Teaching Modality, Anxiety, and Coping Mechanisms of College Students during COVID-19 Pandemic

Lucille S. Arcedas, Ph. D., Donalyn G. Lastima, Ph. D., Lourlen P. Pagdato, MBA
Ana Lou A. Panganiban, Ph. D., Margilyn R. Villarosa, MA RGC, LPT
Technological University of the Philippines Visayas, Philippines
*lucille_arcedas@tup.edu.ph

ABSTRACT

This convergent mixed methods design research aimed to determine the experiences of college students during the third term of the school year 2019-2020. Specifically, this study identified the online modality used, measured the level of satisfaction in terms of lessons, activities, and assessments of students, their overall experience of the online classes, and suggestions to Technological University of the Philippines Visayas (TUPV) on how to improve the online learning. This also identified their anxiety level and coping mechanisms. Data were obtained from conducting an online survey. Mean, frequency, percentage, and standard deviation were used to process quantitative data while thematic analysis was used for the qualitative component. Results showed that the majority (94%) of the 1260 respondents used Facebook messenger as their online platform. Other online modalities used were Google classroom, Zoom Application, and Schoology. Generally, students were satisfied with the response time and activities. Anxiety level is very low and the coping strategy with the highest mean is classified under acceptance. It is recommended that students with very high anxiety and avoidant coping mechanisms be scheduled for counseling. Further, another research about faculty internet connectivity status, online skills, preferred modality, and lived experiences during online classes maybe conducted.

Introduction

COVID-19 pandemic has changed the course of life. Persons, who are considered as social beings, are now discouraged to attend social functions, and are locked in their own homes. Students, especially those who consider school as their haven and place of safety and recreation are greatly affected. This is reflected in their social media posts. While academics plays an important aspect of student life, the online method may have also increased their existing anxiety. Since there is still uncertainty as to when to go back to normal, the school needs to devise means to alleviate students' condition, especially for the upcoming school year. This can be done through knowledge of the present situation of students, and to provide them with a dependable platform where they can voice out their sentiments, express ways to help themselves, and promote their own well-being.

Dowdy et al. [1] emphasized the role of a multidisciplinary team in the reform of service delivery to move school-based psychological services to the forefront. This method stresses on the prevention, early intervention, and promotion of mental health. Likewise, this study can further assist the school in strengthening its core value of shared responsibility and accountability based on Technological University of the Philippines Handbook [2]. Self-reports from students can generate realistic insights which will be helpful in the collaboration of teachers, student affairs and services office, and administrators.

This is also geared to develop a program that will assist the students in coping with the current crisis. This further aims to provide instructional materials and modality that can maximally help the students. Knightsmith [3] stressed that schools should come up with a curriculum that provides a whole school approach to mental health; it should promote the well-being of the staff as well as the learners. Dwyer [4] optimistically stressed the need for creating a shared vision, informed by both research and practice, that benefits every child, while moving forward with hope.

The World Health Organization [5] suggested to conduct repeated assessment of the same variables to analyze this overtime. Thus, data collection of the same variables is suggested to be conducted every after first and third term of the school year. This allows evaluation of teaching modality on term basis for further improvement of services.

The general objective of this study is to create a program that will assist students to adapt to the "new normal" based on the data provided in quantitative and qualitative forms.

Specifically, the study aims to answer the following questions based on their experience during the the 3rd term of SY 2019-2020:

1. What is the strength of internet connectivity of the students?
2. What are the online platforms that the students used?
3. What is the level of effectiveness of each of these platforms?
4. What is the students' level of satisfaction on the response time during online classes?
5. What is the students' preference regarding notes?

6. How do the students perceive the notes that were provided to them in terms of:
   a. preparation and organization
   b. interesting and engaging qualities
   c. objectives
   d. lessons and activities?
7. Did the students feel that they were able to meet the objectives of the courses?
8. What is the students' perception of the tests?
9. What is the students' level of anxiety?
10. What are the coping strategies that they used?
11. How do students summarize their experience during the term?
12. What are the students' suggestions to improve the online learning for the following term?

This study involves the development of a learning program from the students' responses to the survey. Respondents of the survey were students during the 3rd term of school year 2019-2020.

Literature Review

This study is anchored on Experiential Learning Theory and Broaden and Build Theory.

The experiential learning theory integrates the following propositions cited by Kolb and Kolb [6]. First, learning is a process and not focused on the outcomes. This is an ongoing reconstruction of experiences. Second, all learning is learning once again. Third, learning must resolve conflicts. Fourth, learning is a holistic process of adjusting to the current situation. Lastly, learning is a progression of creating knowledge.

Fredrickson [7] proposed the broaden-and-build theory which highlights the ways in which positive emotions are essential elements of optimal functioning which are summarized into the following: First, positive emotions broaden people's attention and thinking; Second, positive emotions undo persistent negative emotional arousal; Third, positive emotions strengthen psychological resilience; Fourth, positive emotions build momentous personal resources; Fifth, positive emotions activate upward spirals towards greater well-being in the future; and lastly, positive emotion ignites human flourishing. This also recommends that people should cultivate positive emotions in their lives and those around them. This transforms people for the better and sets them on paths toward healthy longevity.

As COVID-19 forces online and modular teaching, this study will look deeper into the experiential learning of students, how do they adapt to the new normal, and identify ways in which TUPV can further broaden their perspective on this crisis. The above-named theories will assist the researchers in the creation of a learner-friendly program toward holistic development of each student.

COVID-19

COVID-19 led us to a nightfall zone which shifted the knowns to unknowns, certainties to worries, and coming together to remaining separately (Dwyer). This can increase anxiety because according to the experimental study of Havranek et al. [8] people tend to have increased anxiety over unpredictable and/ or uncontrollable circumstances. Hassnain and Omar [9] concluded that this pandemic is affecting both the physical and mental health of the population.

Anxiety

Anxiety is a natural human state and a vital part of human lives, but persistent anxiety can cause emotional distress (Swift., et al. [10]). According to Zbozinek et al. [11] generalized anxiety disorder and major depressive disorder have the highest comorbidity rate which ranges from 40 to 98% in treatment studies. According to Lee [12], corona virus anxiety significantly influences social attitude.

Coping Mechanism

Lee revealed that COVID-19 Anxiety Scale scores were strongly, positively associated with functional impairment, alcohol or drug coping, negative religious coping, extreme hopelessness, and passive suicidal ideation. Swift et al. reminded that anxiety can be overcome with a good ability to cope. However, Orpana et al. [13] concluded that high levels of well-being are possible to coexist with mood and/or anxiety disorder. The study further showed that there were no significant associations between self-management behaviors and well-being. But the study revealed significant association with perceived stress, coping, and social support with well-being. Similarly, Thuen, Bru and Ogden., [14] showed that students' coping styles accounted for some of the covariance between

learning environment factors, and emotional and behavioral problems. This study also revealed that students with aggressive coping tendencies were likely to perceive the learning environment more negatively. Henderson et al. [15] revealed that student's own coping strategy, enhanced by their teacher, improved their learning. Among the guidance counselors in Bacolod City, Arcedas [16] discovered that the mostly sought coping strategy is "I've been looking for something good in what is happening."

Teaching Modality

At Technological University of the Philippines Visayas (TUPV), classes during the third term started on March 9, 2020. Students physically attended classes during the first week. Online classes resumed on May 11, 2020, following the school's memorandum. Just like Dowdy et al., the first task of TUPV was to determine how to identify and serve in a timely fashion to the students. The departments-in-charge were given the task to reach out to students and identify their strength of connectivity. Online classes started on May 11 and the instructors used various online platforms like Google Classroom, Facebook messenger, Facebook group page, Schoology, and Zoom.

Uprichard [17] cited various literature to define e-learning. It is the delivery of training using technology such as virtual learning environments, the internet, social media and or mobile applications. It can be divided into two categories: synchronous learning and asynchronous learning. Synchronous learning is facilitated by a teacher and takes place in real time. On the other hand, asynchronous learning is more flexible and can be completed at any time depending on the convenience of the students. Ramos [18] stressed that despite the promise of interactivity, Zoom cannot replace a community where people are wholly present to one another. Similarly, Kennedy [19] noted reluctance to stop in-person instruction because many students do not have access to internet. That is why, for Dwyer et al., it is important to reflect on evidence- and research-based strategies to identify and address the needs of the students.

In providing online education, provision of handouts or learning modules follow. Wongkietkachorn et al. [20] highlighted the importance of handout when their experiment showed that with the absence of handouts, there was 83.6% decrease in concentration, less notetaking by 89.7% and has significantly increased class-skipping behavior. Moreover, Kinchin [21] observed that even if the teacher provided good PowerPoint presentation slides, a poor handout may send contradictory message to students and may reinforce their passivity. In addition, the survey of Tomita [22] showed that perceived attractiveness of the visual design of the handouts did not increase students' motivation to learn from the handouts. This can be because the perceived attractiveness and helpfulness may not always go together.

Methodology

This section discusses the instruments used and research design. The instruments of this study were researcher-made questionnaire on teaching modality, COVID-19 Anxiety Scale by Shermann A. Lee, and Brief COPE instrument by Charles S. Carver [23].

The teaching modality questionnaire used to assess students' satisfaction level was based from the Customer Satisfaction Survey of the TUPV Accreditation Office. This has been validated by experts and has been used since 2015.

The Coronavirus Anxiety Scale is a brief mental health screener for COVID-19 related anxiety. This was developed by Lee of Christopher Newport University, Virginia. This seeks to identify probable cases of dysfunctional anxiety associated with the COVID-19 crisis. This 5-item scale was based on 775 adults with anxiety over the coronavirus demonstrated solid reliability and validity. In this study, students answer the following:

0 – not at all
1 – rare, less than a day or two
2 – several days (3 – 6 days)
3 – more than 7 days
4 – nearly every day, over the last 2 weeks

The brief COPE (Coping Orientation to Problems Experienced) Inventory of Carver

presents the scales into 14 such as self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion and self-blame. This 28-item questionnaire is widely used and was translated into Spanish, French, German, Greek, and Korean. Carver, Scheier, and Weintraub [24] further categorized coping into problem-focused coping and emotion-focused coping. Problem-focused coping includes active coping, planning, suppression of competing activities, restraint coping and seeking instrumental social support. Emotion-focused coping includes seeking of emotional social support, positive reinterpretation, acceptance, denial, and turning to religion. It also has three scales aimed at measuring coping responses: focus on venting of emotions, behavioral disengagement, and mental disengagement. In coping, students answer each statement with a score of 1-4, as follows:

     1 – I usually don't do this at all
     2 – I usually do this a little bit
     3 – I usually do this a medium amount
     4 – I usually do this a lot.

Eisenberg et al. [25] categorized the COPE strategies as either avoidant or approach coping. They found association between avoidant coping to poorer physical health. While approach coping is associated with more helpful responses to adversity including adaptive practical adjustment, better physical health outcomes, and more stable emotional response.

Avoidant coping includes denial, substance abuse, venting, behavioral disengagement, self-distraction, and self-blame. On the other hand, approach coping includes the following subscales: active coping, positive reframing, planning, acceptance, seeking emotional support, and seeking informational support. Humor and religion are neither approach nor avoidant coping.

This study follows the convergent mixed methods design. According to Creswell and Plano Clark [26] this method uses both quantitative and qualitative data simultaneously to get information from participants. The first step was getting the

quantitative and qualitative data, analyze them separately, and then merge their result.

Aware that the online platform does not guarantee maximum participation, yet confident that the population proportion would be close to 0.5 and assuming 95% confidence level as discussed by Tejada and Punzalan [27], the researchers used the Yamane's formula in getting the sample size.

This was just used to provide a minimum sample size to proceed to the research. The online survey was conducted on July 14-23, 2020 using Google Form. The target sample size was met within few hours, so the research was conducted.

For the ethical considerations, consent form was provided in the online survey. Students were assured of their anonymity, confidentiality, and non-disclosure of their identity.

Data Analysis

Descriptive statistics like frequency, percentage, mean, and standard deviation were used to process quantitative data. Thematic analysis was used to process the qualitative outputs.

Results

The study has 1,260 respondents out of 2,491 enrolled students. The response rate was about half (50.58%) of the population, which is higher than the target sample size. This consists of students from different courses such as BS in Chemistry, BS in Electronics Engineering, BS in Engineering Technology, BS in Mechanical Engineering, and Bachelor of Technology major in Mechatronics Technology in all year levels. As to internet connectivity, the students have average internet connectivity (neither too strong nor too weak).

Table 1 shows that out of 1,260 respondents, 1,187 (94.21%) used Facebook messenger or group chat. Of this, 51.14% found it as somewhat effective, 18.79% as effective, 15.42% as somewhat ineffective, and 14.66% as ineffective. While many students are using this platform, some find it difficult to have FB messenger for

synchronous learning. The major reason for their difficulty is weak signal that lagged them behind their classmates.

When asked about their level of satisfaction on the response time of their teachers, all courses answered "satisfactory" (M = 2.97, SD = 0.87).

When asked about their preference about receiving modules, 615 (49.52%) preferred both soft and hard copy, 472 (38%) opted for hard copy only and 150 (12.08%) said they preferred soft copy only.

They also perceived the preparation and organization of modules as "average" (M = 3.35, SD = 0.80). Likewise, as to the interesting and engaging qualities, as well as clarity of the modules, students across all courses rated it as "average" (M = 3.12, SD = 0.85).

When students were asked when objectives were clearly written, the result is "average" (M = 3.42, SD = 0.86). When asked if the modules met the objectives, the answer is also "average" (M = 3.21, SD = 0.89). As to the amount of lesson, the students find it "just enough" (M = 3.01, SD = 0.91). As to the number of assessment, they find it also as "just enough" (M = 3.39, SD = 0.79) and as to the level of difficulty of the assessments, they found it "average" (M = 3.33, SD = 0.60).

When students were asked to describe their overall experience of the third term in one word, their answers were classified into three themes: positive, neutral, and negative. Positive comments like good (152), satisfactory (57) fair (41), fine (36), satisfied (34), okay (21), and great (17). Neutral comments include average (41), Challenging (37) and enough (12). Negative comments were difficult (81), hard (66), ineffective (36), lacking (33), poor (19), insufficient (14) and unsatisfied (13).

Table 1. Effectiveness of the Online Platform

Modality	Number of Respondents	Responses			
		Ineffective	Somewhat Ineffective	Somewhat Effective	Effective
Facebook Group Chat/ Messenger	1, 187	174 (14.66%)	183 (15.42%)	607 (51.14%)	223 (18.79%)
Facebook Group Page	830	161 19.40%	0	592 (71.33%)	77 (9.28%)
Google Classroom	982	143 (14.56%)	186 (18.94%)	513 (52.24%)	140 (14.26%)
Schoology	544	122 (22.43%)	137 (25.18%)	235 (43.20%)	50 (9.19%)
Zoom Application	572	150 (26.22%)	141 (24.65%)	215 (37.59%)	66 11.54%

As to anxiety levels, students in all courses have a low anxiety (M = 0.67, SD = 0.73). There were only 8 students who were identified with high anxiety. They were referred to the Guidance Services Office for counseling.

Table 2 shows coping mechanisms of students. Carver categorized them into 14. Later, Eisenberg, et al. further categorized the fourteen into either approach or avoidant coping. Most of the coping strategies of the students were approach like acceptance, positive reframing, and

active coping. Turning to religion and humor were neither approach nor avoidant. Ten students were identified to have negative coping mechanisms.

Their names were forwarded to the Guidance Services Office for counseling.

Table 2. Top 10 coping mechanisms of students

Rank	Coping Mechanism	Mean	SD	Category	
				Carver	Eisenberg, et al
1	I've been accepting the reality of the fact that it has happened.	3.21	0.88	Acceptance	Approach
2	I've been praying or meditating.	3.05	0.97	Turning to religion	-
3	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	2.95	1.0	Mental disengagement	Avoidant
4	I've been turning to work or other activities to take my mind off things.	2.91	0.90	Mental disengagement	Avoidant
5	I've been learning to live with it.	2.87	0.87	Acceptance	Approach
6	I've been looking for something good in what is happening.	2.80	0.93	Positive Reframing	Approach
7	I have been concentrating my efforts on doing something about the situation I'm in.	2.72	0.86	Active coping	Approach
8	I've been trying to find comfort in my religion or spiritual beliefs.	2.67	1.07	Turning to religion	-
9	I've been taking action to try to make the situation better.	2.62	0.88	Active coping	Approach
10	I've been trying to see it in a different light, to make it seem more positive.	2.61	0.99	Positive Reframing	Approach

Discussions

Majority of the students considered the online platforms used as somewhat effective. This is in consonance with the study of Ramos that online modality cannot replace face to face classes. In addition, Kennedy cited that many students do not have access to internet.

About half of the students preferred hard and soft copies of the modules. This is because according to Wongkietkachorn et al, handout increases students' concentration. Students also find that modules were average when it comes to interesting and engaging qualities. However, this may not have an impact to their learning because according to Tomita, perceived attractiveness of the visual design of the handouts did not increase

students' motivation to learn from the handouts. This can be because the perceived attractiveness and helpfulness may not always go together.

Most students have low anxiety and have positive coping mechanisms. While some expressed their difficulty in the new teaching modality, majority have positive comments when they summarized their experience in one word. This shows that many are optimistic despite the pandemic.

Conclusion

Students generally have average level of satisfaction about the modalities used during the third semester. They are satisfied with the response time of the teachers and the lessons, activities, and assessments are just enough for

them. Very few students exhibited anxiety during this term and most of their coping mechanisms are healthy.

Limitations and Future Studies

This study was given only to 1260 students enrolled during the third term of SY 2019-2020 of Technological University of the Philippines Visayas. These students have average connectivity and have access to internet.

Similar study may be provided to the students every after the first and third term of the school year to identify if progress have taken place.

Future studies may include faculty internet connectivity status, online skills, preferred modality, and lived experiences during this pandemic.

Acknowledgement

References (APA 6th edition)

[1] Dowdy, E., Furlong, M., Raines, T., Bovery, B., Kauffman, B., Kamphaus, R., Dever, B., Price, M., & Murdock, J. (2015). Enhancing School-Based Mental Health Services With a Preventive and Promotive Approach to Universal Screening for Complete Mental Health. *Journal of Educational and Psychological Consultation. 2015.* (25). 178–197. DOI: #10.1080/10474412.2014.929951.www.library.cornell.edu

[2] Technological University of the Philippines Handbook (2016).

[3] Knightsmith, P. (2019). Breaking down barriers. the psychologist. library.cornell.edu

[4] Dwyer, B. (2020). Shaping an Uncertain Future. *Literacy Today*. www.library.cornell.edu

[5] World Health Organization (2020). Survey Tool and Guidance: Rapid, simple, flexible behavioural insights on COVID-19. http://www.euro.who.int/pubrequest

[6] Kolb, A. & Kolb, D. (2011).,Experiential Learning Theory: A Dynamic, Holistic Approach to Management Learning, Education and Development. DOI: 10.4135/9780857021038.n3

[7] Fredrickson, B. (2004). *The broaden and build theory of positive emoitions.*https://www.ncbi.nlm.nih.gov.pdf

[8] Havranek, M., Bolliger, B., Roos, S., Pryce, C., Quednow, B., & Seifritz, E.(2015). Uncontrollable and unpredictable stress interacts with subclinical depression and anxiety scores in determining anxiety response. *Stress 19*(1), 53–62.

[9] Hassnain, S. & Omar, N. (2020). *How COVID-19 is Affecting Apprentices.* www.library.cornell.edu

[10] Swift., P., Cyhlarova, E., Goldie, I., & O'Sullivan, C. (2014). Living with Anxiety: Understanding the role and impact of anxiety in our lives. *Mental Health Foundation.* www.library.cornell.edu

[11] Zbozinek, T., Rose, R. Wolitzky-Taylor, K., Sherbourne, C., Sullivan, G., Stein, M., Roy-Byrne, P., & Craske, M. (2012). Diagnostic Overlap of Generalized Anxiety Disorder and Major Depressive Disorder in a Primary Care Sample. *Depression and Anxiety, 2012* (29), 1065–1071.

[12] Lee, S (2020). Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. *Death Studies, 44.* 393-401. DOI10.1080/07481187.2020.1748481

[13] Orpana, H., Vachon, Pearson, J. C., Elliott, K., Smith, M. & Branchard, B. (2016). Correlates of well-being among Canadians with mood and/or anxiety disorders. *Research, Policy and Practice, 36* (12), 302 – 313.

[14] Thuen, E.Bru, E., & Ogden, T. (2007). Coping Styles, Learning Environment and Emotional and Behavioural Problems. *Scandinavian Journal of Educational Research, 51* (4), 347-368.

[15] Henderson, E., Hogan, H., Grant, A. & Berlin, A. (2003). Conflict and coping strategies: a qualitative study of student attitudes to significant event analysis. *Medical Education, 37,* 438–446.

[16] Arcedas, M. B. (2011). *When Helpers Need Help: Problems and Coping Strategies of Guidance Counselors.* (Master's Thesis). Bacolod City: University of St. La Salle

[17] Uprichard, K. (2020). E-learning in a new era: enablers and barriers to its implementation in nursing. *British Journal of Community Nursing*, 25 (6), 272 – 275.

[18] Ramos, S. (2020). Disrupting the College Experience. *Commonweal,* 6.

[19] Kennedy, M. (2020). Classes Dismissed. *American School and University*. 15-17

[20] Wongkietkachorn, A., Prakoonsuksapan, J. & Wangsaturaka, D. (2014). What happens when teachers do not give students handouts? *Medical Teacher*. *36,* 789–793

[21] Kinchin, I. (2006). Developing PowerPoint handouts to support meaningful learning. *British Journal of Educational Technology, 37* (4), 647–650.

[22] Tomita, K. (2018). Does the Visual Appeal of Instructional Media Affect Learners' Motivation Toward Learning? *TechTrends, 62*, 103–112

[23] Carver, C. (1997). You want to measure coping but your protocol's too long: Consider the brief. *International Journal of Behavioral Medicine, 4* (1), 92 - 100

[24] Carver, C., Scheier, M., & Weintraub, J. (1989). Assessing Coping Strategies: A Theoretically Based Approach. *Journal of Personality and Social Psychology, 56* (2). 267-283.

[25] Eisenberg, S. A., Shen, B. J., Schwarz, E. R., & Mallon, S. (2012). Avoidant coping moderates the association between anxiety and patient related physical functioning in heart failure patients. *Journal of behavioral medicine, 35* (3), 253 -261)

[26] Creswell, J. (2014). Research design: qualitative, quantitative, and mixed methods approaches (4th Ed). Thousand Oaks: Sage Publications, Inc.

[27] Tejada, J. & Punzalan, R. (2012). On the Misuse of Slovin's Formula. *The Philippine Statistician, 61*(1). 129 – 136.