Managing Barriers to Online Learning: Towards a Framework for Resilient and Inclusive Virtual Classroom

Basilia E. Blay
School of Multidisciplinary Studies,
De La Salle-College of Saint Benilde, Philippines
E-mail: basilia.blay@benilde.edu.ph

Aldino J. Gonzales
School of Multidisciplinary Studies,
De La Salle-College of Saint Benilde, Philippines
E-mail: aldino.gonzales@benilde.edu.ph

Isagani G. Triste
School of Multidisciplinary Studies,
De La Salle-College of Saint Benilde, Philippines
E-mail: Isagani.triste@benilde.edu.ph

Abstract
This paper identifies the barriers to online learning faced by students and explores the strategies they employ to manage them in the face of this international crisis. From the narratives of the learners and the literature, a framework for a resilient and inclusive virtual classroom is developed. A descriptive mixed-method design is employed. Data are gathered from the students during the second term of SY2020-21 using a researchers-made questionnaire which is content, and face validated by experts and tested for reliability and consistency. The questionnaire is deployed online using the college's official learning management system.In conclusion, the barriers to online learning as accounted for by the students are classified in this research into personal, educational, relational, technological, and social. On the other hand, the coping mechanisms employed are social support and accepting responsibility. At the center and front of the students' struggles and successful handling of this emergency remote learning are the teachers. Thus, the respondents' barriers are dealt with primarily by themselves and their teachers who unleash the pedagogy of care that made them resilient during this pandemic. A caring and accommodating teacher and strong and flexible online learners are the primary components of a resilient and inclusive virtual classroom.The framework can be a template for designing future virtual classrooms and capacity-building activities to prepare teachers and learners for major education disruptions like this pandemic.
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1. Introduction
The cancellation of face-to-face classes in the year 2020 marked a significant experience among learners and teachers that they will remember for the rest of their lives. Teachers had to rapidly adapt to a different modality of teaching that ensures the safety of the learners. At the same time, learners had to struggle with learning through online classes.

Some did not take the impact of the pandemic on education seriously. There was a semblance of denial from teachers and learners wanting to continue their classes online but following the norms of the face-to-face modality. School administrators simply wanted the learners to continue attending online classes without integrating the right pedagogy for full online instruction-students must continue learning and teachers must continue teaching. This makes a virtual classroom problematic. These two agents of a virtual classroom must be prepared in terms of navigating the potential of technology in the delivery and reception of learning.

Online teachers and learners encounter barriers that impede the delivery of quality outcomes. These barriers challenge their resilience to withstand the impact of the pandemic. Thus, it is imperative that the identified barriers and how teachers and students managed them be the basis for a framework for a resilient and inclusive virtual classroom.

The scope of the paper is focused specifically on the people who are at the forefront of education, and who are operating within the context of a virtual classroom. As a matter of limitations, the paper did not include the college's school management and community partners.

1.1 Review of Literature & Related Studies
The studies reviewed in this section are grouped according to themes such as: opportunities in online learning

during the pandemic, building/enhancing resilience in online learning, barriers to online learning and coping mechanisms, and the development of the framework for education during the COVID-19 pandemic.

Opportunities in online learning during the pandemic

Escobar and Morrison (2020) have found out that teachers discovered opportunities to learn new technologies during the pandemic, but these opportunities were overshadowed by the challenges they encountered. They are forced to attend skills development and workshops for a short period of time. Despite these challenges, partnerships between educational institutions have grown and strengthened during this pandemic (Donitsa-Schmidt & Ramot, 2020).

Meanwhile, in India, they implemented an Open and Distance Learning (ODL) system to answer the challenges in education. Using this system, their educators were able to deliver their lessons real-time and create a more interactive learning environment. The work-from-home setup has become relevant and using online platforms effectively trained teachers and students to be more ready for digital learning environments (Jena, 2020). The pandemic led us to many changes in the development and learning of new technologies (Brammer & Clark, 2020). Most of us have encountered challenges but also learned how to transform these challenges into opportunities that improved the educational system.

Building/Enhancing Resilience in Online Learning During the Pandemic

In response to the need to develop resiliency among learners and teachers, a paper was published providing us with five tips for building resilience in a time of the pandemic. These are: (1) Find and follow your values; (2) Be kind to yourself; (3) Take back control; (4) Do boring self-care; and (5) Connect creatively (*Five Tips for Building Resilience during the Pandemic*, 2020).

An article published by the Department of Education in Kentucky, *Characteristics of Highly Effective Teaching and Learning*, enumerated six traits of students which can be associated with those that came out from the data being gathered in this research. According to this article under learning climate, students (1) accept responsibility for his/her own learning; (2) actively participate and are authentically engaged; (3) collaborate/team with other students; (4) exhibit a sense of accomplishment and confidence; (5) take educational risks in class; and (6) Practice and engage in safe, responsible and ethical use of technology (*Kentucky Department of Education*, 2020).

Managing the Barriers to Online Learning During the Pandemic

An investigation done by Kee (2021) on the impact of COVID-19 on graduate students' emotional and psychological experiences, mentioned locating adequate space to study and getting in touch with others for emotional support were part of their coping strategies. Moreover, some students in Ahmedabad and Mumbai in India revealed that to cope with this pandemic, they try to stay focused by enrolling themselves in some online courses so that they would have more varied technical skills. Others said that they are taking a lot of creative activities and learning new past-times like music, painting, scripting, cooking, etc., and teaching math to younger sibling. Some have even started voluntary internships with companies. Some students even expressed that a different manner of coping with academic stress is to go online, spend most of their time on social media, then e-connecting with others (Chandra, 2020).

Development of Framework for Education During the Pandemic

The framework of Yates, et al. (2020) gathered data from 1,985 high school students in New Zealand during this pandemic. Participants were in their final two years of schooling because according to the authors people over 16 years old can independently decide to take part in research and are likely to have well-informed opinions and the ability to articulate these objectively. Data were gathered through a questionnaire using the electronic tool Qualtrics.

Results show that aspects of Kearney et al.'s framework were reflected in the participants' experience, but further characteristics were identified. Authenticity and collaboration in Kearney et al.'s (2012) model facilitated learning but in Yates et al.'s (2020) work participants valued supportive pedagogies and motivational strategies which enabled academic progress and enhanced well-being. Effective use of technology-mediated supportive pedagogies. Thus, Yates et al. (2020) recommend a framework of learning at home should have a supportive pedagogy at the center. Thus, the framework of Yates et al. (2020) which highlights supportive pedagogy mediated by technology could be applied during future emergency events which require school closure.

1.2. Research Gap

This sudden shift to virtual learning due to the COVID-19 pandemic affects the teachers' enjoyment of teaching and the student's engagement and excitement in learning. While we know what works well for students, during this unique educational challenge brought about by the pandemic, we should also consider what works in learning for educators.

All the studies presented in this paper were found to be related to this research as each dealt with online learning experiences during the pandemic, barriers in online learning and how students managed them, inclusive pedagogies employed by online teachers, and some theories and frameworks in online learning. Though there is

already a growing body of literature related to education and COVID-19, mostly are at the basic education level. Very few studies are about the framework for the current emergency online learning, and none dealt with a model virtual classroom that is both inclusive and resilient. The current study focused on the tertiary level and used the combined online inclusive pedagogy of teachers and how both teachers and students managed the barriers to online learning to come up with a framework for a resilient and inclusive virtual classroom, this might be the first to be done during this pandemic. Thus, there is a need to fill this gap in the literature as this can play a vital role in a sustained successful online education throughout this COVID-19 pandemic and in the forthcoming occurrences of similar education disruptions as big as this or other school closures due to unforeseen natural or man-made calamities.

1.3. Theoretical Framework

This research is anchored on theoretical frameworks that delineate how students learn, and those which describe the essential context in which they are most motivated to learn in times of emergencies such as this pandemic. The foregoing provided a roadmap for how the researchers make sense of the pandemic experience, help them navigate, answer questions, and provide focus on the essentials.

To begin with, this research is anchored on the theory of inclusion which according to McLeskey, Hoppey, Williamson, & Rentz (2004, as cited in Al-Shammari et al., 2019), determines appropriate educational practices and strategies used in general education schools by offering a variety of educational services to help all students best learn according to their abilities or educational needs. In support of the theory of inclusion is Albert Bandura's social learning theory which posits in part, and highlights dynamic interaction between people, that learning takes place in the context of social interactions (Powell, 2021).

For Jack Mezirow's transformative learning theory, learning starts with a disorienting dilemma or cognitive dissonance. In this global health crisis, a student is not able to reconcile his or her present situation when learning relative to pre-pandemic experience. Adapting to new learning may no longer be sufficient (Saskia & Fleming, 2020). While David Kolb's theory of experiential learning argues that students' learning begins with a concrete experience, then reflecting on that experience, thinking from that experience, and experimenting or doing what students have learned from the experience (Roberts, 2016).

Finally, according to the self-determination theory, motivation for learning happens if students' psychological needs like autonomy, competence, and relatedness are fulfilled. When students have a sense of feeling of self-sufficiency or are self-governed, feel capable and efficient to learn, and feel connected or interacted with, they are most motivated to engage in learning (Chiu, 2021).

1.4. Conceptual Framework

While online learning is not new, this sudden shift to virtual teaching and learning mode due to COVID-19 was a novel and unexpected experience for both teachers and students who normally go to school to attend classes. The timing was unplanned and caught everybody by surprise. As schools and teachers in the country have professional flexibility, there is likely to have been a variety of pedagogical practices and inclusive approaches that teachers employed in their respective virtual classrooms. The same is true with the students, they used varied coping strategies to minimize the impact of the pandemic on their learning. Thus, this research tried to put together the inclusive pedagogical approaches used by the teachers and the various coping mechanisms employed by both teachers and students which made them respectively inclusive and resilient during this pandemic. Such inputs were used to come up with a framework for an inclusive and resilient virtual classroom that can be a model during and beyond this pandemic. All of these are captured in the following conceptual framework.

Figure 1

Conceptual Framework of the Study
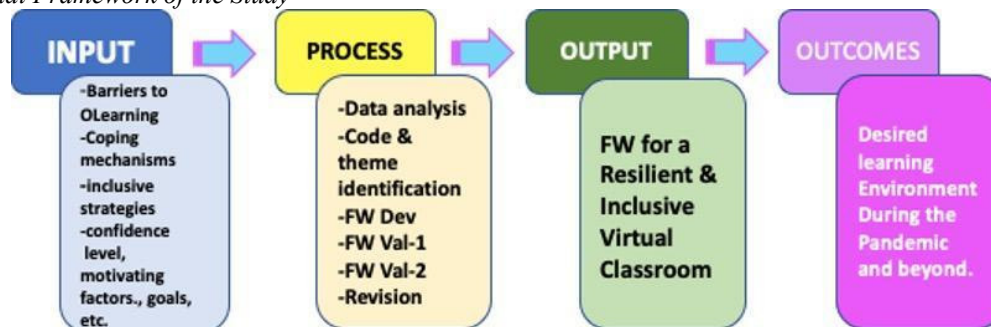
The model consists of the input, process, output, and outcomes (IPOO). The input consists of the barriers to online learning, the coping mechanisms employed by the respondents to overcome the barriers as well as the

inclusive strategies employed by the teachers. The confidence level of the students, their motivators, and their goals to engage in online learning are included, for the teachers to determine the appropriate approach, strategies, and resources needed in a virtual teaching and learning environment.

1.5. Research Questions
The goal of this research is to come up with a framework for a resilient and inclusive virtual classroom that can be a model for online educators during and beyond this pandemic. Specifically, it will try to answer the following research questions:
1. What are the barriers to online learning during this pandemic identified by both teachers and students?
2. What are the strategies employed by both teachers and students to manage the barriers to online learning during this pandemic?
3. What is the level of confidence of the respondent students in managing the barriers to online learning during this pandemic?
4. Is there a significant difference in the level of confidence in managing the barriers to online learning during this pandemic between male and female students?
5. What is the context of a resilient and inclusive virtual classroom?

The hypothesis is tested at $\alpha = 0.05$.

2. Research Design
The goal of this research is to develop a framework for a resilient and inclusive virtual classroom. This is achieved by employing a descriptive research design utilizing the mixed method. The basic premise of this methodology is that such integration permits a more complete and synergistic utilization of data than separate quantitative and qualitative data collection and analysis (Wisdom, & Creswell, 2018).

2.1. Sampling and Data Gathering Techniques
Sampling is purposive because the researchers particularly chose Higher Education teachers and students who are engaged in teaching and learning during this pandemic. Thus, respondents were from a private tertiary education in Manila, and from the general education programs of the college. All students enrolled in general education courses from the participating HEI were encouraged to answer the online questionnaires distributed through the LMS of the college, during the third term of the school year 2020-21. However, participation is voluntary. Permission to conduct the study was sought by the researchers from the dean of the school and from the faculty assigned to the selected section, who were also requested to inform and encourage the students to participate in the survey.

Meanwhile, the teacher-participants in the FGD were selected through the help of the respective Chairpersons of the seven areas of the School of Multidisciplinary Studies. They were the top performers of the area who were consistently rated very satisfactory to outstanding by their students. Participation was voluntary, and they know they can withdraw anytime.

2.2. Instrument and Data Analysis
Data from the students were collected online using a researcher-made questionnaire which was content, and face validated by experts and tested for validity and reliability. The questionnaire has seven statements that determine the level of confidence of the students in managing the barriers to online learning. It uses a five-point scale such as 5-completely true, 4 mostly true, 3-sometimes true, 2-mostly false, and 1-completely false, and four open-ended questions which ask about the challenges, coping strategies, motivation in attending online classes, and how they want to be taught in an online setting. The level of confidence in managing the barriers to online learning was deemed important, for the teachers to know how they are going to motivate students and what type of challenges are most common to the learners during this pandemic. Validation by experts and revision of the instruments were done.

Table 1

Cronbach's Alpha Interpretation

Cronbach's Alpha (α)	Internal Consistency/Reliability
$\alpha \geq 0.9$	Excellent
$0.8 \leqslant \alpha < 0.9$	Good
$0.7 \leqslant \alpha < 0.8$	Acceptable
$0.6 \leqslant \alpha < 0.7$	Questionable
$0.5 \leqslant \alpha < 0.6$	Poor
$\alpha < 0.6$	Unacceptable

According to Glien and Glien (2003), Cronbach's Alpha (α) is a test reliability technique that requires a test administration to provide a unique estimate of the reliability of a given test. It is the average value of the reliability coefficients one would obtain for all possible combinations of items. The closer Cronbach's Alpha Coefficient to 1.0, the greater the internal consistency/reliability of the items in the scale. The student questionnaire in this research has a Cronbach's Alpha of 0.748, which is acceptable. SPSS was used to process the gathered data.

Responses from research questions one and four are qualitative data. The data were content analyzed and ranked according to the frequency of responses; for research questions two and three, the mean and standard deviations were generated, ranked, and then analyzed.

Table 2

The mean interpretation for analyzing quantitative data

| Likert Scale	Range	Interpretation
5	4.51 – 5.00	Completely True
4	3.51 – 4.50	Mostly True
3	2.51 – 3.50	Somewhat True
2	1.51 – 2.50	Mostly False
1	1.00 – 1.50	Completely False

Lastly, the hypothesis that "There is no significant difference in the level of confidence in managing the barriers in online learning during this pandemic between male and female students", was tested using a t-test for independent samples and at α=0.05 level. This is to find out if gender has something to do with the perceived level of confidence in managing the barriers so that teachers will be aware of which gender to focus more in terms of motivation and monitoring.

The focus group discussion of outstanding teachers was a very important source of data to answer all qualitative research questions. Finally, the context and attributes of the proposed framework for a resilient and inclusive virtual classroom were taken from the results of the analysis of all the responses of both teachers and students, and from the existing literature of similar studies.

2.3. Development of Framework for a Resilient and Inclusive Virtual Classroom

There are four steps that the researchers went through in developing the proposed framework for a resilient and inclusive virtual classroom. These are depicted in Figure 2. Step 1 is to find out the barriers, and the mechanisms employed by the teachers and the students to manage the barriers. Step 2 is the analysis of data through code and theme identification. Step 3 is the construction or the development of the framework, and Step 4 is the validation and refinement which involves a lot of revisions and iterations including visual, structural, and contextual changes.

Figure 2
Framework Development Process
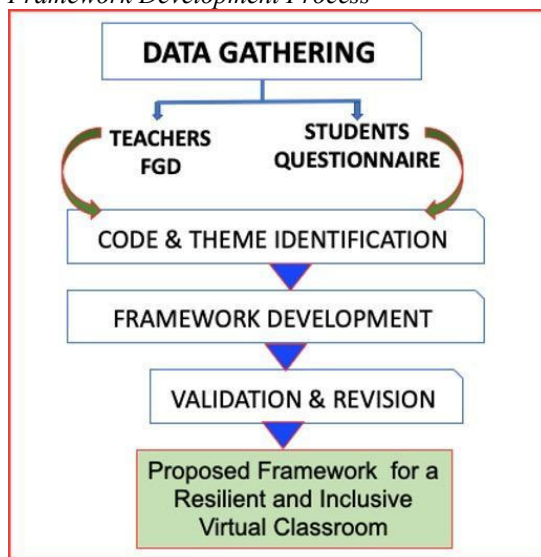
3. Results and Discussions

Results and discussions are presented in this section according to the order of research questions and the hypothesis.

RQ1: What are the barriers to online learning during this pandemic identified by both teachers and students?

The barriers or challenges to online learning identified by the respondents were classified into Technological, Psycho-emotional, Pedagogical/Educational, and Contextual challenges.

RQ2: What are the strategies/coping mechanisms employed by both teachers and students to manage the barriers to online learning during this pandemic?

The coping mechanisms employed by the respondents are: for students: accepting responsibility by improving connectivity through upgrading internet subscription and prioritizing school & household responsibilities; seeking social support by doing self-care, like exercise and diet, prayer/meditation, and communicating with other students, family, friends, classmates, and teachers; for teachers: empathize, embrace the situation, show shared responsibility, convey genuine enthusiasm in teaching, real-time communication, giving of quick/correct feedbacks, create multiple communication channels, incessant reminders, autonomy: no closing of drop boxes, no deductions for late submissions, and freedom to choose to work alone or with a partner; avoiding responsibility: some students don't care about the barrier and just ignored it because they don't know what to do about it.

RQ3: What is the level of confidence of the respondent students in managing the barriers to online learning during this pandemic?

Table 3 shows the mean responses of students in seven statements measuring their level of confidence that they can manage the challenges or the barriers of fully online learning due to this pandemic.

Table 3
The Level of Confidence in Managing the Barriers to Online Learning

Statement	M	F	Overall	Level of Confidence
Q1: I always feel confident about my talents and skills in online learning.	3.37 **SC**	3.12 **SC**	3.23 **SC**	Somewhat Confident **SC**
Q2: My family, friends, and significant others rightly motivate me in my online classes.	3.47 **SC**	3.70 **C**	3.59 **C**	Confident **C**
Q3: I find my co-online classmates supportive of me.	3.47 **SC**	3.89 **C**	3.71 **C**	Confident **C**
Q4: I have sufficient technological tools and gadgets to attend my online class.	4.09 **C**	4.14 **C**	4.11 **C**	Confident **C**
Q5: I have sufficient access to the internet to sustain my attendance to my online class.	3.70 **C**	3.83 **C**	3.77 **C**	Confident **C**
Q6: The negative current issues do not affect my concentration in my online classes.	2.57 **SC**	2.44 **NC**	2.49 **NC**	Not Confident **NC**
Q7: My fear for the health of my loved ones during this pandemic does not affect my concentration in my online classes.	2.42 **NC**	2.40 **NC**	2.40 **NC**	Not Confident **NC**
OVERALL	3.30 **SC**	3.36 **SC**	3.33 **SC**	Somewhat Confident **SC**

Respondents showed confidence that they have sufficient technological tools and internet access, and that they have support from significant others in their lives such as family, friends, and classmates. However, they have little confidence in their skills to navigate online learning. Moreover, they are not confident that the current negative issues and the fear for the health of their loved ones will not affect their performance and concentration in online classes.

RQ4 and Hypothesis: Is there a significant difference in the level of confidence in managing the barriers to online learning during this pandemic between male and female students?

Table 4 shows the test for the significance of the difference in the level of confidence in managing the barriers to online learning between male and female respondents. The t-test for independent samples was done at $\alpha=0.05$ level.

Table 4
The significance of the difference in the level of confidence to manage the barriers to online learning between males and females.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
Q1	Equal variances assumed	1.976	.161	2.162	211	.032	.24982	.11554		.02205	.47759
	Equal variances not assumed			2.143	183.390	.033	.24982	.11659		.01980	.47984
Q2	Equal variances assumed	5.208	.023	-1.665	211	.097	-.22970	.13798		-.50170	.04230
	Equal variances not assumed			-1.610	164.780	.109	-.22970	.14271		-.51148	.05207
Q3	Equal variances assumed	.855	.356	-3.195	211	.002	-.41519	.12994		-.67134	-.15903
	Equal variances not assumed			-3.188	188.223	.002	-.41519	.13023		-.67208	-.15829
Q4	Equal variances assumed	.356	.551	-.354	211	.723	-.04721	.13319		-.30977	.21535
	Equal variances not assumed			-.358	196.167	.721	-.04721	.13188		-.30730	.21288
Q5	Equal variances assumed	3.022	.084	-.976	211	.330	-.13402	.13735		-.40478	.13675
	Equal variances not assumed			-.950	169.965	.344	-.13402	.14110		-.41255	.14452
Q6	Equal variances assumed	2.974	.086	.898	211	.370	.13755	.15310		-.16426	.43936
	Equal variances not assumed			.879	173.764	.381	.13755	.15649		-.17132	.44642
Q7	Equal variances assumed	.728	.394	.120	211	.905	.02057	.17142		-.31735	.35849
	Equal variances not assumed			.119	182.587	.906	.02057	.17316		-.32108	.36222

Among the seven statements, only number 1 (I always feel confident about my talents and skills in online learning) and 3 (I find my co-online classmates supportive of me), showed a significant difference in the responses when grouped according to gender. The rest of the statements such as statements 2, 4, 5, 6 & 7 showed no significant difference in the responses.

Hypothesis: The hypothesis was tested at $\alpha = 0.05$ level.

There is no significant difference in the level of confidence in managing the barriers to online learning during this pandemic between male and female students.

Table 5 shows the t-test results for independent samples which comprise the means and standard deviations of the responses of male and female respondents. The table shows the p-Value of 0.839 which is greater than $\alpha = 0.05$.

Table 5: The Significant Difference in Managing the Barriers to Online Learning During This Pandemic Between Male and Female Learners

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Opportunities	Male	89	3.2989	.59908	.06350
	Female	124	3.3589	.59920	.05381

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
Opportunities	Equal variances assumed	.041	.839	-.721	211	.472	-.05999	.08324		-.22408	.10409
	Equal variances not assumed			-.721	189.751	.472	-.05999	.08323		-.22418	.10419

The result shows that the null hypothesis that, "There is no significant difference in the level of confidence in managing the barriers in online learning during this pandemic between male and female students", failed to be

rejected, p(0.839) > α = 0.05. Though the mean confidence of females is higher (3.36) than that of males (3.30), the difference when tested is not significant.

RQ5: What is the context of a resilient and inclusive virtual classroom?

Below is the framework for a Resilient and Inclusive Virtual Classroom. The details are explained in brief in the succeeding paragraphs.

Figure 3

Framework for a Resilient and Inclusive Virtual Classroom
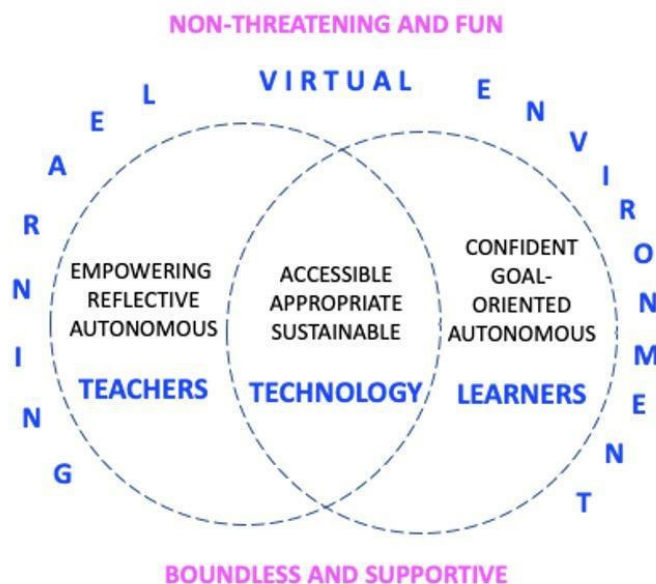
The context of a resilient and inclusive virtual classroom is the framework that we created out of the management of the barriers to online learning as expressed by the respondents. This virtual classroom is characterized by its being (1) non-threatening; (2) fun; (3) boundless; and (4) supportive. These are the desired outcomes of a virtual learning environment that is highlighted in the framework.

Non-threatening–the virtual classroom must be a safe space for teachers and learners. The conduct of online classes should not pose any threat to both teachers and learners. Technology becomes less threatening on the part of the teacher if proper training and structured facilities are in place. On the other hand, learners must feel safe in their virtual classes. Far from being physically harmed, learners would be safe in the online platform by observing ethics on the internet we call netiquette. These are norms that observe mutual respect among the agents of a virtual classroom, the teachers, and the learners.

Fun–Fun in an online classroom refers to the use of humor as a pedagogical tool. In the article of Donna Gayle Anderson as cited by Tom Armbrecht (2021), Taking the "distance" out of Distance Education: a Humorous Approach to Online Learning, she said that humor in class creates a personalized environment that motivates learners to engage more in class (using humor in online learning | resilient educator, 2018).

Furthermore, it says, "humor increases positive perceptions of the students about the online learning environment". Thus, it contributes to the strengthening of resilience among learners and teachers. Our respondents articulate - "I want less overload work and more fun"; "I want to have more fun in teaching"; "to have some fun activities"; "fun and exciting"

Boundless–The online learning environment has brought down the walls that divide and the parameters that limit the flow of engagement among the agents of education. Anytime and anywhere are the hallmarks of online learning. The term "boundless" in the framework refers to a description of a learning environment that is extensive beyond any limitations of time and space. "Even if you tell your students that you are not available 24/7, you get to receive messages from them any time of the day, literally at any time of the day. And when I see their messages, I feel compelled to reply right away"; "sometimes it is difficult when you are at home. It's difficult to distinguish your responsibility at home and your responsibility in your class". Due to its being boundless, management of communication is necessary to properly address the legitimate concerns of teachers and learners.

Supportive–due to the limitations of physical interaction among teachers and learners and sometimes accessibility to learning resources, a support system among them has to be in place. Teachers and learners usually explore different channels of communication in support of one another's academic concerns.

These outcomes were produced by the interplay of the three components of the framework namely, (1) the agents, (2) technology, and (3) the virtual learning environment that they created.

Agents–this refers to the ones who are basically at the forefront of education, the teachers, and the

learners. Their dynamic interactions with technology create our desired virtual learning environment. These agents possess characteristics that were antitheses of the barriers identified by the teachers themselves and learners.

Teachers: Empowering–this characteristic of a virtual teacher is an offshoot of several barriers identified by the learners and practiced by outstanding teachers. An empowering virtual teacher challenges learners to improve their learning outcomes. Several learners noted the inability of some teachers to provide immediate feedback on their outputs. Some learners commented; "Teachers should provide feedback and not just give us bad grades without explaining why or without giving us a chance to improve our work."

Part of teachers' empowerment of learners is their recognition of the way the learners acquire learning through their initiatives. The learners' exercise of autonomy is further enhanced by an empowering teacher. This could induce (1) resiliency that allows the learners to withstand any challenges of academic life and (2) confidence by comfortably expanding their thresholds, limitations, and comfort zones in their academic endeavors. Empowering teachers establishes trust among the learners.

Another important quality of a teacher is the capacity to reflect on the right course of action. Reflective–A reflective teacher considers other factors affecting the learners' engagement with knowledge. The teacher does not view the learners as a complete product of their own. The teachers see them as a product of his unique engagement with the world. When the learners fail to satisfy the requirements of the course, a reflective teacher does not look at the failure as emanating and produced solely by the learners. Prompt feedback is necessary here.

Autonomy-Literature supports teacher autonomy. In research published by Purna Bahadur Kadel, Challenges of Teacher Autonomy for Professional Competence, (interdisciplinary research in education volume 5, issue 1 & 2, 2020: 39-46), autonomy is necessary for the practice of professional competence of a teacher. Given the context of a virtual classroom, the teacher is provided with a degree of control to respond to the learning concerns of the learners. Teachers need to make autonomous decisions about how they plan to teach; what they practice; and how they can improve their teaching (Dikilitas & Griffiths, 2017).

Teachers exercise autonomy in terms of their (1) delivery of instruction, and (2) approaches to the learners. (1) Delivery of instructions–while instructions were basically patterned after the institutionally prescribed syllabus, the teachers are more judicious in choosing appropriate online strategies for delivering instructions.

(2) Approaches to learners–the teacher makes a reflective effort to determine the dispositions of his learners. From this reflective effort of the teacher comes his approach to the unique conditions of learners. In the face-to-face modality, it would be easy for the teachers to sense the level of attentiveness of their learners. In virtual classes, the learners cannot be forced to open their cameras for the entire duration of their period. Thus, the teacher must try different approaches in relating to his learners in order to ascertain that they are still attentive to the class.

Learners: Learners are at the heart of education. In the framework, the learners assume an active role in the acquisition of learning. During the learner's engagement with the virtual class, greater confidence in navigating the terrain of the course is developed, learning goals become clearer through the learner's demonstration of outcomes, and the learner's autonomy is exercised and thereby recognized.

Confidence–Confidence is a feeling or belief that you can do something well or succeed at something. A confident learner is a happy and productive one. Building student confidence begins in any space where meaningful learning is encouraged and supported according to Crockett (2021).

Confidence is a response to barriers that were articulated by our respondents. "I cannot cope with my (online) studies"; "there is nothing else I can do"; "I can't cope due to my anxiety".

Goal-oriented–Goal orientation refers to students' reasons for engaging in various achievement behaviors in a particular situation. They serve as the motivating factors that push them forward in their learning exploration.

Unmotivated in online learning dominates the list of barriers identified. Their problem in communication partly due to connectivity issues, personal biases toward teachers, inability to focus, and so on, may eventually redound to demotivating them to actively engage in their online class. "I cannot focus on working at home"; "I get less motivated in an online class than in F2F"; "I lack motivation and start to have fears for not making it to the end".

Autonomy–learner autonomy is when students take control and responsibility for their own learning (Elt, 2013). At the heart of autonomous learning is the student's perception of their own role as a learner. The autonomy of the student comes in when he explores the playing fields of the course provided by the teacher. In a sense, the learner is learning to manage himself in determining how he wants to learn, how far he wants to explore, and how he wants to demonstrate the outcomes of his own learning.

Technology–technology is the catalyst that engages the agents in a productive exchange of knowledge. The agents, teachers, and learners must have accessible connectivity that is sustainable and appropriately utilized.

Virtual learning environment–This is the space that is created from the shared interaction of the agents with technology. This is a learning space that is non-threatening, fun, boundless, and supportive.

4. Conclusion

The framework for resilient and inclusive virtual classrooms is grounded on how students and teachers managed the barriers they encountered while in the process of online teaching and learning during the pandemic.

Therefore, the management of barriers to online learning is a critical response to addressing the seeming discomforts between teachers and learners in navigating the new landscape in education. There is a great temptation to gravitate toward responding to the demands of educational technology while the thrust of humanizing online learning is abandoned if not set aside. In this situation, resilience is compromised.

The heart and art of education are based on human relationships that remain to be true across modalities, methods, or any other intermediaries. Findings show that appropriate inclusive practices transmitted through the mediation of technology will produce resilient online learners who can articulate their difficulties and find ways to sustain their motivation in learning. Thus, for both teachers and students, a virtual classroom is resilient and inclusive if it is non-threatening and fun, boundless and supportive driven by an empowering teacher supported by accessible and appropriate technology.

5. Recommendations

The move to fully online schooling impacts the enjoyment of teachers in teaching and the excitement of students in learning. Thus, based on the results of this study the following recommendations are proposed.

For the Teachers: From the onset of the online classes, teachers must focus on how to boost the confidence and morale of the students, so that together they will handle all the challenges. There must be mutual trust, admiration, and motivation. Continuously engage in capacity building; learn to possess the characteristics of an inclusive teacher; focus on the learning outcomes and give reasonable workloads to learners; give timely constructive feedback; and empower learners to explore learning.

For the Students: Virtual learners should have a reliable gadget and should be comfortable in navigating the technology. Aside from these basic needs, students must be: Academically and socially confident by being motivated and goal-oriented; able to have open communication with others such as family members, friends/classmates, and more importantly the teachers; manage time efficiently by setting time for studies and prioritizing school tasks & household responsibilities; and be **r**esponsible and independent learners but collaborative and proactive.

For the Policy Makers: The framework can be used in developing capacity-building activities, to develop an impactful online practice that aligns with the corresponding educational needs, services, and resources; can be used to fundamentally reevaluate the way HEIs deliver online learning to students while ensuring that faculty and staff have the resources and support.

For Future Research: Review the proposed framework for improvement and to measure its effectiveness; it could be further developed using quantitative tools for detailed analysis and quantification of the complementarities and trade-offs presented. Although this framework is intended to address COVID-19 challenges, this can be customized and used in different policy arenas in managing cross-sectoral and interconnected challenges.

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First Author:

Basilia E. Blay is the current Dean of the School of Multidisciplinary Studies at the De La Salle - College of Saint Benilde. She took her doctorate in Education Major in Educational Management at the Philippine Christian

University, Manila Philippines. She is a graduate of the Bachelor of Science in Education major in Mathematics, a Mathematics Teachers Association of the Philippines (MTAP) fellow, and a recipient of Japan's Monbusho scholarship for teachers. She was a Visiting Faculty in Baltimore City Public school System-Maryland USA from 2005-2008. As an author and educator, she has published articles and textbooks and has delivered several papers in the areas which interest her the most such as Mathematics, Outcomes-Based, and Inclusive Education. As the Dean, she has pioneered several educational innovations, including the new program, the Bachelor in Holistic Disciplines.

Second Author:
Aldino J. Gonzales is the Chairperson of the Theology and Philosophy area of the School of Multidisciplinary Studies of the De La Salle-College of Saint Benilde. He is writing his dissertation for his doctorate in Philosophy at the Asian Social Institute in Manila, Philippines. He is a Bachelor of Arts in Philosophy graduate at the Christ the King Mission Seminary in Quezon City and a Master of Arts in Theology at the Divine Word School of Theology in Tagaytay City, Philippines. He is a consecrated member of Signum Fidei of the Brothers of Christian Schools. He was sent to Papua New Guinea as a missionary-trainee and taught at Denis Eliot Center for Spirituality in 2000-2002. He has facilitated several conferences on Spirituality, Theology, and Pedagogy.

Third Author:
Isagani G. Triste is the Head of the Curriculum Unit, Center for Faculty Advancement of the De La Salle-College of Saint Benilde. He took his Doctor of Education in Educational Administration and Master of Science in Mathematics Education at Pamantasan ng Lungsod ng Maynila (University of the City of Manila), Philippines. He took his Bachelor of Secondary Education Major in Mathematics at the Philippine Normal University in Manila. He has facilitated several webinars, training, and workshops on Pedagogy, Assessment, and Research.