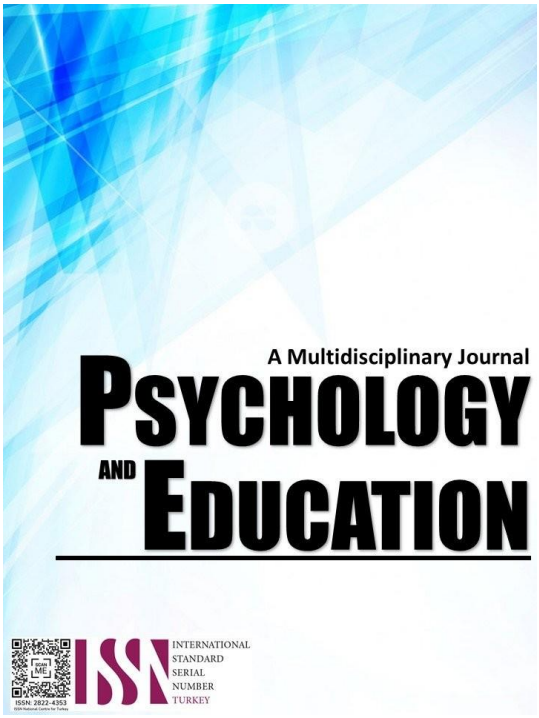
MATH TEACHERS' PEDAGOGICAL MODIFICATIONS IN THE FULL FACE-TO-FACE CLASSES: A QUALITATIVE INQUIRY



PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL

Volume: 23
Issue 6
Pages: 742-752
Document ID: 2024PEMJ2187
DOI: 10.5281/zenodo.13304367
Manuscript Accepted: 07-22-2024

Psych Educ, 2024, **23**(6): 742-752, Document ID:2024PEMJ2187, doi:10.5281/zenodo.13304367, ISSN 2822-4353

Research Article

Math Teachers' Pedagogical Modifications in the Full Face-to-Face Classes: A Qualitative Inquiry

Maria Mae A. Singco,* Kim Louie Frances N. Andulana, Marivic E. Layola, Analyn S. Navarro, Jane Rose C. Pañe, Jessa Marie Sanchez, Kristine O. Valera, Cyril A. Cabello
For affiliations and correspondence, see the last page.

Abstract

Mastering Mathematics can take a lot of effort but takes the proper skills and ongoing practice. Imparting knowledge to the students in mathematics subjects that are known to be difficult has been a challenge for math teachers. From modular to full face-to-face classes, there have been several adjustments and difficulties for teachers, which pushed the researchers, to come up with the study about the pedagogical modifications done by the teachers. In particular, the teachers' coping strategies and the milestones that they have achieved after classes will also be determined. Mathematics teachers at Badian National High School were chosen as ten participants in this qualitative study. Specifically, it utilized Heideggerian phenomenology and interpretative phenomenological analysis (IPA), anchored on the modified Van Kaam approach popularized by Moustakas. Hence, the following themes emerge: (1) The Adjustment, (2) The Struggle, (3) The Motivation, and (4) The Scheme. In conclusion, difficulties in online classes are the unstable internet connection and the need to focus on online discussions, while the adjustments in full face-to-face classes are time management, financial problems, and the distance between the house and school. It is recommended to hear out the voices of the teachers in their difficult times, help address them, and might as well be given some benefits for all their efforts in teaching young minds.

Keywords: *math teachers, motivation, strategies, lived experience, mathematics*

Introduction

When schools implement techniques in learning, introducing full face-to-face classes, it is a formal practice to scrutinize the effects resulting in pedagogical modifications. The implementation caused educational development to involve different ripple effects on the learner's academic performance. According to Morrison and Greenstein (2022), with 84% of Math teachers, there is a discrepancy in teaching mathematics as a subject. Studies are more inclined to show the teachers' strategies and the academic achievement of students correlated but there's limited to none focus on delving into the lived experience of math teachers in the shifting of the mode of teaching in the pedagogical modification. When education is confronted with complex situations that necessitate a radical change in tradition, teachers play a larger role. Ebona (2020), asserts that teachers' pedagogical modifications, should be part of a group that cultivates student motivation and is a change innovator. Regardless of the pandemic, teachers do their best to provide excellent education to their students. According to Schaaf (2021), teachers should be oriented, continuously learning, and embrace discovery learning to educate in a real-world setting. The lived experience of math teachers in the pedagogical modifications brought by the full face-to-face classes can give significant details on what strategies to use in the full face-to-face classes.

The math teachers of today will impart knowledge that learners need for them to have a brighter future. The different modifications caused by the change of modality challenged the math teachers to give their best to offer quality education (Segarino et al., 2022). According to Agayon et al. (2022), during the abrupt change of modality, teachers faced a variety of challenges, including the transfer of learning quality, distribution of modules, and student retrieval toward their problem in adhering to instructions, disruption of power, network connection, and health issue's brought by the pandemic. Nonetheless, educators can engage their coping strategies to deal with these challenges (Gantalao et al., 2023). Teaching is difficult and full of frustrations, particularly during these crucial times, as math teachers we should show the idea that anything is possible (Cabello, 2022). Inside the classroom, math teachers are having different struggles and challenges that none of the people around recognize because it's expected that teachers can cope with the challenges. If these struggles are not deliberated, most probably, teachers will resign, teachers will not deliver the expected output, and teachers will not continue doing what is expected (Villar et al., 2022).

Math education is evolving globally (Bacong et al., 2023). Educators are concentrating on questioning the methods of teaching in mathematics (Gabriel et al., 2022). This intent purposely alters students' attitudes and motivation. Generally, studies regarding math teachers and students would focus more on quantitative measures because these studies will just gauge and will just have a correlation towards the student's academic performance (Cabello et al., 2023). These two variables are commonly discussed, are commonly examined, and investigated but none of these talk about the deafening silence of teachers lived experiences. Moving restrictions and bans on physical contact are intended to limit the spread of disease which affects the learner's academic performance (Gomez et al., 2024). Having these lived experiences can provide an essential management plan on how to help teachers who are silently crying, calling for help, and asking for assistance (Gilani et al., 2020).

Mathematics is not an easy subject. Most of the students would always have that level of motivation to attend this class, only those who are inclined with mathematics intelligence can dance to the tune of the music in mathematics but not all students (Bacong et al., 2023). This is the everyday life problem of a math teacher. Math teachers are spending so much effort looking for strategies on how

mathematics or concepts in mathematics can be communicated to the learners. With this given situation, the full face-to-face classes from the virtual classroom worsen, so it is important to look for a strategy that can be adopted in full face-to-face classes (Stoian et al., 2022).

The implementation of full face-to-face classes made significant milestones for all the teachers and the learners as well. Generally, this study would delve into or explicate the lived experiences of mathematics educators in the new normal wherein full face-to-face classes are already practiced. Specifically, this paper will examine how teachers are coping with the different challenges that they're encountering in the classroom. The milestones that they achieved after classes and the learning opportunities that they elicited from their experience.

Literature Review

This part went into detail about the numerous key sources and works of literature that will serve as a solid foundation for arguments for the study's construct's importance and applicability. The researchers carefully selected highly refereed, academically produced articles, publications, and journals based on the fundamental principles of the inclusion criteria. Social conditions, government policies, and issues in general education all have an impact on mathematics teacher education, according to pedagogical and sociological research. This study drew on literature from within and outside of mathematics education to frame implications for mathematics teacher education in this study.

Albano et al. (2021), the COVID-19 pandemic emergency in 2020 caused a fast and significant shift in teaching methods, moving instruction out of the physical classroom and into an online setting. In this essay, the researchers examine how Italian mathematics teachers from elementary school through college experienced the changes brought on by the unexpected switch from face-to-face instruction to distance learning using a qualitative analysis of 44 collected essays. The analysis is conducted using two theoretical lenses, one focusing on the entire didactic system with mathematics as the knowledge at stake and the other on affective characteristics. The researchers may study how instructors experienced and perceived dramatic, abrupt, and rapid change by integrating the two theoretical perspectives and identifying significant components and their relationships in the teacher narratives. The analysis demonstrates the progression of the process from the disruption of the educational environment to the teachers' discovery of important elements of the didactic system, such as the teacher's roles, a reflection on mathematics and its teaching, and an attempt to reconstruct the didactic system in a novel manner.

Standards for each grade level and course describe one full year of content that students are expected to learn. Consider the mathematics that is essential for students to learn and the connections of mathematics across grades and courses. As well, teachers should be mindful of continuing to connect mathematical content with mathematical processes, such as problem-solving, communication, multiple representations, and connections. Essential learning is defined as the critical skills, knowledge, and dispositions that each student must acquire as a result of each course, grade level, and unit of instruction (Kanold et al. 2018; Schuhl et al. 2020).

According to Albano et al. (2021), the COVID-19 pandemic emergency in 2020 caused a fast and significant shift in teaching methods, moving instruction from the physical classroom into an online setting. In this essay, the researchers examine how mathematics teachers starting with elementary school through college experienced the changes brought on by the unexpected switch from face-to-face instruction to distance learning using a qualitative analysis of 44 collected essays. The analysis is conducted using two theoretical lenses, one focusing on the entire didactic system with mathematics as the knowledge at stake and the other on affective characteristics. The researchers may study how instructors experienced and perceived dramatic, abrupt, and rapid change by integrating the two theoretical perspectives and identifying significant components and their relationships in the teacher narratives. The analysis demonstrates the progression of the process from the disruption of the educational environment to the teachers' discovery of important elements of the didactic system, such as the teacher's roles, a reflection on mathematics and its teaching, and an attempt to reconstruct the didactic system in a novel manner.

Online teaching is a completely different experience compared to a traditional classroom (Yang, 2017). Knowledge and skills acquired through face-to-face tutoring are not sufficient preparation for online tutoring (Emia et al., 2022, Ando et al., 2022). Teaching STEM subjects fully online presents significant challenges because STEM lessons tend to include more hands-on activities and live demonstrations. While the demand for online STEM courses has never been higher, few offer effective online teaching and design methods for online STEM education. In the activities used, the cognitive interactions have been noted, which have made it possible to highlight the process of building mathematical knowledge. These interactions focus on critical thinking, using statements about provoking events as starting points for discussion, such as questions, concerns, questions, and data to find ideas, concepts, axioms, and solutions. Proposed exercises (Martínez, 2017).

Some mathematics pedagogy courses should include both substantive and content pedagogical knowledge. Possible strategies for assessing content knowledge have been widely studied (Cabello et al., 2023). It seems that it is difficult to find sufficient data on knowledge of educational content. This work proposes a task designed to evaluate the knowledge of future teachers in this field. The question of the adequacy of the content of the task is raised through a preliminary analysis and a preliminary exploratory analysis of the answers. They conclude that the task fits the mathematical knowledge teaching model proposed by Paul and colleagues, but some modifications are needed to ensure the practical validity of the task, and there are still some important points (Ferretti & Maffia, 2021).

Importantly, the effect of self-efficacy on academic performance was not the same for all ethnic groups. Although differences in self-efficacy for math achievement were smaller between Hispanic and white children, there were significant differences between black and white children. Increased access to blended learning provides educational opportunities to mitigate these racial disparities' effects (Balentyne & Varga, 2017; Dziuban et al., 2018).

Teachers must be able to adapt to any situation that may arise in the classroom (Binondo et al., 2023). Online teaching and learning models allow teachers flexibility in delivering lessons. Most importantly, teachers must be more open-minded, especially to ensure that teaching occurs in the new normal (Delbo et al., 2023). Because education is dynamic, teachers must always be open to changes and suggestions about what can be done in the future (Jaicten et al., 2023). As a society, educators need to be more thoughtful in determining what needs to change and what can be done to continue meaningful teaching and learning, even in virtual classrooms. A study of online science education found that problem-solving can be achieved by proactively engaging in more creative online activities. Science teachers see a positive side to the new normal by staying relevant and actively participating in Science advances because better things happen (Arrieta & Agbisit, 2020).

Blended learning, which combines face-to-face seminars with independent online learning, has become a viable option for developing and implementing continuing education programs. The online component accommodates teachers' time constraints, requires fewer skilled professionals to implement, and allows participants to explore and visualize mathematical concepts and ideas. In addition, the personal component of this learning allows for spontaneous communication even if learners are facing internet issues (Bahinting et al., 2022). Detail how situational scenarios can be designed to create a learning environment that engages the teacher and even the parents to build the many components of this knowledge gradually (Beriawel et a., 2023). This section also discusses the impact of broadening the teaching experience and how knowledge gained through implementation can improve teacher training and curricula (Martinez et al., 2020).

Another important study by Capua (2002) focuses on teachers' classroom practices as indicators of student learning outcomes. It contains five central themes, such as assessment of teacher knowledge and curriculum implementation, which are confirmed by the majority of students surveyed. This is consistent with teachers' methods and strategies and their ability to translate teaching into productive outcomes, as evidenced by the majority of responses, most of which are positive. Difficulties were recognized, particularly teachers' lack of interest in the problems, which they rated in subsequent interviews as having been overcome by watching difficult interviews and exercises. Other increases are due to the difficulties faced by the students, which is the lack of attention of the teachers in the content of the questions being studied (Olleras et al., 2022).

In conclusion, the main purpose of this study was to investigate the impact of blended pedagogy on teachers' ability to play a meaningful role in developing and maintaining a self-concept of curricular mathematics. At the beginning of the year, the teachers must inform the students that it is a very desirable subject to develop the habit of learning at their own pace. However co-educational pedagogy showed a significant positive effect on students' attitude towards mathematics. In addition, it improves interaction between students and teachers and facilitates group discussions and collaboration skills.

Methodology

Research Design

This study made use of a qualitative type of research utilized the Heideggerian Phenomenology. This study aims to elucidate and discover the lived experiences and possible enforcing factors of math teachers' pedagogical modification in full-to-face classes.

Participants

The researchers utilized a purposive sampling technique wherein the participants came from Badian National High School in Badian, Cebu. Among the secondary schools near the university, this has the greatest number of Math teachers. The mentioned sampling technique was meant to elicit further elaboration from participants about their lived experiences in teaching Mathematics in full face-to-face classes. Additionally, an inclusion criterion was developed to find the ideal participants for this study, where 10 people took part in this research.

Inclusion Criteria

- The participants are Math teachers.
- The participants must be teachers in Badian National High School.
- The participants should have experience in teaching Math from modular to face-to-face learning.

Procedure

A letter of consent was made and sent to the principal for approval in conducting an interview. After the researchers gained their approval, they started interviewing face-to-face setup within their school premises. During the interview, permission will be asked from them to take an audio recording. The researchers observed their modification in teaching. They made this interview a more vivid guide for direct understanding (Smith, 2019), which was accredited and interpreted (Cabello & Bonotan, 2020). This study established was

accurate in conducting data(Bryman & Bell, 2007).

Data Analysis

In this study, Bryman & Bell (2007), the Ten Principles of Ethical Consideration were applied. The following key ethical steps were taken during the study: (1) the dignity of the research participants was not compromised or impacted in any way; (2) respect for the participants' dignity was given top importance; (3) participants' permission was secured without the use of force or coercion; (4) there was no infringement of privacy among the participants; and (5) the participants' information was treated and appreciated with the highest care. (6) Anonymity was observed among the research participants and organizations involved in the research study; (7) there was no dishonesty or exaggeration in achieving the current study's goals and objectives; (8) any partisan from various funding and monetary engagement was explicitly disclosed in this publication, if applicable; (9) there was evidence of honesty, integrity, and transparency; and lastly, (10) there was no slant or bias.

Ethical Considerations

This study conforms to the standard of ethical considerations in research using the four (4) major principles: non-maleficence, beneficence, justice, and autonomy. In this study, student-researchers are free from any forms of harmful activities that could result to withdrawal or mortality in research. In contrast, the student-respondents gained benefits from the study by enhancing their science process skills specifically recognizing and controlling experimental research variables. They can perform authentic tasks based from the real-world scenarios as performed by scientists in exploring theories, laws, principles, and innovations for the betterment of the world community and the humanity. Moreover, the student-respondents were treated with fairness throughout the conduct of the study in which all of them have equal access to all the learning materials and activities regardless of their different background, religion, and culture. Thus, it follows the concept of inclusive education. Lastly, the student-respondents are well-informed about the procedure before, during, and after the conduct of the study in connection to debriefing as one of the essential components of ethical considerations.

Results and Discussion

After the researchers examined or analyzed the data collected, they found four essential themes namely, Theme 1: The Adjustment, Theme 2: The Struggle, Theme 3: The Motivation, and Theme 4: The Scheme. The four themes mentioned highlighted the actual experiences that math teachers had during the full face-to-face setup.

Table 1. *The Analysis*

Horizons	*Textual Language*	*Themes*
(P1): " Everything starts from zero jud, so, nag review gyud me sa previous lessons especially sa grade 6 nga Math". Everything starts from zero, we reviewed the previous lessons especially the math in grade 6.	Reviewed the Fundamentals	The Adjustment
(P5): " Gibalik gyud ang classroom engagement, nga ang bata mu engage gyud siya sa classrom discussion. Sauna sa modular wala man to ang bata mu engage sa classrom. Lahi ra man tong modular, dili man me kita nila atong modular." We brought back classrom engagement in which students will engage themselves in classroom discussions. Back when it's still modular, there's no students' engagement in classroom. Modular is way different, we haven't seen them during modular.	Initiating Classroom Engagement	
(P2): "Balik sa basic math kay mura me ug gatudlo ug elementary students pero pang highschool ug topic." Back to basic math because we are like teaching elementary students but with a highschool topic.	Recall the previous topic	
(P4): " Balik sa basic, nag adjust me, instead nga mu level up me sa questions, quizzes ug seat works, gi lower down namo ang standards para maka cope up." Back to basic, we adjusted, instead of leveling up the questions, quizzes and seat works, we lower down our standards in order to cope up.	Building math vocabulary	
(P3): " Ang bata kay wala gyud gidulaw. Walay nahibaw an sa niaging mga tuig sa ilahang modular class. Lisod tudlon sila. Ganahan gani me mubalik sa atong elementary nga lessons pero na a mn me lesson na gud nga ge sunod. The students don't know anything. They didn't know anything for the past two years in their modular class. And I had a hard time teaching them. I even want to go back to elementary lessons, but we also have topics to follow.	Computational weakness	The Struggle
(P10): "Sa pagka-karon nga nibalik na sila gikan sa modular lahi na jud sila, nga kanang murag nag salig sila sa kay modular man. Murag ihatag na nimo tanan nila, dili na sila kaayu mu cooperate, kung magdiscuss ka nag sige ra sila ug tan-aw nimo. Kung walay copy, wala gyud, gatungok ra sila. Mura silag elementary, naa na Gani sa board ang example, wa gihapon silay gidulaw, di gihapon manubag.	Offering differentiated learning opportunities	

Pero dili tanan, na a man sd uban makasabot ug mutubag. Pero mostly, daghan gyud ang dili ka cope up. Depende ra gyud na sa group sa students, kung na belong ba sila sa group na dili gyud mo cooperate sa discussion, wala gyud." Now that they've come back from modular, they're different, like they're relying on modular. It's like you give them everything, they won't cooperate, and when you are discussing in front of them, they will just look at you. If there is no copy, they don't care. They are like elementary school pupils, the example is already on the board, but they still don't know, and still don't want to answer. But not everybody, others will understand and answer. But mostly, many students cannot cope with the lessons. It really depends on the group of students, if they belong to the group of students that will never cooperate in the discussion, nothing good will happen.		
(P6): "Na challenge ko sa pagtudlo nila, lisod siya pag recall. Ang mga students, natulala gyud sila. Miski circle lisod gyud sa ila." It was a challenge for me to teach them, it was hard for them to remember the lessons. The students were really stunned. Even the circle is really difficult for them.	Discussing the plain figure	
(P7): " Daghan kaayu gyud. Wala silay nahibaw an bisag basic naman lamang jud about multiplication table. Attitude, behavior nila, mga spoiled kaayu." So many. They don't even know the basics of the multiplication table. Their attitude, behavior, they are very spoiled.	Difficulty comprehending the visual	
(P2): " Lisod kay gikan man sila sa modular." Maong dako kaayong hagit namo ang pagtudlo nila tungod sa modular Sila gikan. It's difficult because they come from modular." That's why it's a big challenge for us to teach them because they come from modular.	Perceptual difficulties	
(P1): "Nag create ug strategies like one by one ug check if kabalo ba sila mu-multiply kay if magklase sa grade 9 nga lesson, dili man sila kamao." We create strategies like one by one and check if they know how to multiply because if they take a grade 9 lesson, they are not good at it.	Knowledge enhancement	The motivation
(P3): Gi spoonfeed sila. More on lecture/discussion after kay activities by group then back to lecture na sad. Individual for summative test." We've spoon feeding them. More on lecture and discussion then after creating a group activity for their understanding and a summative test for the individual.	Independent learning	
(P5): "Patience, usa jud na ang dapat na a sa teacher. Kung dili ka pasensyado, everyday gyud na mo ulbo imong kaspa. Sige kag kasuko, pero dapat buyagon man gyud sila. Sige nakag balik labi na sa mga lower years, need pa gyud sila ug guidance tanan gyud from grade 8, 9 and 10. Sa higher years, arang arang arang ra. Dili lang kasab an kay maulaw na sila kay mga dalaga naman sila. Sa grade 7, murag mahurot gyud imong tingog. Patience is the one thing that a teacher should have. If your not like this,then you can get easily angry to your students. But even though their quite naughty you should stop them . Especially in the lower years, they really need guidance, all from grade 8, 9 and 10. In the higher year level you don't need to scold them because they can feel ashamed, theyre big already and can knows what they're doing.	Positive support	
Participant 6: "Teacher-student approach, mag discuss ko then tawag sa students. Sila nasad, ako napod. I-recap nako then sila nasad ako patubagon. Sa pag discuss, na discuss na nako then ibalik nasad nila." Teacher-student approach, I will discuss then call the students after. I will give a recap and then call somebody to answer .	Incorporating Effective teaching	
(P7): " Adjustment sa bata nga level. I push gyud nimo sila nga mu strive gyud ug maningkamot." (Adjustment of the child's level. You really need to push them in order for them to strive hard.)	Inspiring the students	
(P8): " I just motivate myself nga nindot ug muhatag ka ug extra effort beyond sa sweldo nga imo madawat sa DepEd aron matabangan ang mga students. Nindot nga maka touch ka sa life sa students." I just motivate myself that it's nice to give an extra effort beyond the salary you receive in DepEd to help the students. It's nice that you can touch the lives of students.	Self-Encouragement	
(P8): Naa silay sudden realizations nga, “ay in-anaon diay to ma’am”, “ay ouh”, mangutana na sila, then, “ay, kasabot nami ma’am.” Mga in ana, nga kanang maka sense ka nga nakasabot gyud sila sa mga discussions. Mga reactions nila nga na a silay sudden realizations nga, “ay sayop diay ni”, “ay mao diay ang sakto nga process ma’am”. They have sudden realizations like, “ah, it goes like this ma’am”, “ah oh”, they will ask, then say, “ah, we understand ma’am.” Those are the things that you can sense that the students really understand the discussions. Their reactions are that they have sudden realizations that, “ah, this is wrong”, “this is the right process ma’am.	Discovery Learning	The scheme
	The essence of	

(P9): Na a lang sila ma learn, bahala nga makalimtan na nila ugma. It doesn't matter if they forget the lesson. The most important thing is they learned from the lesson.	acceptance
(P10): Ari ko mag base sa higher, makakuha sila sa exam. Diha malipay ka nga nakasabot diay sila sa discussion. Wala na ta mahimo sa gamay pero atleast naka kat-on sila. (I will base on where most students gets the higher, so that they can answer the exam. Then you will be happy that they understand the discussion. There's nothing we can do about it, but at least they learned.	Teacher's contentment

The Adjustment

According to the research of Chirinda et al. (2021), mathematics teachers were adjusting to rapid change due to the pandemic which was impacting different schools in various contexts. This inspired them to be motivated no matter how difficult the situation they were facing.

As Participant 1 said,

"Everything starts from zero jud, so, nag review gyud me sa previous lessons especially sa grade 6 nga Math." ((Everything starts from zero, we reviewed the previous lessons especially the math in grade 6.)

This entails that, modular instruction affects the way how students learn. They become more dependent to the point that they have not learned at all. They just rely on the internet, parents or sisters upon answering which is why when the full face-to-face classes came back a lot of adjustments were made by teachers. Basic mathematical equations become complex to each student which pushed the teachers to review the previous lessons and back to basics.

In addition, Participant 4 also stated that,

"Balik sa basic, nag adjust me, instead nga mu level up me sa questions, quizzes, seat works, gi lower down namo ang standards para maka cope up."(Back to basic, we adjusted, instead of leveling up the questions, quizzes and seat works, we lower down our standards in order to cope up.)

This shows that as much as teachers wanted to level up their quizzes, seat works, etc. they can't move forward as they are teaching elementary students but with a high school topic. Even a simple multiplication became hard for a grade 9 student. So, they lower their levels according to each student's capabilities to cope or adjust to it.

Participant 2 added; "Balik sa basic math kay mura me ug gatudlo ug elementary students pero pang highschool ug topic." (Back to basic math because we are like teaching elementary students but with a highschool topic.)

Participant 5 stated that;

"Gibalik gyud ang classroom engagement, nga ang bata mu engage gyud siya sa classrom discussion. Sauna sa modular wala man to ang bata mu engage man gyud na sa classrom. Lahi ra man tong modular, dili man me kita nila atong modular." (We brought back classroom engagement in which students will engage themselves in classroom discussions. Back when it's still modular, there's no students' engagement in classroom. Modular is way different, we haven't seen them during modular.)

This entails that, another form of adjustment done by teachers is to engage each student in classroom discussions.

The Struggle

According to the research of Trenholm & Peschke (2020), mathematics teachers are struggling to adapt the full face-to-face instruction due to the pandemic crisis that brought online classes implementation of blended learning classes set up. Most of them encountered challenges and difficulties in face-to-face setup when it comes to retrieval dissemination, and transfer of learning quality modules, dealing with students' difficulties in the classroom. These have been the struggles faced by the teachers during the modular instruction, however, when full face-to-face classes were implemented after the modular instruction, the researchers went into a study about the struggles being faced by the teachers as they implement their pedagogies.

Participant 3 mentioned that,

"Ang bata kay wala gyud gidulaw. Walay nahibaw an sa niaging mga tuig sa ilahang modular class. Lisod tudlon sila. Ganahan gani me mubalik sa atong elementary nga lessons pero na a mn me lesson na gud nga ge sunod." (The students don't know anything. They didn't know anything for the past two years in their modular class. And I had a hard time teaching them. I even want to go back to elementary lessons, but we also have topics to follow.)

Experiencing the two years of modular classes made students lack understanding which they need to be knowledgeable for them to earn learnings. Putting such effort regards teachers is the best way to cope with the topic.

Teacher 10 also said that,

"Sa pagka-karon nga nibalik na sila gikan sa modular lahi na jud sila, nga kanang murag nag salig sila sa kay modular man. Murag

ihatag na nimo tanan nila, dili na sila kaayu mu cooperate, kung magdiscuss ka nag sige ra sila ug tan-aw nimo. Kung walay copy, wala gyud, gatungok ra sila. Mura silag elementary, naa na Gani sa board ang example, wa gihapon silay gidulaw, di gihapon manubag. Pero dili tanan, na a man sd uban makasabot ug mutubag. Pero mostly, daghan gyud ang dili ka cope up. Depende na gyud na sa group of students, kung na belong ba sila sa group na dili gyud mo cooperate sa discussion, wala gyud." (Now that they've come back from modular, they're different, like they're relying on modular. It's like you give them everything, they won't cooperate, and when you are discussing in front of them, they will just look at you. If there is no copy, they don't care. They are like elementary school pupils, the example is already on the board, but they still don't know, and still don't want to answer. But not everybody, others will understand and answer. But mostly, many students cannot cope with the lessons. It really depends on the group of students, if they belong to the group of students that will never cooperate in the discussion, nothing good will happen).

Independent learning would undergo this situation, students know nothing they're used to being in a modular mode of classes wherein the answers are already given in every activity or assessment. Double time and effort should do.

In addition, Teacher 6 entails that,

"Na challenge ko sa pagtudlo nila, lisod siya pag recall. Ang mga students, natulala gyud sila. Miski circle lisod gyud sa ila." (It was a challenge for me to teach them, it was hard for them to remember the lessons. The students were stunned. Even the circle is really difficult for them.)

Teachers find it hard how they can teach their students, and how they can recall the topic as students don't know how to catch up with the lessons. Simple computations become more complex for them.

Participant 7 mentioned that,

"Daghan kaayu gyud. Wala silay nahibaw an bisag basic naman lamang jud about multiplication table. Attitude, behavior nila, mga spoiled kaayu." (So many. They don't even know the basics of the multiplication table. Their attitude, behavior, they are very spoiled.)

The shift of education affects students the most. Most of the students never learned from the modules which is true and they did not comprehend of what was covered in the modules. Resulting that they have difficulty understanding lessons in person.

Then, participant 2 said that,

"Lisod kay gikan man sila sa modular." Maong dako kaayong hagit namo ang pagtudlo nila tungod sa modular Sila gikan." (It's difficult because they come from modular." That's why it's a big challenge for us to teach them because they come from modular.)

Facing this new normal situation is a big challenge for teachers, positivity, effort, and patience are more important in teaching students experiencing modular mode of classes.

This theme is all about the struggle and how difficult it is for the teachers to implement their pedagogies towards the students who just came back in full face-to-face classes after experiencing unexpected modular instruction. The above responses of the teachers indicate that most of them encountered difficulties in how they teach those students who are struggling to catch up with the lessons.

The Motivation

There is a strong link between motivation in the learning process. The foundation of human goals and accomplishments is motivation (Gopalan et al. 2017). Math teachers have a motivation drive which is essential for academic success, and without a fighting spirit, nothing is possible in teaching face-to-face classes in both the classroom and in real life. On the other hand, this encourages the researchers to dig through the motivations or coping mechanisms of Math teachers amidst the challenges that they have been through.

Participant 1 said that,

"Nag create ug strategies like one-by-one ug check if kabalo ba sila mu-multiply kay if magklase sa grade 9 nga lesson, dili man sila kamao." (We create strategies like one by one and check if they know how to multiply because if they take a grade 9 lesson, they are not good at it.)

Teachers do initiate strategies on how they can impart learning to their students given the fact that students find it hard to learn a lesson according to their year level. To cope with this challenge, they use basic lessons such as multiplication because the teacher admitted that, even a grade 9 student doesn't know how to multiply. This has been very hard on the teacher's side but still, they give all their efforts just to make the students learn.

Participant 3 also stated that,

"Gi spoon feed sila. More one lecture/discussion after kay activities by group then back to lecture na sad. Individual for summative test." (We've spoon feeding them. More on lecture and discussion then after creating a group activity for their understanding and a summative test for the individual.)

Spoon feeding also served as the coping mechanism for teachers as they were challenged to create pedagogies that could meet the

needs of the students at the time when they fully entered the full face-to-face classes right from the modular learning.

Participant 5 entails that,

"Patience, usa jud na ang dapat na a sa teacher. Kung dili ka pasensyado, everyday gyud na mo ulbo imong kaspa. Sige kag kasuko, pero dapat buyagon man gyud sila. Sige nakag balik labi na sa mga lower years, need pa gyud sila ug guidance tanan gyud from grade 8, 9 and 10. Sa higher years, arang arang arang ra. Dili lang kasab an kay maulaw na sila kay mga dalaga naman sila. Sa grade 7, murag mahurot gyud imong tingog. (Patience is one of the things that a teacher should possess. If you're not like this, then you will easily get angry to your students. But even though their quite naughty you should stop them. Especially in the lower years, they really need guidance, all from grade 8, 9 and 10. In the higher year level you don't need to scold them because they can feel ashame, they're big already and knows what they're doing.)

The teacher employs how important the attitude of "patience" is during the teaching process. If you are not patient enough, then there's no chance for you to cope with the challenges you have encountered. Without patience, you will not be motivated to do your part as a teacher. This explains why patience is a virtue.

Participant 6 also said that,

"Teacher-student approach, mag discuss ko then tawag sa students. Sila nasad, ako napod. I-recap nako then sila nasad ako patubagon. Sa pag discuss, na discuss na nako then ibalik nasad nila." (Teacher-student approach, I will discuss then call the students after. I will give a recap and then call somebody to answer.)

Encouraging students to be involved in the classroom discussion helps teachers know if students have learned something throughout the lessons. If students we able to engage themselves in the discussion, this motivates the teachers to do better and keep going.

Participant 7 mentioned that,

"Adjustment sa bata nga level. I push gyud nimo sila nga mo strive gyud ug maningkamot." (Adjustment of the child's level. You really need to push them in order for them to strive hard.)

Motivating the students to strive hard and make some adjustments towards their level has also become a way for teachers to deal with their struggles in teaching them. If they were able to motivate their students and make a difference then it would be a great achievement for them

Participant 8 stated that,

"I just motivate myself nga nindot ug muhatag ka ug extra effort beyond sa sweldo nga imo madawat sa DepEd aron matabangan ang mga students. Nindot nga maka touch ka sa life sa students." (I just motivate myself that it's nice to give an extra effort beyond the salary you receive in DepEd to help the students. It's nice that you can touch the lives of students.)

This theme, the motivation, brings us to the deeper perspectives of teachers on how they were able to cope with the challenges during their modification of pedagogies as well as their motivations. From the responses of the teachers, it can be seen that amidst those struggles, they are still able to stand up, continue what they started, and give their heart out to making changes in their student's lives. Their passion for teaching motivated the teachers to do their best. They may be given any compensation or not, what matters the most is that they were able to help and touch the lives of the students.

The Scheme

According to the study of Belleza and Feliciano (2018), learning skills of mathematics at various grade levels throughout a certain grading period impacts the scheme choice of the instructors in teaching mathematics. As the teachers began to adjust and modify their pedagogies during the implementation of the full face-to-face classes, the researchers went into a thorough study about the teacher's scheme and how it was attained.

As Participant 8 stated,

"Naa silay sudden realizations nga, "ay in-anaon diay to ma'am", "ay ouh", mangutana na sila, then, "ay, kasabot nami ma'am." Mga in ana, nga kanang maka sense ka nga nakasabot gyud sila sa mga discussions. Mga reactions nila nga na a silay sudden realizations nga, "ay sayop diay ni", "ay mao diay ang sakto nga process ma'am". (They have sudden realizations like, "ah, it goes like this ma'am", "ah oh", they will ask, then say, "ah, we understand ma'am." Those are the things that you can sense that the students really understand the discussions. Their reactions are that they have sudden realizations that, "ah, this is wrong", "this is the right process ma'am.)

This shows that students come up with sudden realizations that refresh their minds on the lesson and teachers can make sense of what their students understand from their discussion. After all, the students can identify whether their answers are right or wrong and they discover the appropriate process in the lecture. They discovered new ideas from the lesson being discussed by the teachers. Teacher's attainment from their scheme is the sudden realizations of the students which serves as an indication that they learned something.

Then, participant 9 also said that,

"Na a lang sila ma learn, bahala nga makalimtan na nila ugma." (It doesn't matter if they forget the lesson. The essential point is they learned from the lesson.)

As long as they did their best to teach the students and learned something during their discussion becomes their greatest attainment and it is up to the students to forget or remember those lessons.

Thus, Participant 10 said that,

"Ari ko mag base sa higher, makakuha sila sa exam. Diha malipay ka nga nakasabot diay sila sa discussion. Wala na ta mahimo sa gamay pero atleast naka kat-on sila. (I will base on where most students get the higher, so that they can answer the exam. Then you will be happy that they understand the discussion. There's nothing we can do about it, but at least they learned.)

Based on the scores of the students within the higher level in can be seen that they were able to attain a satisfactory score, this signifies the teachers that students learned. Upon realizing these results, the teacher felt glad that they were able to achieve something from their scheme.

This theme, the scheme will make us see how the attainment of each teacher's scheme will have an impact on them as well as their hopes towards their schemes. From the results above, we can see that the greatest achievement of teachers is that students will be able to learn from their discussions.

Conclusions

Math is known for being a difficult subject, and it became more challenging when various changes happened. Teachers made numerous adjustments and modifications to their pedagogies to impart learning to their students, beginning with modular instruction and progressing to full face-to-face classes. Coping with all of these changes has been a huge challenge for math teachers. In addition, math teachers initiate classroom engagement and review the basic lessons as their form of ADJUSTMENT. During the process, they also experienced STRUGGLES, like finding it difficult to deliver the lessons. They have focused their MOTIVATIONS on dealing with these difficulties to cope with them. One of the schemes that they want to achieve as they do their best in teaching difficult subjects is that their students learn the lessons. The teachers' real-life experiences may inspire administrators to listen to their concerns and devise ways for them to benefit. It is recommended to always ask for their state and be able to address their needs for a better teaching and learning process.

References

Agayon, A. J. D., Agayon, A. K. R., & Pentang, J. (2022). Teachers in the new normal: Challenges and coping mechanisms in secondary schools. Journal of Humanities and Education Development (JHED), 4.

Alase, A. (2017). The interpretative phenomenological analysis (IPA): A guide to a good qualitative research approach. International journal of education and literacy studies, 5(2), 9-19.

Ando, K., Basilisco, J., Deniega, A., Gador, K., Geraldo, P. J., Gipulao, W. E. M., ... & Minyamin, A. (2022). Learning without Learning in the New Normal: College Education Students Lived Experiences in Blended Learning Modality. Psychology and Education: A Multidisciplinary Journal, 2(6), 455-464.

Atweh, B. (2022, July 28). Futures for Post-Pandemic Mathematics Teacher Education: responsiveness and responsibility in the Face of a Crisis. SpringerLink. https://bit.ly/3Ul2isE

Bacong, J., Encabo, C. M., Limana, J. M., & Cabello, C. (2023). The High School Students' Struggles and Challenges in Mathematics: A Qualitative Inquiry. Psychology and Education: A Multidisciplinary Journal, 12(3), 306-312.

BAHINTING, M. A., Ardiente, M., Endona, J., Herapat, M. A., Lambo, D., Librea, H. J., ... & Minyamin, A. (2022). Stronger than the Internet Connectivity: A Phenomenology. Psychology and Education: A Multidisciplinary Journal, 2(6), 465-476.

Beriawel, H. A., Sacnanas, E. M., Ferolino, S. M., & Cabello, C. (2023). Aftershocks of Modular Distance Learning: The Parents' Lived Experiences. Psychology and Education: A Multidisciplinary Journal, 12(3), 295-306.

Binondo, J. M. B., Binondo, J. R., & Cabello, C. (2023). Teachers' Resiliency in Modular-Printed Modality: A Phenomenology. Psychology and Education: A Multidisciplinary Journal, 14(10), 1180-1188.

Bringula, R. (2021, October 16). Mathematics self-concept and challenges of learners in an online learning environment during COVID-19 pandemic - Smart Learning Environments. SpringerOpen. https://bit.ly/3Uo0rTQ

Bringula, R., Reguyal, J.J., Tan, D.D. et al. Mathematics self-concept and challenges of learners in an online learning environment during COVID-19 pandemic. Smart Learn. Environ. 8, 22 (2021). https://doi.org/10.1186/s40561-021-00168-5

Bell, E., & Bryman, A. (2007). The ethics of management research: an exploratory content analysis. British journal of management,

18(1), 63-77.

Cabello, C. A. (2022). Higher education professors in blended learning modality of teaching: The silent tears of heroes towards resiliency. Journal of Positive School Psychology, 6(3), 6171-6183.

Cabello, C. A., & Bonotan, A. M. (2021). Designing and validating an instrument to assess the wellness of business process outsources' customer service associates. Asia Pacific Journal of Multidisciplinary Research, 9(1), 1-11.

Cabello, C., Ancot, R., Cabanog, A. M., & Doble, C. (2023). Expediency in Honing Literacy and Numeracy in the New Normal. Psychology and Education: A Multidisciplinary Journal, 12(2), 1-1.

Cabello, C., Libradilla, C., Derequito, F., & Derequito, D. D. (2023). Fundamental Understanding of Mathematical Problems: Challenges and Breakthroughs. Psychology and Education: A Multidisciplinary Journal, 12(2), 1-1.

Capua, R. D. G. (2021, March 17). Math Teachers' Pedagogical Practices: An Index to Students Learning Outcomes | EDUCATUM Journal of Social Sciences. https://ejournal.upsi.edu.my/index.php/EJOSS/article/view/4292

Cassibba, R. (n.d.). Teaching Mathematics at Distance: A Challenge for Universities. MDPI. https://bit.ly/3UpGYSO

Cassibba, R., Ferrarello, D., Mammana, M. F., Musso, P., Pennisi, M., & Taranto, E. (2020). Teaching mathematics at distance: A challenge for universities. Education Sciences, 11(1), 1.

Chirinda, B.; Ndlovu, M.; Spangenberg, E. Teaching Mathematics during the COVID-19 Lockdown in a Context of Historical Disadvantage. Educ. Sci. 2021, 11, 177. https://doi.org/10.3390/educsci11040177

Delbo, M. J., Remollo, B., Ramirez, M. C., Lasdoce, L., & Cabello, C. (2023). Solicited, Summed and Sorted Experiences of Teachers in Modular Instruction: A Story to Tell. Psychology and Education: A Multidisciplinary Journal, 12(3), 267-276.

Emia, A. J., Lamosao, R., Lamosao, R., Silagpo, A. M., Cantila, J., Albite, C., ... & Minyamin, A. (2022). The Pre-Service Teachers' Uphill Climb in the New Normal: Stories to Tell. Psychology and Education: A Multidisciplinary Journal, 2(6), 529-540.

Ferlazzo, L. (2021, March 24). Strategies for Teaching Students Online and Face to Face at the Same Time (Opinion). Education Week. https://bit.ly/3XJ5Sjg

Gabriel, B. C., Nepomuceno, J. D., Kadusale, M. H., Taneo, J. D., & Cabello, C. A. (2022). The Compromised Most Essential Learning Competencies: A Qualitative Inquiry.

Gantalao, N., Gantalao, R., Romeo, A., Torino, R., & Cabello, C. (2023). Identifying Obstacles in Facing the Full Face-To-Face Classes: A Qualitative Inquiry. Psychology and Education: A Multidisciplinary Journal, 12(3), 237-248.

Gilani, N., Waheed, S. A., & Shaheen, A. (2020). Making a debut in teaching: Uncovering prospective teachers' first-time teaching experiences in schools. Universal Journal of Educational Research, 8(11), 5443-5452. DOI: 10.13189/ujer.2020.081147.

Gomez, J., Dumon, J. M., Trasmonte, E., Carreon, L., & Cabello, C. (2024). Desirable or Undesirable: Attitude and Behavior of Students toward Transitioning from Online to Face-to-Face Mode of Learning. Psychology and Education: A Multidisciplinary Journal, 21(2), 207-217.

Gopalan, V., Bakar, J. A. A., Zulkifli, A. N., Alwi, A., & Mat, R. C. (2017, October). A review of the motivation theories in learning. In Aip conference proceedings (Vol. 1891, No. 1). AIP Publishing.

Jaicten, A. R., Uzarraga, A. R., Rodriguez, R., & Cabello, C. (2023). A Review of Stories Untold in Modular Distance Learning: A Phenomenology. Psychology and Education: A Multidisciplinary Journal, 12(3), 230-237.

Kalariparambil, S. (n.d.). Secondary Mathematics Teachers' Experiences with Technology Integration in a One-to-One School District During Face-to-Face and Remote Instruction: A Phenomenography. DigitalCommons@Kennesaw State University. https://bit.ly/3iqKkb9

Martínez, S. (2020d, March 21). On the instructional model of a blended learning program for developing mathematical knowledge for teaching. SpringerLink. https://bit.ly/3ucVAdF

Olleras, J. L., Dagwayan, M., Dejacto, A. M., Mangay, J. R., Ebarsabal, M., Diaz, D. J., ... & Minyamin, A. (2022). The life of the laters: Students procrastination in accomplishing academic deadlines in online learning. Psychology and Education: A Multidisciplinary Journal, 2(5), 444-454.

Perez, Z. O., Minyamin, A. V., Bagsit, R. D., Gimena, G. B., Dionaldo, W. V., Padillo, E. S., ... & Cabello, C. A. (2022). Research capability of faculty members in higher education institution: Basis for research management plan. Journal of Positive School Psychology, 6(3), 6215-6226.

Segarino, G. M., Labisig, J., Calmerin, L., & Cabello, C. (2022). SIMS as Intervention in Enriching the Teaching of Fundamental

Operations in Mathematics: An Action Research. Psychology and Education: A Multidisciplinary Journal, 5(1), 11-20.

Stoian CE, Fărcașiu MA, Dragomir G-M, Gherheș V. Transition from Online to Face-to-Face Education after COVID-19: The Benefits of Online Education from Students' Perspective. Sustainability. 2022; 14(19):12812. https://doi.org/10.3390/su141912812

Thompson, A. G. (2003). The relationship of teachers' conceptions of mathematics and mathematics teaching to instructional practice. In Mathematics education (pp. 185-204). Routledge.

Trenholm, S., & Peschke, J. (2020). Teaching undergraduate mathematics fully online: a review from the perspective of communities of practice. International Journal of Educational Technology in Higher Education, 17(1), 37.

Villar, M. C. G., Filipinas, J. P., Villanueva, J. B., & Cabello, C. A. (2022). The transition, transformation, and adaptation from modular-printed instruction to limited face-to-face Classes: A phenomenology.

Whittemore, R., Chase, S. K., & Mandle, C. L. (2001). Validity in qualitative research. Qualitative health research, 11(4), 522-537.

Affiliations and Corresponding Information

Maria Mae A. Singco
Cebu Technological University – Philippines

Kim Louie Frances N. Andulana
Cebu Technological University – Philippines

Marivic E. Layola
Cebu Technological University – Philippines

Analyn S. Navarro
Cebu Technological University – Philippines

Jane Rose C. Pañe
Cebu Technological University – Philippines

Jessa Marie Sanchez
Cebu Technological University – Philippines

Kristine O. Valera
Cebu Technological University – Philippines

Cyril A. Cabello PhD(c)
Cebu Technological University – Philippines