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A PHENOMENOLOGICAL INQUIRY ON TEACHERS TEACHING MATHEMATICS IN DISTANCE LEARNING

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Abstract

. This qualitative research used a phenomenological research design to document the lived experiences of mathematics teachers who employed modular distance learning. Purposive sampling was used to select 20 teachers and focus group discussions to seek in-depth information. Phenomenology is looking into the 'lived experiences of the participants and aims to examine how and why participants behaved a certain way. To conduct a qualitative method of research, the researcher must consider the questions based on the statement of the problem, set the most convenient time and place for the discussion, prepare materials needed, assign a secretary and assistant to record the discussion, make an introduction, ask questions in such a way that they understand it, make sure it's open-ended, encourage more answers, prepare and organize the data, develop a data coding system, assign codes to the data, identify recurring themes, and link codes together into cohesive, overarching themes. This study found that modular distance learning (MDL) is the most appropriate instructional modality during the pandemic, but that teachers face personal difficulties such as stress, health problems, and social interaction with others. Teachers have adapted by extending their working hours, using patience, open-mindedness, and gratefulness, following safety protocols, simplifying modules and instructions, being adaptive in terms of technology, and using varied strategies to develop effective learning. They also use their own money to buy materials and communicate with parents and ask for help.

KEYWORDS: BLENDED LEARNING, MATHEMATICS INSTRUCTIONS, DISTANCE LEARNING

INTRODUCTION

Effective teaching in schools is a major concern in many countries, as teachers are essential instruments in delivering quality learning. However, various challenges in the field of education may hinder the delivery of effective teaching and learning, such as the outbreak of the new coronavirus infection known as Covid-19. This pandemic has caused widespread disruptions such as travel restrictions, global economic recession, closure of schools, and face-to-face engagement of students and teachers. To contain the spread of COVID-19,

governments around the world have authorized unprecedented social containment measures, such as social distancing and restrictive movement policies. The pandemic has created the largest disruption of education systems in human history, affecting nearly 1.6 billion learners in more than 200 countries.

The Covid 19 pandemic has had a major impact on the educational landscape, leading to a shift from traditional in-person classroom instruction to predominantly distance learning. The Department of Education (DepEd) has adopted the Basic Education - Learning Continuity Plan (BE-LCP) to provide quality distance learning with self-learning modules in digital and printed form, radio, television, and the internet. This is consistent with Article XIV sec.2 of the Basic 1987 Philippine Constitution which states that education must continue despite unexpected obstacles. The state must establish, maintain, and support a complete, adequate, and integrated system of education to meet the needs of the people and society. During the Covid 19 pandemic, the teacher must prepare learners on how to adapt to change and face-to-face learning is not an option.

Home school and online learning are proposed solutions, and technology is of great help. Distance education is a form of learning experience where the learner and instructor are physically separated from each other. It has three types: Modular Distance Learning (MDL), Online Distance Learning (ODL), and TV/Radio-Based Instruction. In the Philippines, modular learning is the most popular type of Distance Learning and is currently used by all public schools. Teachers play a vital role in the process.

ABSTRACT

This study attempted to unfold the lived experiences of mathematics teachers in the delivery of modular instruction in selected elementary schools in Bulan, Sorsogon, namely: Bulan South Central School and Obrero Elementary School for the School Year 2021-2022. After a thorough analysis of the data, it rolled out insightful answers to the questions hereunder:

1. What are the lived experiences of the teachers using modular distance learning (MDL) in developing the mathematical skills, content, and values of the learners?

2. How do teachers develop the mathematical skills, content, and values of the learners using modular distance learning (MDL)?

3. What are the different strategies applied by the teachers in modular distance learning (MDL) to develop the learner's skills, content, and values in mathematics?

4. What are the challenges encountered by the teachers in enhancing the content, skills, and values of the learners in modular distance learning (MDL)?

5. How do teachers cope with challenges experienced by them in the delivery of modular distance learning (MDL)?

6. After the phenomenological inquiry, what effective strategies can be proposed to develop the mathematical skills, content, and values of the learners during the pandemic?

Findings and Interpretations

Through careful analysis of the responses of the participants, the following findings revealed:

1. The Lived Experiences of Teachers using modular distance learning in developing the mathematical skills, content, and values of the learners

A. Effectiveness of MDL in developing mathematical skills, content, and values of the learners

The participants claimed that modular distance learning as a form of learning modality instruction is an effective way to develop learners' knowledge of mathematics. Learners learn independently since it is designed in a way that it is a self-learning module that they can explore as they go over the parts and pages of it. Columbano1 affirmed that the module is a self-instructional package dealing with one specific subject in a convenient form. A modular approach as a form of instruction can be employed so that the students could learn at their own pace and they also assume responsibility for their learning since the modular approach in teaching is structured so that students can go over and over the topics they understand. The production of instructional materials is time-consuming but quite rewarding since its goal is to enable the students to learn the subject easier.

Participants also mentioned that through modular distance learning, parents and learners have the opportunity to bond and spend more time together while doing the modules and learning the lessons. Distance learning necessitates the parents to study along with their child for a better learning outcome. It was affirmed in the study of Bhamani et al.,2 that Parents agree that the lockdown has brought with it seemingly limitless time and this could be a unique opportunity to try out new things and ideas. They believe in getting creative with the kids, which positively affects both parties and makes the days look fruitful. From arts and crafts to cooking, from dancing to singing, parents and their children are open to all ideas.

Furthermore, participants stated why they are in favor of distance learning and the appropriateness of the modality in our country, the safety of learners, and equal opportunity in education for those who don't have internet connections

B. Ineffectiveness of MDL in developing mathematical skills content and values of the learners

Participants in this study also shared that although they find MDL as an effective learning modality in developing mathematical skills, content, and values of the learners they also shared and find MDL ineffective in some ways in developing learners' ability in mathematics. Such reasons are limited interaction with the teachers, lack of discipline from other learners to accomplish the modules on time, their health is at risk given that they might be exposed to the such virus for distributing and retrieving the modules and doing home visitations, and not enough parental support, have to go out and the like.

Teachers can only monitor their learners' academic progress through text messaging and phone calls, unlike, the usual face-to-face

classes where they can supervise and facilitate their learning. Some parents pamper their children and do their tasks instead of them some parents are the ones answering the modules in place of their children for different reasons. some are doing their work from home in an online working set-up, and some are busy with chores and other household tasks instead of teaching their children the modules because they don't have the time to do so, they are the ones answering it. Parents are having a hard time teaching their children with modules some parents are having a hard time teaching their children at home especially those in the higher grades and the secondary students whose lessons are more complicated and no one is better to teach than the teacher. some parents do not know how to read and write, making it more difficult to teach their children the lessons in their subject areas.

Not all parents/guardians are knowledgeable in teaching their children using modular distance learning so hard for them. MDL should be blended with ODL if possible so the parents and pupils can gain better assistance from teachers. Modular distance learning modality is better than online classes, especially in our locality. Maybe they can produce the module earlier so it can help the teachers in doing their WHLP. Modular distance helps for the continuous educational level of pupils but not their learning of them.

2. How teachers develop mathematical skills, content, and values using MDL

The participants claimed that giving instructional support in modular instruction is a necessary way that aids in how they develop mathematical skills, contents, and values among learners. These are the access to resources that support the teaching and learning process within the school. This support ranges from government-issued resources, access to educational materials, human resources, examination guidance, and standardized teaching methods. They also claimed that giving and providing supplemental books, video lessons, continuous reminders to learners about the lessons through online messaging, encouraging learners to ask questions or help about the unclear instructions, Clarifying the lessons to learners via online, home visitation, and asking support from parents, using varied effective strategies in mathematics in using MDL are some of the ways they did to develop knowledge in mathematics.

3. Teachers' strategies using MDL in developing mathematical skills, content, and values

Teaching strategies, also known as instructional strategies, are methods that teachers use to deliver course material in ways that keep students engaged and practicing different skill sets. An instructor may select different teaching strategies according to a unit topic, grade level, class size, and classroom resources. Many kinds of instructional strategies are employed to achieve teaching and learning goals and support different kinds of students.

In this study, participants stated the different strategies they used whilst in modular instruction. These are explicit instructions, learning by doing, hands-on practice, conceptualization, cooperative learning, inquiry-based learning, homework and

projects, the use of fun math activities, puzzles, and game-based learning.

4. Challenges encountered by the teachers using MDL in enhancing the mathematical skills, content, and values

Change is inevitable, especially during this time of the pandemic. Anyone who experiences change may feel anxious since it signifies stepping out of their comfort zone. The sudden transition from face-to-face learning to distance learning modality made teachers feel anxious. The COVID-19 pandemic has had a major effect on our lives. Many of us are facing challenges that can be stressful and overwhelming. Most of the participants agreed that modular distance learning is the most appropriate instructional modality during the pandemic in their respective schools. However, teacher participants grapple with personal difficulties including stress, health problems, and social interaction with others.

Participants experiences stress and anxiousness as they shared their statements in this study. They mentioned the following challenges such as low performance in math, especially in the result of summative tests, pupils are teacher dependent instead of developing self-independence using the modules in learning, and pupils cannot cope with the lessons in the modules due to the reasons that they didn't master the basic skills in math during their previous grade level and that they have poor reading comprehensions. Poor study habits among learners were also mentioned by the participants resulting in delayed accomplishments of modules on the part of the learners. Lack of interest in the lesson was also one of the challenges due to different responsibilities, hindrances, and disturbances in their homes. Another is a lack of support from learners' guardians, parents, and family members due to insufficient or no time at all on the part of the parents because of work or uneducated parents that's why they can't share any knowledge with their children. Another reason is that pupils are not yet well adjusted to the new normal situation that's why they keep on requesting home visitations that might sacrifice the health and safety of the teachers. Insufficient materials from the government and schools of the participants such as bond paper, inks, computers/laptops, and printers are the basic needs in reproducing the copies of modules to be used by learners. The additional workload for the teachers resulted in the inability to manage their time because they would extend their time at school for printing, reaching out to learners remotely and submission of different forms and papers works, that's why some of the teacher participants weren't able to enjoy the prerogative of work-life balance.

5. Coping mechanisms of teachers

Despite the fears and changes in the educational system, teacher participants consider modular distance learning as a necessary shift for DepEd to continue its mission of delivering education to learners. Participants in this study shared their coping mechanisms to adapt and perhaps alleviate environmental stress to find comfort while doing their duties as a teacher developing the learners' knowledge in mathematics. Certain coping mechanisms that were stated by the participant are as follows: They extended their working hours just so they can finish their tasks, and they said the virtues such as patience, open-mindedness, and gratefulness are among the things that they value the most

during these trying times. Extra effort and their burning passion to deliver learning are what they always bear in mind, Following safety protocols is being responsible for themselves and their learners so that they can pursue what they have started. They also simplify modules and instructions for the learners to grasp the content of the lessons. Monitoring is vital to know how pupils are engaging in the lesson as well as their progress. Teachers strive to be adaptive in terms of technology so that they can easily reach out to their learners and gave additional support and instructional learning, it makes their paper works faster and easier to accomplish. The use of varied strategies to develop effective learning is also their way to cope with the challenges of using MDL. They tried different ways to know which strategy is highly effective among their sets of learners. Participants also stressed that they use their own money to buy materials such as printers, laptops, inks, and bond papers to make sure that they can supply the modules to the learners on time. Communicating with the parents and asking for help is their way as well to cope with the delivery of modular instruction lastly they said that even if time management is almost impossible during this pandemic in the life teacher still try to manage their time as possible as they can to maintain work-life balance for themselves, their learners and their love ones.

6. Proposed effective strategies using MDL to develop the content, values, and skills of learners during the pandemic

Participants claimed that the use of strategies in teaching helps them to effectively develop math skills and knowledge using modular instruction. Furthermore, whether you are a new or seasoned teacher it is difficult to decide which teaching strategies will work best with your learners. As a teacher, there is no one size fits all solution so here is a range of effective teaching strategies stated by the teacher participants. Most of them mentioned explicit instructions, inquiry-based, cooperative learning, conceptual strategy, visualization, use of technology, reward giving or positive reinforcement, technology-based strategy, using real-life situations, home peer teaching, using math puzzles, game-based strategy, incorporating storytelling to make connections to real-world scenarios, the use of assignments or homework, and project strategy, engaging in professional development on the part of the teachers such as attending seminars or webinars.

Conclusion

Based on the findings and interpretations presented, the researcher formulated the following conclusions:

The full impact of school closures and the move to distance learning as a result of the COVID-19 / Coronavirus pandemic on teachers will never be known. The best we can do is seek to know and understand the experiences of educators during this time. This study and its findings make evident the genuine need for additional research on the experiences of teachers during the pandemic and the period of distance learning. Of great concern and in need of attention is that of teachers' mental health and their considerations of leaving the profession if distance learning must continue in some capacity in the future. There is certainly a

need for Another avenue for research would be to address in detail, the content changes teachers made in various academic areas to accommodate the constraints of distance learning, as well as how a project-based model of education aligns within the parameters of distance teaching and learning. These are only a few possibilities as the opportunities for further research are numerous. and dedication to supporting and providing the learning needs of the learners for they uphold that "every child should continue learning access quality education" amid the COVID-19 pandemic.

Teachers experienced a fast transition and change in the teaching and learning process from traditional in-person learning to distance learning. The use of modular distance learning has a positive and negative impact on developing the mathematical skills, content, and knowledge of the learners as shown in the lived experience of the teachers. Despite the sudden change in the education system of the country, teachers create and innovate various ways to deliver education to every learner. It is evident in the lived experiences of teachers from Bulan South Central School and Obrero Elementary School, teachers showed persistent commitment to developing learners' abilities in mathematics with the help of technology, school, parents, and community. However, teachers experience different challenges in the implementation of modular distance learning in developing learners' knowledge of mathematics that resulted in gaps and challenging factors and situations that may hinder or negatively affect the effective delivery of modular distance learning such as the needed assistance in monitoring learners' actual progress and assessing their actual academic performance. These weaknesses resulted from learners' low interest in their studies and the parent's lack of knowledge and skills as learning facilitators at home. Due to the challenges met by the teachers in employing MDL, they think and create solutions to cope with the present situation even sacrificing their health and money. While schools have a budget allocation for the shift to distance learning filed under school maintenance and other operating expenses (MOOE), teachers said this budget can be easily depleted due to the sheer number of modules that need to be printed. Teachers from public schools took it upon themselves to launch donation drives to raise funds for bond paper and printers. Furthermore, being an effective teacher, in developing the mathematical skills, content, and knowledge of the learners requires the utilization of creative and innovative teaching strategies to meet the learners' individual needs. Teacher participants experience using varied strategies that they recommend deemed to be effective.

Recommendations

1. Better orientation and debriefing for teachers amid modular distance learning be established and designed by DepEd as a strategy to improve the working conditions of the teachers to help them positively take modular distance learning as a new normal learning modality instruction.

2. The curriculum be revisited and reduced the activities and take out unnecessary topics. Lessen the reports and papers works of teachers and let them focus on teaching itself. Supervisors and administrators should devise strategic planning together with the teachers and parents. Consistent and enough time in assessing and monitoring pupils'

performance must be taken into consideration for a better learning outcome for the learners.

3. Innovation be conceptualized by DepEd to empirically test strategies deemed to be effective in developing mathematical skills, content, and values.

4. The provision of equipment essential to modular distance learning be provided to teachers in a financially flexible way. DepEd needs to realignment of its budget to fund distance learning and consider the provision of funds to cover learning resources.

5. Procedural interventions targeting these specific factors may be proposed to better the implementation of modular distance learning.

6. Further research about powerful learning strategies to be adapted to level up learning.