INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND ANALYSIS

ISSN(print): 2643-9840, ISSN(online): 2643-9875

Volume 04 Issue 04 April 2021

DOI: 10.47191/ijmra/v4-i4-17, Impact Factor: 6.072

Page No.- 463-476

A Comparative Analysis on the Challenges of Online Learning Modality and Modular Learning Modality: A Basis for Training Program



Aubrey S. Abante, Raymund P. Cruz, Danjo F. Guevarra, Maria Isabel B. Lanada, Mark Julius S. Macale, Myron Willie III B. Roque, Frederick R. Salonga, Lilibeth C. Santos, Wendell C. Cabrera

Department of Education and La Consolacion University Philippines

ABSTRACT: Online Learning and Modular Learning Modalities are being utilized by the Department of Education to continue the learning process during COVID -19 pandemic. The study has employed Mixed method to determine the problems and challenges of both public and private school teachers in utilizing online and modular learning modality. Interviews revealed that each sector has a problem in internet connectivity. Specifically, public school teachers are being challenged by the scarce resources of the students and unresponsive parents. Private school teachers are being challenged by the lack of training on the different online platforms for online teaching and learning process and assessment of learning this new normal. U- Test revealed that the challenges experienced by public and private school teachers in delivering distance learning are essentially the same. Moreover, it can be said that the type of school where a teacher works has no bearing with the challenges that he or she may encounter.

KEYWORDS: Online Learning, Modular Learning, Public School Teachers, Private School Teachers, Challenges, Problems.

INTRODUCTION

The Philippine education system is currently adapting to the latest blended learning model, which is now being introduced throughout the world. Despite calls for an academic freeze in the aftermath of the Coronavirus outbreak, the Education sector insists that education should not be jeopardized. Teachers, particularly traditional teachers, are finding it difficult to cope with this pandemic. The world stopped and the economy collapsed as all businesses shutdown operations. For instance, to prevent the virus from spreading, most countries closed schools, colleges, and universities. Not only the health and education sectors were affected by the crisis. During the pandemic's peak, educational institutions offered remote learning as an alternative.

Despite the closure order, classes are held (Kasrekar, 2020). Since face-to-face lessons are more likely to spread the virus, the most effective option is to teach and learn online. This platform poses a challenge to both teachers and students because it exposes them to something different. In the midst of the pandemic, this necessitates an 'adopt quickly' answer to the new standard in teaching and learning. The transition to online learning came too soon, so academic institutions must strategize and drive new teaching pedagogies. The question of whether private and public schools are prepared in terms of technological infrastructure and teaching pedagogy remains unanswered.

According to Magsambol (2020), there is a strong divide between those who can and cannot afford the money required to access the modern education platform. With the DepEd's mantra "no child left behind," the general state of children in the public school system sends a message of injustice. Training, on the other hand, cannot be canceled as much as the economy wants.

In controlling the spread of the disease, teachers are introducing new rules, practices, and classroom configurations. Others are designing brand new online curricula for students who will be studying from home. They are forced to do so at the same time, and with insufficient financial resources. Holding students interested is the most challenging aspect of teaching online. To do so, their greatest need is for instructional technology: laptops, tablets, document cameras and other technology to help them do demonstrations and keep their students interested in the content.

In the above mentioned point, the objective of this study is to craft an action plan that can help both private and public school teachers in teaching during this time of pandemic. The action plan will be based on the experiences of public and private school

teachers during this new normal. This paper also aims to be the guiding light of DepEd in crafting their policies in assisting their teachers, both in private and public in the time of new normal.

PROBLEM AND RESEARCH QUESTION

The major problem of the study sought answers on "How do problems of teachers both private and public schools in using new modalities be catered?

Specifically, the study sought answers to the following questions:

- 1. What problems do teachers both private and public schools encounter while teaching using new modalities?
- 2. What would teachers both private and public schools suggest to solve the problems encountered?
- 3. Is there a significant difference between private and public school teachers in terms of challenges and problems encountered?
- 4. What training program can be proposed to enhance teachers' pedagogy both private and public schools in using new modalities?

METHODOLOGY

Mixed methods studies will incorporate qualitative and quantitative techniques into a single or multiphase study's "analysis methodology" (Tashakkori & Teddlie, 1998: 17-18). These studies employ an interactive (systemic) approach to take advantage of each individual process in order to obtain more accurate answers to the study questions at hand (Maxwell & Loomis, 2003). This research employs Creswell's mixed methods approach, which is rooted in a philosophical worldview: pragmatism that

This research employs Creswell's mixed methods approach, which is rooted in a philosophical worldview; pragmatism that recognizes the importance of multiple approaches to conducting inquiry, with the researcher drawing liberally on both quantitative and qualitative assumptions.

The effectiveness of mixed methods study is focused on the idea that people solve problems using both numbers and phrases. This study's sequential explanatory mixed methods architecture usually has two phases: (1) A quantitative process is preceded by a qualitative phase that builds directly on the quantitative phase's findings.

The study's quantitative strand, or first step, used a survey design to provide a quantitative or numeric summary of a population's patterns, behaviors, or opinions by analyzing a sample of that population. The qualitative strand, or second step, of the analysis used a phenomenological design, in which the researcher decides the nature of human perceptions about a phenomenon as defined by the participants. The researcher was not only collecting and analyzing all types of data, but also integrating them so that the overall intensity of the analysis is greater than either quantitative or qualitative research or of similar value.

The quantitative or numeric data is collected and analyzed first, followed by the qualitative or text data, which helps to illustrate, expand on, or extend the quantitative results obtained in the first step. The researcher used the quantitative data to classify and intentionally select participants for follow-up in this study, so the focus was on the second qualitative process. To see the richness of real social experience, the in-depth interviews go "beyond the numbers" that were documented in the quantitative study.

Mixed methods research refers to research which integrates both qualitative and quantitative elements in a single study (Creswell & Plano Clark, 2011; Wisdom, Cavaleri, Onwuegbuzie, & Green, 2012). This is beyond simply the inclusion of open-ended questions in a survey tool or the collection of demographic data from interview participants, but rather involves the explicit integration of qualitative and quantitative elements in a single study. It is this integration that characterizes the mixed methods approach, as distinct from a "combined approach" whereby qualitative and quantitative elements are used together but not integrated. While the paradigmatic debate of whether qualitative and quantitative elements can be combined has been largely overcome, there remains several issues around the quality of mixed methods research that need to be addressed.

2.1 Respondents of the Study

The respondents were the selected teachers who came from Private and Public teachers from Bulacan and Pampanga. They were purposively and randomly chosen from private and public schools. Most of them served the school for more than a year. And they came from different grade levels and taught different subject areas. They are also employed during Academic School Year 2020- 2021. The total number of respondents and its distribution per school was determined through the use of purposive sampling. The researchers selected the respondents who can provide the best information.

2.2 Instrument of the study

In order to gather significant information, a self-made survey questionnaire on this study entitled "Teacher's Challenges in Employing New Modalities in The New Normal Education" was utilized. The survey was divided into three areas buoyed in

"Teacher's Challenges in Employing New Modalities In The New Normal Education" and the variables of the study: Profile of the respondents, Learning modalities used, and challenges encountered in using new modalities in the new normal.

It has a 5 – point Likert scale to determine the extent of improvement. The mean results of the data gathered were tabulated. The researchers also utilized questionnaire with self-made questions for survey via online interview to learn the different challenges and problems encountered by public and private school teachers in using different modalities of teaching this new normal.

Table 1: Summary of Problems and Suggestions of Public-School Teachers in Using the New Modalities of Teaching.

Problems encountered by Public School Teachers	Public School Teachers' Suggestion about the Problems on		
	Using the New Modalities		
1."Poor internet connection."	1.Look for better service of internet provider.		
2.Some parents cannot go to school to get the module due to lack of money."	2.Utilize 'pakisuyo' system (friend, classmate or relatives).		
3.Unresponsive Students and Teachers	3. "Parents, teacher and students conduct assembly."		
4. "Learners have a hard time coping up with modular instruction, thus, creating a large gap on student learning."	4."Proper guidance from parents, continuous communication between the parents and teachers."		
5. No all students have gadgets	have gadgets 5. It's the finances/support coming from the parents and/of the government to provide them the resources needed to cope up with this situation		

Table 1 presents the summary of problems encountered by the public school teachers in using the new modalities of teaching. The data gathered revealed that the teacher-respondents experience problems in using the new modalities of teaching. This problem affects the teaching and learning process because classes are often interrupted, and some students cannot even join online classes.

Some public-school teachers find it difficult to use the new modalities of teaching because of the following reasons: poor internet connection of both teachers and students, parents' financial status, unresponsive students and parents, coping mechanism of students in terms of modular modalities and the lack of students' resources, specifically gadgets that can be used for online learning.

However, the respondents also suggested solutions that may cater the above-mentioned problems. They suggested that teachers and students may look for a better internet provider. For unresponsive students and parents, they suggested to have a "Parents, Teacher and Students Assembly" via Google Meet or Face to Face Assembly while following the health protocols. They also suggested proper guidance from parents and strengthening the communication of parents and teachers for the learners having a hard time coping up with the modular instructions. Lastly, they suggested financial support from the government for the students that do not have gadgets for online learning.

Stable and fast internet connection supports the instructional delivery in online distance learning. However, the Philippines' fixed average speed as of early this year is only 26.18 mbps, which makes the country rank 114th in the world for mobile speeds and 108th for fixed broadband speeds (Ookla, LLC, 2020). Teachers rely on internet for communication and utilization, but stability and speed hinder them to do so. The participants mentioned that unstable and slow internet connection impede their duties and works. Signal interruption in different geographic sites adds up also to the situation which is out of teachers' control. Teachers are not exception by the lagging internet connection which would miss out essential discussions when the internet freezes during synchronous classes (Alvarez, 2020). The success of any online distance learning modality heavily relies on internet connection because a failure can detract the entire online learning experience.

Table 2: Interview Responses: Problems Encountered of Public-School Teachers in Using New Modalities

Participants	Response	
Teacher No.1	"Poor internet connection and unresponsive students and parents"	
Teacher No. 2	"Students are not answering their modules"	
Teacher No. 3	"Not all students have internet access and gadgets"	

Teacher No. 4	"Intermittent signal of internet connection, unexpected meetings online"		
Teacher No. 5	"Students behavior/study habits and parents' inability to cooperate"		
Teacher No. 6	"There is the difficulty in designing and developing content suited to the online		
	environment".		
Teacher No. 7	"Students are incapable to attend online class, no gadgets, no internet connection. In		
	terms of modular learning, parents are sometimes too busy to get the modules."		
Teacher No. 8	"Students can't attend online classes because of internet connection"		
Teacher No. 9	"Unstable means of communication."		
Teacher No. 10	"Participation of the students are limited."		
Teacher No. 11	"Communicating with the students because students have poor internet connection		
	and no gadgets to be used for online learning."		
Teacher No. 12	"Internet connection and students' lack of interest."		
Teacher No. 13	"Students' internet subscription cannot sustain the needs in Online Learning		
	Delivery."		
Teacher No .14	"Unstable internet connections."		
Teacher No .15	"Internet connection, gadgets, student's behavior, teacher readiness".		
Teacher No. 16	"Hardship in relaying lessons."		
Teacher No. 17	"Poor internet connection."		
Teacher No. 18	"Not all students have gadgets and internet. Some parents cannot go to school to get		
	the module due to lock of money."		
Teacher No. 19	"Fewer students can join during screen time".		
Teacher No. 20	"Accuracy of the learning competency of the learners."		
Teacher No. 21	"There are many problems in the current situation, but I think the hardest to deal		
	with is to discipline the students."		
Teacher No. 22	"Communication between students and parents."		
Teacher No. 23	"Unstable internet connection."		
Teacher No. 24	'There are so many students who are not always finding time to connect online that's		
	why they cannot comply with the requirements that they need to submit".		
Teacher No. 25	"Difficulties in getting the students' focus on their lessons."		
Teacher No. 26	"I had a hard time checking their activities, most of the time they don't have		
	answers."		
Teacher No. 27	"Students cannot open the cam during screen time and when called to answer the		
	question I got no answers from the student ."		
Teacher No. 28	"No good communication."		
Teacher No. 29	"Poor internet connection, No Available Gadgets on the part of the students."		
Teacher No. 30	"Learners have a hard time coping up with modular instruction, thus, creating a large		
	gap on student learning.".		
Teacher No. 31	"Unstable internet connection."		
Teacher No. 32	"Adjustment period, time, internet reliability."		
Teacher No. 33	"Internet connection."		
Teacher No .34	"It is a challenge as well as a new learning process for me."		
Teacher No .35	"Poor internet connection, update the unresponsive students."		
Teacher No. 36	"Some students cannot follow instructions, and some are not responsive."		
Teacher No. 37	"The resources of students are not enough to attend online learning."		
Teacher No. 38	"Non responsiveness of the students"		
Teacher No. 39	"unresponsive students."		
Teacher No. 40	"Lack of gadgets and internet connections."		
Teacher No. 41	"Communication with students."		
Teacher No. 42	"Intermittent internet connection of students as well as the lack of gadgets and		
	1		

	device of some students. When it comes to printed materials, there were times where	
	the sorts modules have missing pages or subjects"	
Teacher No. 43	"Some of the students do not submit their answer sheets on time and also the parents didn't get the modules on time".	
Teacher No. 44	"Unresponsive students and parents"	

If there are problems, there were also solutions suggested by the participants. Table 3 shows the responses of the public school teachers in question number 2 which is "What suggestions can you give to solve the problems you encountered in using the new modalities?

Table 3: Interview Reponses: Suggestions of Public School Teachers to Solve the Problems encountered in Using New Modalities

Participants	Responses		
Teacher No. 1	"Conduct online meeting w/ parents at least once a month."		
Teacher No. 2	"If they difficult for them to answer the module I can teach them one on one via zoom		
	class."		
Teacher No. 3	"Make the parents accountable to students' learning."		
Teacher No.4	"Provide a backup plan to alleviate the problems encountered".		
Teacher No. 5	"Assign 1 staff/person to monitor students who are difficult to deal with on blending learning approach."		
Teacher No. 6	"I suggest that collaboration with colleagues and/or scheduled meeting with the faculty		
	and higher ups should be done so that these problems will be discussed and possible		
	solutions may be given".		
Teacher No. 7	"The government should strategize more plans in developing the country's internet		
	capabilities as well as a lot more funds for gadgets since this pandemic is yet so far to		
	reach its ending."		
Teacher No. 8	"The country ISP should improve their services. The internet connection in the country		
	is below the average of Internet speed in the region".		
Teacher No. 9	"Preparations and anticipations of learner's outcomes or outputs".		
Teacher No. 10	"Prolong the patience."		
Teacher No. 11	"Trying every means."		
Teacher No. 12	"Free internet provider, unrelenting patience."		
Teacher No. 13	"Strengthen the partnership with the stakeholders, specially LGU to supply the needs of		
	our students in coping with the new normal class/setup".		
Teacher No. 14	"To conduct monthly maintenance in devices, routers, and to Internet provider".		
Teacher No. 15	"Ask more help form the department."		
Teacher 16	"Provide better communication."		
Teacher No. 17	"Look for better service of internet provider."		
Teacher No. 18	"A better schedule of distribution."		
Teacher No. 19	"It's the finances/support coming from the parents and/or the government to provide		
	them the resources needed to cope up with this situation But I know it's beyond the		
	control of the government maybe if all the parents and the teachers will be fully		
	cooperative to each other, there will be more positive outcome for everyone"		
Teacher No. 20	"face to face class"		
Teacher No. 21	"Parents should always be part of the learning of their children."		
Teacher No. 22	"By keeping in touch with students and parents, and answering their queries as much as		
	I can".		
Teacher No. 23	"Another modalities suitable for this situation."		
Teacher No. 24	"There should be more trainings for the teachers to be more effective and confident in		
	handling online classes."		

Teacher No. 25	"Good communications between teachers and parents."	
Teacher No. 26	"I had to lessen the activities to be answered, limited to items with answers. I had to	
	disregard additional activities which will totally measure or gauge their understanding."	
Teacher No. 27	"I suggest that we as teachers should try different strategies to get the attention a	
	interest of our students."	
Teacher No. 28	"Minimal number of students and less sections should be handled by each teacher so	
	they can manage and guide their students at a maximum level."	
Teacher No. 29	"Minimal number of students and less sections should be handled by each teacher so	
	they can manage and guide their students at a maximum level."	
Teacher No. 30	"Give gadgets to those who can't afford to have one."	
Teacher No. 31	"Proper guidance from parents, continuous communication between the parents and	
	teachers."	
Teacher No. 32	"Internet providers should fix their connections for a better service."	
Teacher No. 33	"There should be proper consultation to all the stakeholders so that everyone can meet	
	halfway in this new normal set up."	
Teacher No. 34	"Help teachers and learners in providing gadgets and stable internet connections."	
Teacher No. 35	"Having LAC sessions and webinars as well as additional trainings for teachers."	
Teacher No. 36	"Conduct best practices."	
Teacher No. 37	"Follow up messaging and a lot of patience with the situation of our students in this	
	time of pandemic."	
Teacher No. 38	"Apply what I have learned in seminars"	
Teacher No. 39	"Be creative in finding ways in order to reach them."	
Teacher No. 40	"Teachers must exert effort to communicate with the learners."	
Teacher No. 41	"Parents, teacher and students conduct assembly."	
Teacher No. 42	"Maintain a consistent communication with parents/guardian via 'kumustahan' or	
	informing them regularly during retrieval and distribution of modules."	
Teacher No. 43	"Suggesting that each student should receive a gadget or devices for online learning is	
	too much. So would just go to providing interventions to those who misses the chance	
	to attend online sessions".	
Teacher No.44	"Provide students with alternative learning materials."	

Table 4 presents the problems and suggestions of private school teachers in using the new modalities of teaching.

Private school teachers expressed concerns about poor internet connection of both students and teachers, technical problems in using online application that can be utilized in online teaching and learning, and also, they expressed concerns about assessing the activities of the learners.

The participants clearly suggested that both teachers and students should have a good internet provider. School should provide teachers, students and parents, training on different online application that can be utilized in online teaching and learning. They also suggested that there should be topics to be discussed synchronously and asynchronously. Schedules should provide online and offline learning tasks to meet students' need.

Table 4: Summary of Problems and Suggestions of Private School Teachers in Using the New Modalities of Teaching.

Problems encountered by Public School Teachers	Public School Teachers' Suggestion about the Problems	
	on Using the New Modalities	
1. "Internet connection."	1. "Have a good internet provider/resource."	
2. Technical problems and new system in preparing	2. I suggest having more trainings for the teachers,	
the lessons that we can't control however we can used	o't control however we can used parents, and students so we can all learn whatever new	
to it as time goes by."	system that we need to have."	
3. It is so hard to give them grades, not sure if they are	3. There are topics discussed synchronously and	
really the ones who made a certain activity or what."	asynchronously. There are offline and online learning	
	tasks and schedules are flexible to meet students' needs"	

Manalo (2020) mentioned that financial constraint hampers the preparation for online distance learning. There are required specifications of mobile phones, laptops, desktops, and other gadgets. And so, the upgrade entails finances. Teachers do not have the most appropriate devices to run an online distance learning since there is no provision for additional budget. Instruction-related challenge in online distance learning is rooted in financial difficulties.

Mayol (2020) found out that the very first problem is that teachers themselves claim that having strong internet access is a key problem in the delivery of their lessons. In terms of teachers development and support, De Villa and Manalo (2020) revealed that as education migrates in the new normal setup, teachers make necessary preparations to equip themselves with distance learning.

With regards to the students' assessment, the answers provided by the respondents corroborates with the findings of Guangul et. al. (2020) that one of the challenges identified in remote assessment were academic dishonesty, coverage of learning outcomes, and commitment of students to submit assessments on which teachers are not sure whether the students are the ones who do the activities.

Table 5: Interview Responses: Problems encountered of Private School Teachers in Using New Modalities

Participants	Responses	
Teacher No. 1	"When the student cannot attend the online class because of lack having a data or	
	internet provider."	
Teacher No. 2	"Internet connection."	
Teacher No. 3	"Unstable internet connectivity during online classes at times as well as the approach	
	in teaching and securing students' attention during online classes.	
Teacher No. 4	"It is so hard to give them grades, not sure if they are really the ones who made a	
	certain activity or what."	
Teacher No. 5	Technical problems and new system in preparing the lessons that we can't contr	
	however we can used to it as time goes by."	
Teacher No. 6	"Sometimes I experienced the internet interruption, so it hinders the flow of the	
	lessons".	
Teacher No. 7	"Familiarity, resources and connection."	
Teacher No. 8	"Internet connection"	
Teacher No .9	"Lack of participation because of internet accessibility".	
Teacher No. 10	"Using new applications for online Teaching"	

If there are problems, there were also solutions suggested by the participants. Table 3 shows the responses of the public school teachers in question number 2, which is "What suggestions can you give to solve the problems you encountered in using the new modalities?

Table 6: Suggestions of Private School Teachers to Solve the Problems encountered in Using New Modalities

Participants	Responses	
Teacher No. 1	"We should understand the situation of every students. Patience and love in our profession is	
	only the key."	
Teacher No. 2	"Have a good internet provider/resources."	
Teacher No. 3	"I hope that families, school and students work more hand in hand in supporting effective	
	learning for students."	
Teacher No. 4	"Think of another way on how learners will be assessed ."	
Teacher No. 5	"I suggest having more trainings for the teachers, parents, and students so we can all learn	
	whatever new system that we need to have."	
Teacher No. 6	"When we encountered this kind of problem, we always need to have a back-up plan for the	
	students to continue the flow of the lesson even though there's an interruption with internet."	
Teacher No. 7	"Support emotionally, financially and understanding from different parties."	

Teacher No. 8	"Teachers must be flexible; we should provide alternative activities that do not require internet
	access."
Teacher No. 9	"Make a better change of our country's internet speed connection."
Teacher No. 10	"Provide the students with gadget and accessible internet connection."

Difference in the Challenges Encountered by Public and Private School Teachers

In order to analyze the difference existing between the challenges experienced by public and private school teachers handling online and modular distance learning modalities, the Mann-Whitney U-Test was conducted. The results of this is shown on the table below.

Table 7: Differences in the Over- all Challenges Encountered by Public and Private School Teachers

Group	Mean Ranks	Test Statistic (U)	p-value	Decision	Remarks
Public	26.99	179.50	0.161	Do not reject	Not Significant
Private	34.68			Но	

It can be observed from the above table that the public and private school teacher-respondents registered a mean rank of 26.99 and 34.68, respectively. Further, a test statistic of U = 179.50 (p = 0.161 > 0.05) is computed. This led the researchers not to reject the null hypothesis and conclude that the difference between the challenges encountered by public and private schools is not significant.

The results imply that the challenges experienced by public and private school teachers in delivering distance learning are essentially the same. Moreover, it can be said that the type of school where a teacher works has no bearing with the challenges that he or she may encounter. This result was supported by Acheta and Ancheta (2020), that public and private schools are both affected by the pandemic in terms of teaching modalities to be adopted, challenges in assessment of students, role of teachers, parents, and learners. In another study conducted by Altbach and De Wit as cited in Navarosa (2020), among the top concerns of this virtual opening of classes whether public or private schools are the access to the appropriate technology required for remote learning, teachers' training, and instructional materials, and online curricula for modular approach. Thus, being a public or private school does not matter anymore when challenges in education were talked about due to COVID-19 Pandemic.

CONCLUSIONS

In this paper, the researchers, drawn the following conclusions based on the findings on the Comparative Analysis on the Challenges of Online Learning Modality and Modular Learning Modality: A Basis for Training Program. These are the following:

1. Public School Teachers:

Public School Teachers encountered poor internet connection. Some parents cannot go to school to get the module due to financial incapacity. There are also unresponsive students and parents. Learners had a hard time coping up with modular instruction, thus, creating a large gap on student learning. Not all students have their own gadgets.

2. Private School Teachers:

Private School Teachers are having poor internet connection, technical problems and new system in preparing the lessons that they can't control. However, they can be used to manage it as time goes by. They experienced difficulties in giving grades, not sure if they are really the ones who made a certain activity or what.

3. Differences in the challenges encountered:

The challenges experienced by public and private school teachers in delivering distance learning are essentially the same. Moreover, it can be said that the type of school where a teacher works has no bearing with the challenges that he or she may encounter.

RECOMMENDATIONS

Based on the above conclusions, the research come up with the following recommendations on the Comparative Analysis on the Challenges of Online Learning Modality and Modular Learning Modality. These are the following:

1. Public School Teachers:

Public School Teachers should look for a better service of internet provider and utilize *pakisuyo* system (friend, classmate or relatives). Parents, teachers, and students should conduct a virtual assembly to discuss some issues and

concern. Proper guidance of parents and continuous communication between parents and teachers should be indispensable. Financial support coming from the parents and/or the government is needed to provide them the important resources in this time of pandemic.

2. Private School Teachers:

They should have a good internet provider and electronic resources. They should undergo more trainings for the teachers, parents, and students so they can all learn whatever new system that they need to have. They must be well oriented what topics should be discussed synchronously and asynchronously. They should continue giving off-line and on-line learning tasks which are flexible to students' needs.

Part II . Proposed Training Program

Introduction:

The Proposed training Program will develop public and private school teachers' competencies in utilizing online and modular learning modalities. The said training program is perceived to cater the needs of teachers regarding the new normal education.

Rationale:

Findings revealed that there were problems identified by the public and private school teachers such as poor internet connection of both teachers and students, parents' financial status, unresponsive students, and parents, coping mechanism of students in terms of modular modalities and the lack of students' resources, specifically gadgets that can used for online learning, technical problems in using online application that can be utilized in online teaching and learning, and also, they expressed concerns about assessing the activities of the learners.

General Objective:

The general objective of this training program is to equip teacher's competencies and provide activities that may cater the problems in utilizing the online and modular learning modalities.

Teachers' New Normal Education Competencies Proposed Training Program

Target Group	Program and Activities		
Public and Private School Teachers	Seminar Workshop on the Different Assessment Tools This		
	New Normal		
	Objective:		
	 To apply lesson design and assessment considerations for distance learning in the light of COVID -19 crisis 		
	Activities:		
	 Seminar on "Formative Assessment During Distance Learning." 		
	Venue:		
	Google Meet		
	Time Frame:		
	• Tentative date: March 2021		
	Resources Needed		
	Human - Resource Speaker		
	Materials - LDM2		
	Sources of Fund:		
	Personal Fund		

Budget allotted: • 1,000 Php Expected Outcomes/ Outputs: • Create an evaluation tool designed for New Normal Education Seminar Workshop on Different Online Application on Online Learning Objective: • To familiarize and use different online application properly for online learning modality Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:		
Expected Outcomes/ Outputs: Create an evaluation tool designed for New Normal Education Seminar Workshop on Different Online Application on Online Learning Objective: To familiarize and use different online application properly for online learning modality Activity: Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: Google Meet Time Frame: April 2021 Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		Budget allotted:
Expected Outcomes/ Outputs: Create an evaluation tool designed for New Normal Education Seminar Workshop on Different Online Application on Online Learning Objective: To familiarize and use different online application properly for online learning modality Activity: Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: Google Meet Time Frame: April 2021 Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		
Create an evaluation tool designed for New Normal Education Public and Private School Teachers Seminar Workshop on Different Online Application on Online Learning Objective: • To familiarize and use different online application properly for online learning modality Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:		2,000p
Create an evaluation tool designed for New Normal Education Public and Private School Teachers Seminar Workshop on Different Online Application on Online Learning Objective: • To familiarize and use different online application properly for online learning modality Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:		Expected Outcomes/ Outputs:
Public and Private School Teachers Seminar Workshop on Different Online Application on Online Learning Objective: • To familiarize and use different online application properly for online learning modality Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:		
Public and Private School Teachers Seminar Workshop on Different Online Application on Online Learning Objective: • To familiarize and use different online application properly for online learning modality Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:		
Learning Objective: • To familiarize and use different online application properly for online learning modality Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar		Normal Education
Learning Objective: • To familiarize and use different online application properly for online learning modality Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar	Public and Private School Teachers	Seminar Workshop on Different Online Application on Online
Objective: • To familiarize and use different online application properly for online learning modality Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:	Table and Trivate sensor reachers	
To familiarize and use different online application properly for online learning modality Activity: Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: Google Meet Time Frame: April 2021 Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		
To familiarize and use different online application properly for online learning modality Activity: Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: Google Meet Time Frame: April 2021 Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		
To familiarize and use different online application properly for online learning modality Activity: Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: Google Meet Time Frame: April 2021 Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		Objective:
application properly for online learning modality Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:		
modality Activity:		
Activity: • Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:		
Seminar Workshop on using Google Meet, Classroom, Zoom, Kahoot and so on. Venue: Google Meet Time Frame: April 2021 Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		
Classroom, Zoom, Kahoot and so on. Venue: Google Meet Time Frame: April 2021 Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		
Venue: • Google Meet Time Frame: • April 2021 Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:		
Google Meet Time Frame:		
Time Frame: April 2021 Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		
Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learners. Activity: Writeshop/ Seminar Venue:		coopie meet
Resource Needed: Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learners. Activity: Writeshop/ Seminar Venue:		Time Frame:
Resource Needed: • Human: Resource Speaker • Materials: Internet Source of Fund: • Personal Fund Budget Allotted: • 1,000 Php Expected Outcome/ Output: • Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: • To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: • Writeshop/ Seminar Venue:		
Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		- //piii 2021
Human: Resource Speaker Materials: Internet Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		Resource Needed:
Materials: Internet Source of Fund:		
Source of Fund: Personal Fund Budget Allotted: 1,000 Php Expected Outcome/ Output: Demonstration Teaching Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		
Personal Fund Budget Allotted:		
Personal Fund Budget Allotted:		Source of Fund:
		Personal Fund
		Budget Allotted:
Expected Outcome/ Output:		
Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		
Public and Private School Teachers Seminar Workshop on Monitoring Students this New Normal Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		Expected Outcome/ Output:
Objective: To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		Demonstration Teaching
 To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:	Public and Private School Teachers	
 To Craft an Action Plan in Properly Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		
Monitoring the learning of the learners. Activity: Writeshop/ Seminar Venue:		Objective:
Activity: • Writeshop/ Seminar Venue:		To Craft an Action Plan in Properly
Activity: • Writeshop/ Seminar Venue:		Monitoring the learning of the learners.
Venue:		
Venue:		Writeshop/ Seminar
		Venue:
Constant Adams		
• Google Meet		Google Meet
Time Frame		

April 2021
Resource Needed
Human – Resource Speaker
Materials- Internet
Source of Fund:
• Personal Fund
Budget allotted:
• 1,000 Php
Expected Outcome/ Output:
Action Plan on Monitoring students
in this New Normal Education

REFERENCES

- 1) Ancheta, Ruel & Ancheta, Helen. (2020). The New Normal in education: A Challenge to the Private Basic Education Institutions in the Philippines
- 2) Angara, S. M. (2020, June 18). The challenge of education in the new normal. Business Mirror. https://businessmirror.com.ph/2020/06/19/the-challenge-of-education-in-the-new-normal/
- 3) Brandpoint. (2020, October 1). Back at school in the new normal: What teachers need most. Reading Eagle. https://www.readingeagle.com/living/back-at-school-in-the-new-normal-what-teachers-need-most/article_a4be28ee-fcf1-11ea-8bea-9fe286960829.html
- 4) Charm, N. (n.d.). The new normal in basic education. BusinessWorld | The most trusted source of Philippine business news and analysis. https://www.bworldonline.com/the-new-normal-in-basic-education/
- 5) De Villa, Jennilou A. and Manalo, Franz Kevin B., Secondary Teachers' Preparation, Challenges, and Coping Mechanism in the Pre-Implementation of Distance Learning in the New Normal. IOER International Multidisciplinary Research Journal, Volume 2, Issue 3, September 2020, pp. 144 154, Available at SSRN: https://ssrn.com/abstract=3717608
- 6) Foundations of mixed methods research. (n.d.). Google Books. https://books.google.com.ph/books
- 7) Guangul, F.M., Suhail, A.H., Khalit, M.I. et al. Challenges of remote assessment in higher education in the context of COVID-19: a case study of Middle East College. Educ Asse Eval Acc 32, 519–535 (2020). Retrieved from https://doi.org/10.1007/s11092-020-09340-w
- 8) International Journal of Pedagogical Development and Lifelong Learning. https://www.ijpdll.com/download/the-covid-19-pandemic-through-the-lens-of-education-in-the-philippines-the-new-normal-8311.pdf
- 9) Manalo, Franz Kevin B. Secondary Teachers' Preparation, Challenges, and Coping Mechanism in the Pre Implementation of Distance Learning in the New Normal, pp.144 154. P ISSN 2651 7701 | E ISSN 2651 771X | www.ioer-imrj.com
- 10) Mayol, P.A. (2020). The Paradigm Shift For Teachers' Challenges In The New Normal. Retrieved from https://cebufinest.com/paradigm-shift-teachers-challenges-new-normal/
- 11) Mixed methods research: The issues beyond combining methods. (2018, October 29). Wiley Online Library. https://onlinelibrary.wiley.com/doi/full/10.1111/jan.13877
- 12) Mixed method design: An alternative approach. (2003, January 1). ResearchGate. https://www.researchgate.net/publication.
- 13) Navarosa, D.B. (2020). Education in the New Normal: A Closer Look at the Philippines' Learning Solutions Amidst the Pandemic
- 14) Ookla, LLC. (2020, June). Speedtest Global Index. https://www.speedtest.net/globalindex/philippine
- 15) The-new-Normal-in-Education-Volume1IssueNo.1Septemebr2020 (1). (n.d.). Scribd. https://www.scribd.com/document/488097110/The-New-Normal-in-Education-Volume1IssueNo-1Septemebr2020-1

Appendices

QUESTIONAIRE

Challenges Teachers Encountered in Using New Modalities

in the New Normal

Pa	rt I	ı. V	Vritten	Inte	rview
----	------	------	---------	------	-------

W	Vhat problems do you encounter while teaching using new modalities?
_	
_	
_	
٧	What would you suggest to solve the problems encountered?
_	
_	

Part II: Challenges Teachers Encountered in using New Modalities in the New Normal

This part of the questionnaire will determine the challenges encountered by the teachers in using different learning modalities during the new normal.

Directions: Read each statement carefully. Indicate your answer under the appropriate column you mostly prefer based on the rating scale by putting a checkmark (/). The researchers, have used an adapted rating scale to help quantify the needed data for the research study.

DESCIPTION OF RATING SCALE

STRONGLY AGREE- You are in agreement with the statement to a very high extent.

AGREE- You believe that statement is true to some extent.

UNDECIDED- You do not know about it or cannot say.

DISAGREE- You totally disagree with the statement.

SLIGHTLY DISAGREE -You believe that statement is not true to some extent.

QUESTIONS					
A COLLOGI ADMINISTRATION/POLICIES	1	2	3	4	5
A. SCHOOL ADMINISTRATION/ POLICIES		Α	UN	D	SD
1. Our administrator/s explained well about Basic Education Learning					
Continuity Plan (BE-LCP) adopted by our school.					
2. Our school provided modules.					
3. The administration provided training to the teachers on the new modality,					
techniques and technologies					
4. Both the Admins and the Teachers have clear understanding of the process					
of production and reproduction of modules					
B. TEACHER'S WORK		2	3	4	5
		Α	UN	D	SD
1.) Teachers spent time beyond official working hours to sort out and organize					
modules- policy.					

2. Teachers were asked to craft our own Learning Activity Sheets (LAS) - policy					
3. Teachers were tasked to do intervention to student's with poor performance.					
4. Teachers spent our own resources in making modules/ LAS. Policy					
5. Teachers should conduct home visitation.					
6. Teachers checked too many modules/LAS.					
7. Teachers 'devices/ gadgets have the capacity to conduct online teaching.					
8. Teachers' internet provider is reliable.					
9. Teacher has the capability to use social media platforms, productivity tools, creative tools, LMS, e-learning hubs for teaching.					
10. Teacher has the capability to use online application for assessment					
C. PARENT'S INVOLVEMENT/ ROLE	1 SA	2 A	3 UN	4 D	5 SD
1. Parents did not return and receive modules on the scheduled date of distribution.					
2. Most of Parents/Guardian cannot teach their children.					
3. Parents/Guardians are the one who answer the modules supposedly for learners.					
4. Parents/Guardians were hard to reached or communicate.					
5. Parents are willing to follow teachers designed learning routines at home.					
6. Parents are willing to have an alternative delivery mode					
7. Parents are willing to provide minimum gadget needs at the start of school year.					
8. Parents have the capacity to provide a learning space for students at home.					
9. Parents have the capability to tutor the child.					
10. Parents prioritize attending online meeting with teachers					
D. LEARNERS' ACADEMIC PERFORMANCE/BEHAVIOR	1 SA	2 A	3 UN	4 D	5 SD
1. Learners' behavior and attitude is difficult to control.					
2. The basis for learners' evaluation is merely on modules only.					
3.Students 'devices/ gadgets have the capacity to conduct online Learning.					
4. Students' internet provider are reliable.					
5. Students have the capability to use social media platforms, productivity tools, creative tools, LMS, e-learning hubs for learning.					

6. Students are willing to use alternative delivery modalities					
E. MODULES/LAS	1	2	3	4	5
	SA	Α	UN	D	SD
1. Activities in modules are too difficult for learners to answer and for teachers to execute.					
2. Modules provided answer keys which hinders genuine learning.					

CERTIFIED

Validation Letter

Dr. Anthony Venus La Consolacion University Philippines

Sir:

The undersigned are Doctor of Philosophy students of La Consolacion University Philippines undertaking the study entitled, "A Comparative Analysis on the Challenges of Online Modality and Modular Learning Modality: A Basis for Training Program", as their requirements in the subject Comparative in Education in the graduate studies.

In recognition of your competence and professional experiences, the researchers are requesting your comments and/or suggestions on the content validity of the questionnaire by filing out the boxes below. Your comments and/or suggestions will be considered significant inputs in putting the questionnaire to its final form.

Very Truly Yours,

Q.

AUBREY S. ABANTE

7

DANJO F. GUEVARRA MYRON WILLIE III B. ROQUE

RAYMUND P. CRUZ

MARK JULIUS S. MACALE FREDERICK R. SALONGA

Sesantos

LILIBETH C. SANTOS

Ph.D. – ELM – Students

Noted by:

DR. WENDELL CABRERRA

Professor