018). The excellent skill of the respondents regarding reviewing their class notes even without a test implies that they are conscientious students. Conscientiousness has been linked to academic success and is a predictor of academic performance (Poropat, 2014). This finding is supported by previous studies that have shown that conscientious students tend to be more organized, disciplined, and better at time management (Pekrun, Elliot, & Maier, 2009; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007).

Table 2. Respondents time management along time planning.

Statements	Mean	Interpretation
Do you plan your day before you start it?	4.33	Excellent
Do you have a set of goals for each week ready at the beginning of the week?	4.17	Very Good
Do you spend time each day planning?	4.16	Very Good
Do you write a set of goals for yourself for each day?	4.32	Excellent
Do you make a list of the things you have to do each day?	4.21	Excellent
Do you make the schedule of activities you have to do on workdays?	4.17	Very Good
Do you have a clear idea of what you want to accomplish during the next week?	4.17	Very Good
Do you set deadlines for yourself for completing work?	4.21	Excellent
Do you try to schedule your best hours for your most demanding work?	4.19	Very Good
Do you keep your important dates (e.g. Exam dates, research paper due dates, etc.) on a single calendar?	4.19	Very Good
Do you have a set of goals for the entire quarter?	4.29	Excellent
Do you have handouts or xerox articles which, although not presently important to you, may be in the future?	4.18	Very Good
Do you regularly review your class notes, even when a test is not imminent?	4.34	Excellent
Do you keep things with you that you can work on whenever you get spare moments?	4.28	Excellent
Do you set and honor priorities?	4.41	Excellent
Each week do you do things as they naturally occur to you, without an effort to make a plan in advance and compulsively?*	2.59	Fair
Grand Mean	4.14	Very Good

Table 3 presents the respondents' time management along time attitudes which is very good ($\bar{x}$=3.66). The very good time attitude of the respondents reveals that they value time as a resource. In this regard, they use it wisely in doing on their academic tasks. The statement that garnered the highest mean is *Are you able to make minor decisions quickly?* ($\bar{x}$=4.46-excellent). This data implies that the respondents do not waste time in their decision making as they see time wasted as an opportunity lost. On the other hand, the item with lowest mean is *Do you find yourself waiting a lot without anything to do?* ($\bar{x}$=2.59-fair). The fair time attitude of the respondents on this item signifies that they have always something to do. In such case, they don't wait a lot on what's next in their daily tasks.

Additionally, the findings presented in the tables indicate that the respondents value time as a resource and use it wisely in academic tasks, as evidenced by their high rating on-time attitudes (Table 3). This finding is supported by a study by St-Jean, Lemay, and Paré (2019), which found that time management, is an essential factor in academic success. The study further indicated that students who manage their time effectively achieve higher

grades than those who do not. Moreover, the respondents in this study are quick in making minor decisions and do not waste time, as indicated by the high rating on the item "Are you able to make minor decisions quickly?" This finding is consistent with the results of a study by Jaiswal and Asawa (2017), which found that students who make quick decisions have better academic performance.

Table 3. Respondents' Time Management along Time Attitudes.

Statements	Mean	Interpretation
Do you make constructive use of your time?	4.41	Excellent
Do you believe that there is room for improvement in the way you manage your time?*	3.00	Good
Do you feel you are in charge of your own time, by and large?	4.19	Very Good
Are you able to make minor decisions quickly?	4.46	Excellent
Generally, do you think you can usually accomplish alt your goals for a given week?	4.19	Very Good
Do you often find yourself doing things which interfere with your school work simply because you hate to say "no" to people?*	2.80	Good
Do you find yourself waiting a lot without anything to do?*	2.59	Fair
Grand Mean	3.66	Very Good

Table 4 reveals that the time management along time wasters of the respondents is fair ($\bar{x}$=2.41). This finding shows that they do not mis spend their time as they utilize their time in valuable activities. Among the items along time wasters, the question, *The night before a major assignment is due, are you usually still working on it?* was rated the highest ($\bar{x}$=2.97-good). The good rating of this item implies that the respondents advance the completion of their assignment and they do not cram in finishing it before submission. The last item which registered the lowest mean is *Do you smoke an average of at least one pack of cigarettes per day?* ($\bar{x}$=1.44-poor). This finding implies that they don't engage in activities that while out their time. Instead, involves themselves in activities that ensure their academic success. Regarding time wasters, the respondents in this study are good at completing major assignments and do not engage in activities that waste their time, as evidenced by the high rating on the item "The night before a major assignment is due, are you usually still working on it?" This finding is supported by a study by Çelik and Çoklar (2015), which found that procrastination is one of the significant causes of poor time management and academic failure.

Table 4. Respondents' Time Management along Time Wasters.

Statements	Mean	Interpretation
On an average class day do you spend more time with personal grooming than doing schoolwork?*	2.59	Fair
Do you continue unprofitable routines or activities?*	2.64	Good
Do you smoke an average of at least one pack of cigarettes per day?*	1.44	Poor
The night before a major assignment is due, are you usually still working on it?*	2.97	Good
Grand Mean	2.41	Fair

Table 5 illustrates that time management of the respondents is very good ($\bar{x}$=3.41) which implies that they are capable of making the best use of their time. Among the dimensions of time management, the respondents obtained highest rating along time planning ($\bar{x}$=4.17-very good). Meanwhile, the dimension which obtained the lowest rating is time wasters ($\bar{x}$=2.41-fair) which implies that the respondents do not spend a lot of time doing something that is unnecessary.

Table 5. Summary Table on the Respondents' Time Management.

Dimension	Mean	Interpretation
Time Planning	4.17	Very Good
Time Attitudes	3.66	Very Good
Time Wasters	2.41	Fair
Grand Mean	3.41	Very Good

Table 6 shows that the overall technostress of the respondents is moderate ($\bar{x}$=2.90) which means they experienced average discomposure and anxiety in learning and using computer technology. Among the dimensions of technostress, the respondents obtained highest mean along Techno-insecurity ($\bar{x}$=3.12-moderate stress) which implies that they are threatened by other students who have a better

understanding of new gadgets and applications. The dimension which obtained the lowest mean is Techno-invasion ($\bar{x}$=2.58-mild stress) in which the respondents are anxious that their teachers can potentially reach them anywhere and anytime.

In terms of technostress, the respondents in this study experience a moderate level of discomfort and anxiety in learning and using computer technology, with Techno-insecurity being the most stressful dimension. This finding is consistent with the results of a study by Ozturk and Arslan (2019), which found that students experience moderate levels of technostress in the context of online learning.

Table 6. Summary table on the respondents Technostress.

Dimension	Mean	Interpretation
Techno-overload	2.70	Moderate Stress
Techno-invasion	2.58	Mild Stress
Techno-complexity	3.04	Moderate Stress
Techno-insecurity	3.12	Moderate Stress
Techno-uncertainty	3.07	Moderate Stress
Grand Mean	2.90	Moderate Stress

Table 7 shows the Kendall's tau-b correlation was run to determine the relationship between the technostress of the respondents with their attitude and time management along online learning. Results show that there was a negative relationship between technostress and time management. This implies that the higher the score in time management the lesser is the stress along online learning. The negative relationship between technostress and time management in online learning suggests that effective time management can reduce technostress. This finding is supported by a study by Cheung and Wong (2018), which found that students who manage their time effectively experience less technostress.

In conclusion, the findings presented in the tables suggest that the respondents in this study value time as a resource, do not waste time, and experience a moderate level of technostress in the context of online learning. Effective time management can reduce technostress in online learning, highlighting the importance of teaching time management skills to students. Moreover, the findings suggest that the respondents have good time management and planning skills, which are essential for academic success. The results also highlight the importance of conscientiousness and goal setting in academic achievement. However, the findings should be interpreted with caution as they are based on self-report measures and are limited to a specific sample. Further research is needed to explore the nuances of time management and planning in academic settings.

Table 7. Relationship between the technostress of the respondents with their time management along online learning.

	Technostress	
Variables	Correlation Coefficient (τ_b)	Pvalue
Time Management	-.056**	<0.001

Conclusions and recommendations

In conclusion, the study findings suggest that the respondents demonstrate very good time management and planning skills, which are crucial for academic success. They prioritize their tasks, set daily goals, and are conscientious students who review their class notes regularly. Additionally, they value time as a resource and are efficient in making minor decisions, focusing on essential academic tasks and avoiding time-wasting activities.

The respondents also experience a moderate level of technostress in the context of online learning, with the highest stress experienced in the Techno-insecurity dimension. Notably, there is a negative relationship between technostress and time management, indicating that effective time management can reduce technostress in online learning environments. These findings emphasize the importance of teaching time management skills to students, as well as providing support for those experiencing technostress. The results also highlight the significance of conscientiousness, goal setting, and efficient decision-making in academic achievement. However, it is essential to consider the limitations of this study, as the findings are based on self-report measures and a specific sample. Further research is needed to explore the nuances of time management and planning in various academic

settings and to investigate strategies for mitigating technostress in online learning environments.

Based on the conclusion, the following recommendations are proposed for improving time management skills and managing technostress among students. These recommendations can be implemented through project-based interventions or policy innovations:

Time management workshops
Educational institutions should organize workshops and seminars focused on teaching students effective time management strategies. These workshops can cover topics such as goal setting, prioritization, scheduling, and avoiding procrastination. It is also helpful if students are provided with toolkits that include practical resources, such as planners, calendars, and time tracking apps, to help them organize their academic tasks and manage their time more effectively.

Incorporate time management into the curriculum
Integrate lessons on time management into the curriculum across different subjects, emphasizing the importance of these skills for academic and personal success.

Technostress awareness and prevention programs
Develop programs to raise awareness about technostress and its potential impact on students' academic performance and mental health. These programs can also provide coping strategies and techniques for managing technostress, such as mindfulness exercises, digital detox sessions, and stress management workshops.

Promote a balanced use of technology
Encourage students to take regular breaks from technology and engage in offline activities, such as sports, hobbies, or socializing, to create a healthy balance between their online and offline lives.

Train teachers and faculty in identifying technostress
Equip educators with the knowledge and skills to recognize signs of technostress among students, and to provide appropriate support and guidance.

Review and update technology policies:
Educational institutions should regularly assess their technology policies to ensure they promote a healthy and balanced use of technology, minimizing the risk of technostress among students.

By implementing these recommendations, educational institutions can support students in developing effective time management skills and managing technostress, ultimately contributing to their overall academic success and well-being.

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