Making Sense of Online Classes during Quarantine due to the COVID-19 Pandemic: Students' Perceptions from a Philippine University

Maria Virginia Aguilar[*] and Genine Torres

De La Salle University-Dasmarinas, Dasmariñas, Cavite 4115, Philippines

[*]Corresponding author's e-mail: mgaguilar@dlsud.edu.ph

Received: *March 24, 2021* ***Revised:*** *May 2, 2021* ***Accepted:*** *June 1, 2021*

Abstract

Understanding students' experiences towards online learning can help in devising innovative pedagogical approaches and creating effective online learning spaces. This study aimed to solicit the perception of 80 undergraduate students in one of the leading private institutions in the Philippines towards the compulsory shift from a blended to fully online learning modality amidst the novel coronavirus (COVID-19) pandemic. The study used a descriptive research design involving online surveys which contained Likert scale items and open-ended questions assessing one's capacity for and the challenges to online learning, as well as the proposed recommendations for enhancing the overall online class experience. Descriptive statistics was used to group data across different subsets. Likewise, a content analysis of qualitative variables of the actual experiences of online classes using the school's learning management system was prepared. Results indicate four self-perceived challenges in online learning: technological and infrastructural difficulties, individual readiness, instructional struggles, and domestic barriers. The study recommends re-evaluation and modification of current online learning guidelines to address the aforesaid challenges and build a genuinely resilient model for technology-driven and care-centered education based on student recommendations and challenges experienced.

Keywords: COVID-19, Online classes, Philippines, Higher education, Students' perspectives

Introduction

The novel coronavirus (COVID-19) outbreak has compelled governments across the world to adopt stringent measures while still continuing operations in a context of ongoing radical uncertainty. While the virus strain was first documented at the end of December 2019 in Wuhan City, China, it was not until March 2020 when the World Health Organization (WHO) confirmed the phenomena as a global pandemic that may trigger a serious socioeconomic crisis (Ali, 2020; Cucinotta & Vanelli, 2020; OECD, 2020). Despite being in

the early stages, it has spread to over 200 countries within months and has posed unprecedented problems that continue to challenge social, political, economic, and educational landscapes.

The first case of COVID-19 in the Philippines was reported on January 30, 2020, where it was found that a 38-year-old Chinese national was admitted to San Lazaro Hospital in Manila after showing a case of pneumonia of unknown etiology (Mendoza, 2020; Vallejo & Ong, 2020). To mitigate the crisis at hand, the Philippine government passed the Republic Act 11469, otherwise known as *Bayanihan to Heal as One Act*, which provides a direct policy focusing on five specific components including capital support, a social amelioration program, medical support for frontlines, income support for displaced workers, and financial aid for agriculture sectors.

To oversee the recent developments in the COVID-19 situation and provide country-wide protocols, the mobilization of the Interagency Task Force (IATF) was put in place. One of the most drastic measures of the IATF was the Enhanced Community Quarantine (ECQ) from March 17, 2020, to April 1, 2020 which was subsequently extended until April 30, 2020. Thereafter, generalized community quarantine ensued. As part of the strategic approach in strengthening the public's consciousness, social distancing policies were imposed resulting in the temporary shutdown of non-essential businesses, a curfew, disruption of logistics operations, and temporary closure of all educational institutions.

Against the backdrop, the country's Commission on Higher Education (CHED) released a standard guideline pertaining to the massive acceleration on the use of pre-existing distance education programs and available e-platforms to ensure that learning may continue virtually (CHED, 2020). As a response, universities have adopted severe measures by capitalizing on the use of social applications and learning management systems (LMS).

In recent years, a large body of data concerning digital education shows that the virtual learning environment plays a significant role in enhancing student motivation and engagement, improving academic performance, and fostering a positive attitude towards learning (Alves, 2017; Baker & Gossman, 2013; Hampel et al., 2013; Mogus et al., 2012). However, the unexpected shift to the online learning environment has magnified the current vulnerabilities in the Philippine education system such as the availability of infrastructure, the virtual learning environment and use of platforms for interactions, and the preparedness of teachers, students, and parents.

The infrastructural requirement is an integral part of the migration process from onsite to online learning. This suggests that without proper access to mobile devices, personal computers, and a stable internet connection, the learning process may not be the same for all learners. As observed by Adnan and Anwar (2020), the use of smartphones for online learning is not effective as a significant amount of online content and interactive websites are found to be incompatible and unstable.

Additionally, modern platforms are found to be a critical element for effective online classes. With the education sector resorting to the use of various platforms, the stability and usability of each are put to the test. Lastly, as the COVID-19 pandemic has disrupted the lives of students, families, and teachers in distinct ways, their preparedness to shift to the online

platform has to be ensured. This appears to be the crux of the matter as the abrupt cancellation of classes has left schools with no choice but to implement online learning plans without the guarantee that stakeholders already have the required skills and technological gadgets needed.

A few recent research studies mentioned previously have investigated the opportunities and challenges associated with virtual learning. However, its overall quality must be explored further by examining the perspectives of the learners to understand better the difficulties experienced and how current policies may be redesigned as a response. The setting of this study was a distinctive Philippine private university where the usage of LMS commenced a decade earlier. This study aimed to check on the effectiveness of online learning during the COVID-19 pandemic.

Thus, this paper aims to solicit the point of view of undergraduate students regarding online classes that they attended during the enhanced extreme quarantine period in a private university. In particular, the study seeks to 1.) discuss how online classes proceeded in the context of the tertiary education system using a specific learning management system and the guidelines implemented by this private university; 2.) explain how students perceive online learning as to their readiness and that of the faculty, and 3.) articulate general recommendations on how to improve the delivery of online classes.

Methodology

Research design

This study used a descriptive approach to develop a distinct level of detail based on the actual experiences of the population (Creswell, 2003). The nature of this approach shows a commitment to understanding human experience in its natural state which has enabled the researchers to gather, analyze, and interpret the naturalistic data in relation to the online learning experiences during the quarantine period of the COVID-19 pandemic.

Participants

A total of 80 undergraduate students studying Liberal Arts who were enrolled for the academic year 2020-2021 in a private university served as the respondents of this study.

The respondents were chosen using a combination of purposive and convenient sampling techniques, thereby rendering generalizability void. As seen in Table 1, a typical student-participant is either a male (35%) or a female (65%) with an average age of 20 years old.

Table 1 Demographic profile of student-participants

Category	Subgroup	Number	Percentage
Age	20 years old	80	100%
Gender	Female	52	65%
	Male	28	35%

Category	Subgroup	Number	Percentage
Location	Urban	47	58.70%
	Suburban	33	41.25%
Internet access methods	Personal WIFI/ Broadband	43	53.75%
	Personal mobile data	34	42.50%
	Public WIFI networks	1	1.25%
	Internet Café	1	1.25%
	No internet connection	1	1.25%
Reliability of internet connection	Most reliable and stable	8	10%
	Reliable and stable	19	23.75%
	Somewhat reliable and stable	28	35%
	Unreliable and unstable	19	23.75%
	Least unreliable and unstable	6	7.50%
Device ownership	Personal smartphone	53	66.25%
	Personal desktop/laptop computer	16	20%
	Shared desktop/laptop computer	10	12.50%
	Personal tablet	1	1.25%
	Shared tablet	0	0.00%

The table reveals that regardless of the demographic subgroup, the student-participants have nearly the same experiences on the prevailing circumstances related to online learning during the Covid-19 outbreak. To gain access to the private institutions' LMS, 53.75% reported using personal WIFI or home broadband with 35% describing their internet connection as somewhat reliable and stable enough for synchronous and asynchronous activities.

While it is true that the school's LMS can be accessed using personal smartphones with wireless internet connection features and mobile data capability, some of the elements and assessment components call for the configuration afforded by a laptop or desktop. Aside from the smaller display screen available on a mobile device, there are more serious issues regarding lags, loading time, and crashing applications which greatly depends on the mobile device's specifications. Due to these issues, the use of personal smartphones may not be the best option for online classes, as has been found in studies elsewhere in the world, according to Bokayev et al., (2021), Himat et al. (2021), and Subekti (2021).

Data gathering procedure

The entire data gathering procedure of the study can be described by four particular phases outlined in Figure 1.

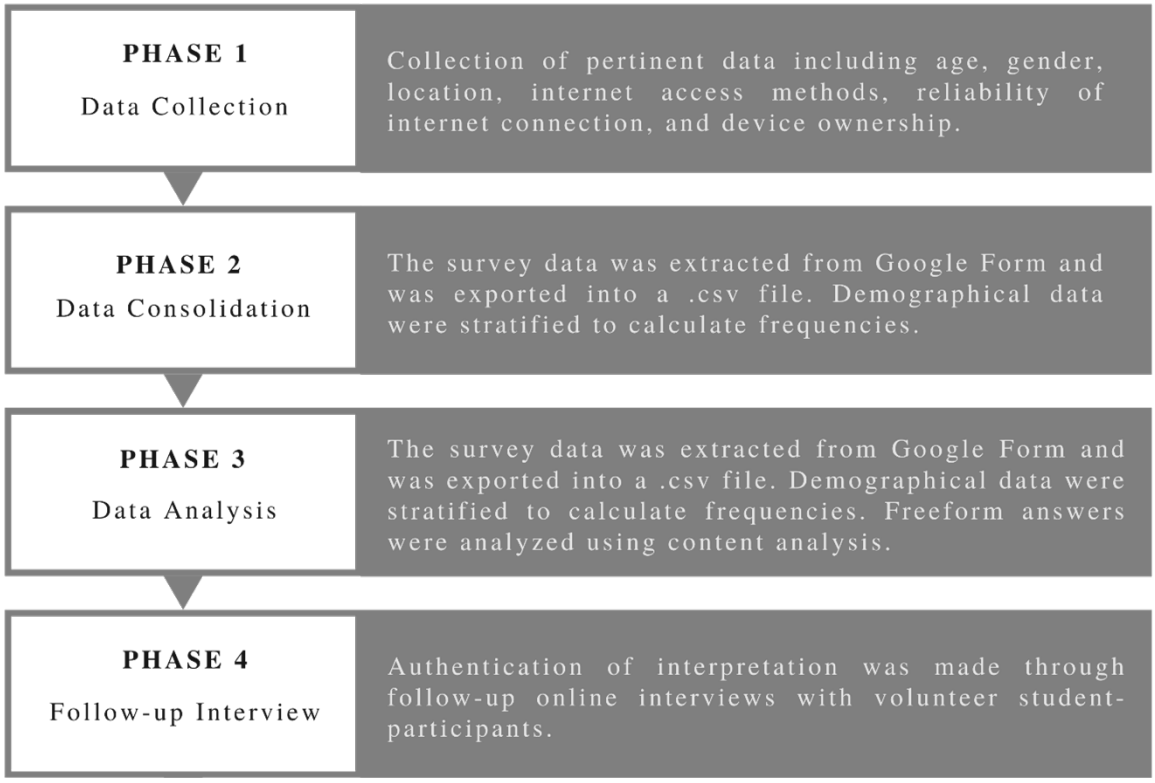

Figure 1 Four phases of the study with interpretation

In order to gather demographical data and raw data from the experiences of student-participants, two data types were collected using the researcher-developed 9-item survey instrument involving Likert scales, single-answer multiple-choice question types, and open-ended questions. It was sent electronically using Google Forms and the link was **made available** from (April 5, 2020) until (April 25, 2020). This completed Phase 1. In Phase 2, the consolidated data obtained through the Google Forms were exported into a .csv file and the information related to demographics and current learning conditions were stratified to calculate the frequencies and percentages of responses.

To make sense of voluminous data related to the view on online classes and the student-participants' suggestions, a content analysis following Erlingsson and Brysiewicz (2017) was done in Phase 3. This summative type of content analysis aims to count, compare, and interpret raw data through five steps including review of meaning unit, condensation, code development, code categorizations, and development of overarching themes. The purpose of Phase 4 was to cross-check data interpretation. Authentication was made through follow-up interviews with volunteer student-participants using video conferencing platforms such as Microsoft Teams and Zoom.

Apart from the permit obtained from the private university's administration, the overall study was guided by the university's research ethics guidelines for the conduct of research involving human respondents. Prior to accessing the whole survey, an informed consent

detailing anonymity, data privacy, and the rationale of the study was provided. It was also highlighted that their involvement was on a voluntary basis and that they could withdraw participation.

Data analysis

The raw data from the open-ended questions delves into the perceptions of the student-participants regarding online classes. Thematic content analysis was applied to provide a more detailed account of data based on the specific objectives of the study. This form of analysis was implemented to examine the emerging themes and codes of meaning gathered from the responses of the student-participants (Braun & Clarke, 2006).

For familiarization of the corpora, the extracted raw data were reviewed while taking note of the initial codes, categories, and patterns in responses. To make better sense of the data and ensure focus to the research aims, a condensation process was implemented by dividing the text into meaning units. As stated by Erlingsson and Byrsiewicz (2017), the condensation should reflect the shortened version of the response without losing the essence of the message. The procedure in condensation includes laying out the statement and adding the meaning units in parentheses as illustrated by the samples below:

> "*Hayss… Zoom, Teams, SB. Why can't we just rely on single one instead of using many? Besides, those are not user-friendly…*" (Platforms are hard to use)
>
> "*Unstable internet connection is my problem since I can't fully understand the instructions due to sudden loss of signal during discussions."* (Internet connection drops)

The next step is to develop codes and re-code based on condensed meaning units. The codes must be descriptive enough that it can be sorted into categories. This will then be followed by the development of emerging themes. After the categorization and the naming of themes, the researcher will refine the codes and use them as descriptions. Based on the codes, the following themes emerged: (1) Technological difficulties, (2) Domestic barriers, (3) Instructional struggles and, (4) Individual readiness.

Lastly, in order to check the accuracy of the thematic interpretation, a research authentication was made by interviewing volunteer student-participants and checking whether the emerging perceptions are correct.

Findings and discussion

Online class guidelines used by the university

To curb the spread of COVID-19 while responding to the needs of the students at the tertiary level, higher education institutions (HEI) have imposed modified instructional models and frameworks reflecting a technology-driven and student-centered course design structure. As reflected by Joaquin et al. (2020), Philippine institutions established frameworks combining synchronous and asynchronous activities through specific LMS. These learning management systems are purely accessible online and are adopting specific approaches to enhance student

motivation such as gamified lessons and real-time notification for assessments and collaborative actions.

Prior to the pandemic, the private university where the student-participants come from had already been utilizing innovative learning programs since 2010. The implementation of the LMS largely supports the community wherein teachers can distribute educational materials and facilitate learning, while students get to engage through gamified assessments and collaboration opportunities amongst themselves within each online subject. For a more holistic approach and enabling synchronous meetings, the school's LMS integrated selected features of the third-party educational tool known as Microsoft Office 365.

When the government issued a disruption of classes due to the COVID-19 outbreak, the private university released a standard framework based on the recommendations of the Philippine Accrediting Association of Schools, Colleges, and Universities (PAASCU). Table 2 below summarizes the standard time management guidelines for course scheduling equivalent to a total of 27 hours or one term in a three-unit course.

Table 2 Time management policy implemented by the private university

Activity	Time Allotment	Percentage of Allotment
Synchronous activity	4.5 hours	17%
Asynchronous activity	13.5 hours	50%
Individual/group Task	6 hours	≤25%
Formative assessment	4 hours	≤15%
Self-paced reading	3 hours	≤10%
Summative online assessment	3 hours	11%
Self-care	3 hours	11%
Extra time (asynchronous or self-care)	3 hours	11%

The synchronous activities with instructor presence include virtual chats and online collaboration through the LMS' discussion board as well as live video conferences and streaming through Microsoft Teams. On the other hand, activities with no real-time interaction involve formative assessments, individual or group tasks, and self-paced reading. To ensure that learning continues and that students are meeting the required competencies, online summative assessments are given through the LMS's integrated quiz system. Lastly, the institution also has added a three-hour self-care time wherein the student will have the chance to enjoy an online detox or join fun activities prepared by the university.

Student-participants' perception of online classes

The bulk of the students' work is on asynchronous activities, as outlined in the above table. However, the student- participants have reported a series of challenges affecting their perceptions of the effectiveness of online learning. The survey shows that 32.5% found

themselves on a neutral ground when it comes to their satisfaction with how the professors handled the online classes. This is further evidenced by comments from the survey, such as these:

> *"Professors should be considerate and give students individual activities based on their capabilities and current conditions...especially for those who cannot access online."*
> *"I hope that the professors will give online assessments and focus on uploading ppt lessons and paperwork than sending video clips which takes a lot of time to download."*
> *"…please consider the situation of other students most especially those who are running out of resources just to continue the classes online."*

The transition to online classes during a pandemic requires the use of technological equipment and high-speed internet connection in order to improve the scholastic experience. The examination of the student-participants' experiences, and perceptions have exposed that there are existing challenging points in the higher education sector in the Philippines. According to the corpora, the most impactful challenges include technological difficulties, domestic barriers, instructional struggles, and individual readiness of the students and teachers in shifting into a totally virtual environment (see Table 3).

Table 3 Summary of students' self-perceived challenges in online classes

Category	Description	Sample responses from students
Technological difficulties	Perceived challenges relating to unreliable internet access, limited access to devices, and LMS issues.	*"The notification of assessments and homework are not directly and real-time notified to us. It could cause us delay due to the fact that some of us do not have access to the internet all the time."* *"Internet connection fails sometimes maybe because of too much consumption since everyone is at home…"* *"Most of the time our internet is working slow. I having a hard time accessing any sites."* *"…sometimes we experienced slow internet connections assessment or projects that need to use laptops."* *"Due to the enhanced community quarantine, all internet cafes are closed, and I only use my mobile phone to get updates since I don't have personal laptops, computers, or even Wifi."*
Domestic barriers	Perceived challenges relating to financial distress, accommodation of household responsibilities, and limitations in physical	*"…even I am at our house I cannot give all of my time in self-studying because I have house duties and we have a home-based business."* *"If the online class will push through, this could cost them money because they have to spend money for internet load/ mobile data for every class."*

Category	Description	Sample responses from students
	space for online classes.	*"Some of my classmates cannot connect and access the internet due to absence of internet connection or do not have any money to buy load for data."* *"Some of us are doing work from home like 2 am -11 am 5 days a week."*
Instructional struggles	Perceived challenges relating to inadequate technical skills of instructors, excessive cognitive load, and pedagogical guidelines.	*"…instructions of assessments/activities are sometimes unclear."* *"We are having a hard time grasping a lesson since there are technical concepts that cannot be taught online."* *"Not able to understand the lesson in self-studying and loaded assessment."* *"…those (Zoom, Microsoft Teams, Schoolbook) are not user friendly and internet friendly because it consumes a lot of data…"*
Individual readiness	Perceived challenges relating to adjustments in online learning, mental health concerns, and physical health issues.	*"We're also experiencing anxiety because of the crisis and we're also thinking on how we will survive this."* *"…we still need to stress ourselves with the loaded amount of assessments."* *"…cannot focus on accomplishing my school paper works because of the anxiety of losing my job."* *"my struggle is with finding the motivation to study and work with the pandemic happening right now."*

Infrastructural and technological difficulties

Examination of the corpora has established that there are specific barriers to effective online learning such as the quality of internet connection, availability of devices, and the issues on the LMS platform. Generally, the content analysis reveals that there is an equity gap wherein some of the student-participants have access to modern devices and a stable internet connection, while others are struggling to survive with shared resources within the home and unstable connectivity.

It can be noted that while most are using WIFI or Broadband, the consistency of the connection still varied depending on the number of connected users to the network and this has major implications when accomplishing both synchronous and asynchronous tasks. As shared by three students, the availability of devices and quality of the internet connection varies from time to time as they are in a shared space where members of the family also make use of the same resources simultaneously. In this case, their engagement online and capacity to accomplish online assessments greatly depends on how often technical interruptions may arise. These findings are congruent with the analysis by Xhelili et al. (2021) which reports that online student engagement differs based on the availability and quality of the resources.

In terms of the LMS platform used by the private university in this study, it appears that the student-participants are less challenged by the shift to its full use since the school has already been implementing blended learning for a decade prior to the pandemic. Before activation of the LMS portal, each of the students was required to attend an annual orientation about the LMS where the latest features and affordances are introduced. Additionally, students were instructed to explore the knowledge base support software through Freshdesk and were directed to install the school's LMS mobile application.

However, certain issues have emerged recently, such as the inconsistencies of the push notifications on the mobile application, difficulties in uploading sizeable files for assessments, and sudden session timeouts causing the students' work to be deleted. With these issues, the student-participants find it challenging to accomplish bandwidth-intensive LMS activities. With this being said, the student-participants suggest that the private institution should consider the currently available online learning infrastructures of the students and that they provide instructors with specific guidelines on assessments and activities that have minimal technical and data requirements.

Domestic barriers

Divided attention can significantly disrupt online learning and based on the responses, the student-participants have encountered challenges such as financial distress, shared-space responsibilities, and limitations in at-home learning spaces. While the LMS is built to offer flexibility for self-paced learning, the students reported that they were not able to accomplish all the required tasks due to an unconducive learning environment brought about by frequent home distractions and incomplete infrastructural requisites.

Some of the student-participants shared in their responses that the major form of disruption they have experienced is related to temporary part-time jobs and remote work which they have started while still having classes. They deem this as a necessary move in order to help keep the family afloat during the COVID-19 pandemic. Due to challenges such as these, many student-participants have lost track of time and have found it hard to keep up with the growing number of time-consuming individual and group assessments.

At the same time, the student-participants also shed light on the idea that one of the reasons why they fail to participate in synchronous activities actively is that they were urged to take on a myriad of household-related roles such as providing help for the family business and guiding younger members of the family in their academic modules. The varied domestic experiences of the students suggest that there is significantly lower engagement and focus on online classes than the traditional classes. These results are congruent with the analysis of Chhetri (2020), Henaku (2020), and Blasiman et al. (2018).

Instructional struggles

Adopting a fully online class is further complicated by challenges such as the technical competencies of the instructors, the construction of online lessons and assessments, and the distinct pedagogical guidelines for each subject. In terms of the competencies of the university

instructors, the student-participants stated that they are somewhat satisfied with how they handled the classes. To further enhance the experiences and mastery of course content, the student-participants suggested that they should add more resources to elucidate technical lessons and to consider uploading or linking content that has compressed sizes for seamless downloading of materials. More importantly, 20 students proposed that instructors should consider creating individual assessments rather than complex group-based activities as they find it hard to communicate and collaborate with each other consistently online.

As for the instructional design, the student-participants shared that they were experiencing cognitive strain caused by online assessments and activities which call for complicated outputs such as video format projects or recordings. Additionally, their responses have shed light on the fact that they are finding it difficult to accomplish tasks for all subjects given that almost all of these have tight deadlines and fixed-scheduled submissions. To accommodate all the tasks, the student-participants find themselves being forced to go beyond the allotted time for a specific activity. If such a phenomenon continues, the students will feel burnout and unmotivated to learn through online classes due to academic stress (Fawaz & Samaha, 2021; Murphy et al., 2020).

Another major challenge that the student-participants had is the propensity of instructors in different platforms aside from the institutional-mandated ones. For instance, video conferencing is not just done through Microsoft Teams but also through Facebook Messenger and Zoom. One of the students reported that the platforms used by some faculty consume more data and are more power-intensive than the prescribed LMS, which causes his devices to overheat, not to mention that it is doubly expensive to use mobile data. In line with this, about 27 of the student-participants are proposing that the private university should consider adding to the guidelines a limit on the use of only one or two specific platforms for all subjects.

Individual readiness

The use of technology is inevitable for the new normal in the field of education. Based on the analysis of the student-participants' responses, it appears that there are concerns related to physical and mental impact of online classes. In terms of physical health concerns, most of the students are experiencing fatigue and eye strain from the sudden increase of screen time when using mobile phones, computers, laptops, and tablets. The same results can be found in the recent studies of Atmojo and Nugroho (2020) and Majumdar et al. (2020). As a result, the student-participants are proposing that the instructors should consider more profoundly the addition of more offline learning activities.

Feeling more isolated now than ever, the student-participants also reported that they are experiencing more anxiety since they are not able to fully collaborate with their classmates and groupmates, especially for activities. They are also finding it challenging to schedule a consultation session with their instructors. As a result, the students suggest that instructors should provide more individual activities and that they specifically post available consultation times.

Recommendations

With these study findings and after review of proposed interventions from the student-participants, the following recommendations are put forward:

On research

1. Regularly conduct a needs assessment survey to further determine which areas in online learning should be improved (platform, availability of technological resources, infrastructure improvements, readiness of users etc.)
2. Use several varied evaluations, specifically monitoring and summative evaluations, to ascertain the extent of effectiveness of online instruction in meeting the course curriculum objectives.
3. Conduct comparative research on the basis of gender, age, course and other demographic characteristics to pinpoint the learning cohorts who may be most in need of assistance.
4. Analyse training needs directed at aiding instructors in developing the most effective strategies to engage learners in the online setting.

On the guidelines of online classes

1. Implement appropriate asynchronous activities with minimal technical requirements.
2. Consider when to extend leniency to students related to deadlines and assessment due dates.
3. Create a synchronous sessions schedule in advance and integrate web conferencing links through the calendar interface of the school's LMS.
4. Implement teaching strategies where students will be given a grade based on their online interaction more so than answering a number of online assessments.
5. Consider uploading links, compressed documents, presentations, and pdf files whenever possible rather than large video or audio media files.
6. Provide offline activities for distance learning such as reading challenges or journaling tasks.
7. Specify consultation times for each class to ensure student-teacher dynamics.

Conclusions

The COVID-19 pandemic poses a huge challenge to the education system. The quarantine resulting from the COVID-19 pandemic has put remote studying and distance learning on the front line mandating the cessation of face-to-face instruction due to social distancing regulations. This requires the sudden switch, almost overnight, to online teaching and virtual education with no definite date yet for resumption.

The surge in online learning in the Philippines during the coronavirus outbreak highlights the importance of four interrelated factors: infrastructure (networks and devices),

online platforms (stability, interactions, and ability to improve), preparedness of teachers, students, and parents, and the home learning space.

The infrastructural requirement is essential in the successful migration from onsite to online learning. The importance of very good connectivity coupled with a desktop computer or laptop instead of mobile phones or mini-pads cannot be overemphasized. Platforms are also critical elements of effective online classes because these will dictate what content can be uploaded (lessons and assessments). Lastly, as the COVID-19 pandemic has disrupted the lives of students, their families, and teachers in different ways, their preparedness to shift to an online platform has to be ensured. This seems to be the crux of the matter because with the abrupt cancelling of in-person classes, there is no time for a crash course in online learning for both faculty and students. On the part of the students, they may perhaps be tech-savvy in some respects but are not necessarily able to transfer that knowledge and experience to the online learning environment. On the part of the faculty, learning how to best navigate the LMS has become a challenge for most. Finally, transforming one's home space into a conducive learning space has been a challenge in many different ways. Overall, because a myriad of challenges await students who have been forced to use online platforms for learning during the COVID 19 pandemic, schools and universities must step up and keep improving their online instruction.

References

Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. *Online Submission, 2*(1), 45-51.

Ali, I. (2020). The covid-19 pandemic: Making sense of rumor and fear: Op-ed. *Medical Anthropology, 39*(5), 376-379.

Alves, P., Miranda, L., & Morais, C. (2017). The influence of virtual learning environments in students' performance. *Universal Journal of Educational Research, 5*(3), 517-527.

Atmojo, A. E. P., & Nugroho, A. (2020). EFL classes must go online! Teaching activities and challenges during COVID-19 pandemic in Indonesia. *Register Journal, 13*(1), 49-76.

Barker, J., & Gossman, P. (2013). The learning impact of a virtual learning environment: students' views. *Teacher Education Advancement Network Journal, 5*(2), 19-38.

Blasiman, R. N., Larabee, D., & Fabry, D. (2018). Distracted students: A comparison of multiple types of distractions on learning in online lectures. *Scholarship of Teaching and Learning in Psychology, 4*(4), 222.

Bokayev, B., Torebekova, Z., Davletbayeva, Z., & Zhakypova, F. (2021). Distance learning in Kazakhstan: estimating parents' satisfaction of educational quality during the coronavirus. *Technology, Pedagogy and Education, 30*(1), 27-39.

CHED. (2020). *Guidelines on the implementation of flexible learning* (pp. 1-10). Philippines: Commission on Higher Education.

Chhetri, C. (2020). *"I Lost Track of Things" Student experiences of remote learning in the Covid-19 pandemic* (pp. 314-319). In Proceedings of the 21st Annual Conference on Information Technology Education.

Cucinotta, D., & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. *Acta Bio Medica: Atenei Parmensis, 91*(1), 157.

Dong, E., Du, H., & Gardner, L. (2020). An interactive web-based dashboard to track COVID-19 in real time. *The Lancet Infectious Diseases, 20*(5), 533-534.

Erlingsson, C., & Brysiewicz, P. (2017). A hands-on guide to doing content analysis. *African Journal of Emergency Medicine, 7*(3), 93-99.

Fawaz, M., & Samaha, A. (2021). E-learning: Depression, anxiety, and stress symptomatology among Lebanese university students during COVID-19 quarantine. *Nursing Forum, 56*(1), 52-57.

Hampel, R., & Pleines, C. (2013). Fostering student interaction and engagement in a virtual learning environment: An investigation into activity design and implementation. *Calico Journal, 30*(3), 342-370.

Henaku, E. A. (2020). COVID-19 online learning experience of college students: The case of Ghana. *International Journal of Multidisciplinary Sciences and Advanced Technology, 1*(2), 54-62.

Himat, A. N., Takal, M. H., & Hakimi, M. F. (2021). Afghan students 'satisfaction from online learning during covid-19 at Kandahar University, Kandahar, Afghanistan. *American International Journal of Social Science Research, 6*(1), 16-29.

Joaquin, J. J. B., Biana, H. T., & Dacela, M. A. (2020). The Philippine Higher Education Sector in the Time of COVID-19. *Frontiers in Education, 5*(1), 208.

Majumdar, P., Biswas, A., & Sahu, S. (2020). COVID-19 pandemic and lockdown: cause of sleep disruption, depression, somatic pain, and increased screen exposure of office workers and students of India. *Chronobiology International, 37*(8), 1191-1200.

Mendoza, R. U. (2020). Economics of lockdown: Insights on building back better in post-pandemic Philippines. *Perspective, 74*, 1-8.

Mogus, A. M., Djurdjevic, I., & Suvak, N. (2012). The impact of student activity in a virtual learning environment on their final mark. *Active Learning in Higher Education, 13*(3), 177-189.

Murphy, L., Eduljee, N. B., & Croteau, K. (2020). College student transition to synchronous virtual classes during the COVID-19 pandemic in Northeastern United States. *Pedagogical Research, 5*(4), em0078.

OECD. (2020). *OECD economic outlook, interim report September 2020*. Paris: OECD Publishing.

Subekti, A. S. (2021). Covid-19-triggered online learning implementation: Pre-service English teachers' beliefs. *Metathesis: Journal of English Language, Literature, and Teaching, 4*(3), 232-248.

Vallejo Jr, B. M., & Ong, R. A. C. (2020). Policy responses and government science advice for the COVID 19 pandemic in the Philippines: January to April 2020. *Progress in Disaster Science, 7*, 100115.

Xhelili, P., Ibrahimi, E., Rruci, E., & Sheme, K. (2021). Adaptation and perception of online learning during COVID-19 pandemic by Albanian University students. *International Journal on Studies in Education, 3*(2), 103-111

Xu, D., & Jaggars, S. S. (2013). *Adaptability to online learning: differences across types of students and academic subject areas (CCRC Working Paper No. 54)*. New York: Community College Research Center, Teachers College, Columbia University.