

Pedagogical Practices of Elementary Teachers in Promoting Numeracy Skills Amidst Pandemic

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ABSTRACT: *This study aimed to describe the pedagogical practices of elementary educators as well as divulge their lived encounters as they promote numeracy skills of students in the midst of the pandemic. This study employs a descriptive approach. Results indicated that Elementary teachers have a variety of experiences upon promoting numeracy skills of students in light of the new educational landscape brought by the COVID-19 pandemic; these pedagogical practices need to be suitable in the new context in education.*

KEYWORDS: numeracy skills, remote learning, pedagogical practices, elementary teachers

INTRODUCTION

In this contemporary yet ever changing world, various pedagogy bloom in grace while some temporarily shriveled and reach its withering condition due to the sudden transition of education modalities brought by the COVID-19 pandemic (OECD, 2020; Bagood, 2020). While educators of all grades and contexts rethink their roles in light of the pandemic's overall crisis, the issue that is tantamount to knowing what pedagogies still blossom is the unknown imprint that emerges in describing how teachers' way of teaching and their thriving passion coexist with the present day situation as they promote numeracy skills in the new normal education. The education industry, notably educators, are being persuaded by the health crisis to reinvent, reconfigure, and adapt their teaching practices in order to meet the demands of the learners in the 'new normal' set-up. Suryaman et al., (2020), investigated how teachers' educational practices have altered as a result of the new normal situation during the pandemic, where learning took place at home. Kapasia et al., (2020), examined how the pandemic had a continuous impact on students' learning performance and learning experience. These difficulties according to White (2021), have an impact on teachers' ability to adapt and dedicate themselves to respond successfully to the new normal way of education while promoting numeracy skills among students.

For the most part, Bakker and Wagner (2020), revealed that considering the present educational conditions, challenges are prevalent and apparent to the school context, particularly educators who prioritize efforts in the crisis to find the righteous path and wonder how to assess what is

the best strategy in this unfamiliar situation. However, on the verge of a new awakening interest, integrating the best possible pedagogical practices in promoting numeracy skills becomes crucial as numerous learners foster negative perspectives about mathematics during their elementary years (Leroy & Bressoux, 2016). As a result, the emerging problem in promoting numeracy skills in the midst of pandemic through any pedagogical practices now becomes an area of concern in the society.

Issues concerning the quality instruction are enhanced, as we are in the midst a COVID-19 pandemic particularly for educators. In view of that, understanding the setting of this new typical schooling is important to the ongoing difficulties and encounters that educators are dealing with (Dayagbil et al., 2021). According to a research by Palaoag et al. (2020), in the Philippines, the paradigm changes from conventional to new normal education has created issues for some schools in Cordillera, where the readiness of stakeholders, such as teachers and students, is not prioritized. Similarly, Basilan and Gonzalvo (2021) found that in the SDO of Batangas Province, teaching methodologies are important determinants in educational performance, whether it's in traditional, modular, or online modes. As a result, teachers choose carefully appropriate strategies and became adaptable or flexible in terms of handling education in all modalities to elementary learners in Mathematics to provide a good quality education and avoiding educational difficulties.

Furthermore, relevant educational circumstances arise locally, in Region XI notably in Digos City, during COVID-19 with this new normal way of instruction. The effectiveness of Strategic Intervention Material (SIM) in the successful accomplishment of competencies and literacies in Mathematics was explored in one study and revealed that learners had low academic performances in the field of mathematics (Dumigsi & Cabrella, 2019).

This study is deeply anchored with the Father of Pedagogy - Johann Friedrich Herbart's Pedagogical Theory particularly with its Contemporary Pedagogic Theory. It assists in explaining the relationship between the new learning environment's conditions and an individual's past educational experience, as well as their cultural and social background, in terms of supporting or inhibiting learning (Festinger, 1962).

Research Questions

This paper aimed to describe the pedagogical practices as well as the lived experiences of elementary teachers in promoting numeracy skills in the new normal education. Specifically, addressed to this study are the following questions:

1. What are the lived experiences of elementary teachers in the promotion of numeracy skills in the new normal setting?
2. What are the barriers observed by elementary teachers in promoting numeracy skills in the new normal setting?
3. What are the pedagogical practices employed by elementary teachers in promoting numeracy skills in the new norm in education?

This study provides a detailed description of how teachers promote numeracy skills and adapt to the COVID-19 situation. It will benefit school administrators, staff, mathematics instructors, educators, parents, and learners. It will provide ideas on how to respond to educational challenges brought by the pandemic, particularly in teaching mathematics. This study will be useful for future researchers in gathering relevant data.

RESEARCH METHODOLOGY

Participants

Participated by elementary school teachers as informants of the study, a purposive sampling as a non-probability sampling method was done ensuring no bias data consolidation. A purposive sampling approach was utilized to obtain cases deemed to be robust in data with the aim of saturating the findings (Lambert, 2012). Since qualitative studies require a minimum sample size of at least 10 to reach data analysis (Braun & Clarke, 2016; Mason, 2010), a sample size of ten was chosen sufficient for qualitative analysis in this study. The researchers selected ten participants from different public schools in Digos City, Davao del Sur, who met specific criteria. These criteria included being a legal age teacher of any gender, having several years of teaching experience, currently teaching during the pandemic, and preferably teaching mathematics. The participants were willing to be interviewed by the researchers. Four participants were selected from Dawis Elementary School, four from Pedro Basalan Elementary School, and two from Isaac Abalayan Elementary School. The researchers conducted virtual in-depth interviews with these ten participants. The goal was to ensure a diverse range of experiences and data from different public schools in the area.

Instruments

The researchers followed a validation process for the interview guide questions used in the in-depth interviews. They obtained necessary documents and letters from the RPC, Dean's office, Program Head, and school principals. The validation process included instrument validation and validation of interview guide questions. The researchers formulated the interview guide questions and submitted them for validation. After corrections and revisions, the questions were developed with adequate reliability and validity. Validation sheets were given to the researchers indicating that the questions and interview guide were authenticated and related to the study's objectives. The recorded conversations and forms were kept confidential.

Design and Procedure

This study utilized a qualitative methodology with an elucidating way to deal with examining educators' educational methodologies in promoting numeracy abilities during the COVID-19 pandemic. Expressive way to deal with qualitative research intends to give thorough rundown of explicit encounters experienced by people or gatherings of people (Nelson, 2017). IDI approach as a designed to stimulate profundity on the area of interest was also employed in this study. The recorded interviews were then translated and submitted to the research participants for approval before data analysis and interpretation. The Colaizzi Data Analysis Approach was used, which involved seven steps to identify key remarks, produce themes based on multiple statements, and create a comprehensive analysis of elementary school teachers' lived

experiences (Morrow, Rodriguez & King, 2015). The researchers made sure to follow the process thoroughly and confirmed the description provided by the research participants. Any new or relevant data gained via participant validation was added to achieve congruence with elementary mathematics instructors' lived experience.

The study followed ethical guidelines set by the University of Mindanao Ethics Committee. The researchers obtained consent from educators and administrators, selected appropriate schools and participants, ensured anonymity, and protected data confidentiality. Hence, the study adhered to citation guidelines, avoided conflicts of interest, and was checked for errors using Grammarly and Turnitin. In addition, the researchers collaborated with their adviser and fulfilled their responsibilities in conducting the study, analyzing data, and interpreting results.

RESULTS AND DISCUSSION

Experiences of Elementary Teachers in Promoting Numeracy Skills in the New Normal Setting

Encountering Difficulty and Challenge. In the thought of the present new normal method of schooling, challenges are common, explicitly in the field of Mathematics instructors, especially in primary levels where most teachers perceived their occupation as challenging (Capacio et al., 2021).

(P1) teaching mathematics for me in the times of pandemic is very challenging given nga walay face to face interaction. (Teaching mathematics for me in the times of pandemic is very challenging and tasking, given that we don't have any face to face interaction)

(P7) very challenging sya sa part nako as teacher nu kay wala may face to face nga nahitabo. (very challenging on my part as a teacher now, because there is no face to face interaction.)

(P8) ang pagtudlo nako sa math tunga tunga sa pandemya is naglisod since nabag-uhan ta sa atuang sitwasyon. (Teaching math in the middle of the pandemic is difficult since the situation is somehow new to us.)

Confusion on students' academic performance. This new typical setting in teaching are by and large done without a teacher or facilitator near each student, and teachers might get confused on how their students could progress through the course (Dargo & Dimas, 2021).

(P3) one challenge is when we experience confusion jud wherein learning modules or sheets were returned unanswered wherein nagpagamay sa grade sa mga bata. (One challenge is when learning modules or sheets were returned unanswered answers which in return decrease students' academic average.)

(P7) Confuse ko kung sila ba gyuy nag answer. Makapangutana jud ka nga hala oy ang bata pagyud kahay nag answer ani nu or ge kopya ras mga site sa online. Ma confuse gyud ko sa ilaha academic performance. (I'm confused if they really answered. You can ask if the child is really answering or just copying answers from online sites. I am really confused on their academic performance.)

Extra Workload. Elementary Mathematics teachers have more responsibility than what they have before when there is face to face class. As indicated by Carmignola and Hagenauer (2021),

in their review on educator's taking off responsibilities, many instructors went about an additional multi day's responsibilities every week during the pandemic just like with what our study revealed.

(P5) There are lots of efforts to do in order to survive. It is really an extra workload. (There are lots of efforts to do in order to survive. It is really an extra workload.)

(P6) Lisud sya sa mga teachers' kay doble ang trabaho kailangan napod namo e evaluate ilaha learning sa kadaghang mga modules og tasks. (It is difficult for teachers because it creates an extra workload for. We also need to evaluate their learning out from their modules and tasks.)

Influencing Positivity. As indicated by Dayagbil et al., (2021) during these difficult times, these educators' diligence, energy, dynamic attitude, enthusiasm, and responsibility have turned into a wellspring of motivation for other people, for the sole purpose of providing quality education for students.

(P4) Maghuna huna nalang gyud og positivity and aktibo nga panghuna huna nga mo consider sa mga bata. (I am just having positivity and active thinking in considering children)

(P9) Positive and Active Mind-setting lang gyud ay kay for me tanan mang babag aning new normal sa edukasyon ilabi na sa pag promote og numeracy skills ma aksyunan man (Positive and Active Mind-setting is the only thing because for me I believe that all the obstacles to our new normal in education, especially challenges in promoting numeracy skills can be acted upon.)

Collaboration and Stronger Communication with Parents. Because of the conditions where the educators are far off with their students, it is the obligation of the guardians to give more assistance and help to their child's schooling. With this way, educators ought to lay out solid communication and cooperation with guardians to give better learning on students (Guan & Benavides, 2021).

(P3) I am constantly communicating the parents via messenger, call or text. (I am constantly communicating the parents via messenger, call or text.)

(P4) Constant communication with parents gyud kay wala man poy face to face interaction sa students, so by communicating with their parents ma assess nako kung asa nagkulang ang mga bata, asa sila need og remedial, unsa pa ang mga kinahanglan nilang buhaton. (Constant communication with parents because there is no face to face interaction with students, so by communicating with their parents I can assess where the children are lacking, where they need remedial, what else they need to do.)

Barriers Observed Barriers by Elementary Teachers in Promoting Numeracy Skills in the New Normal Setting

Limited Teaching Strategies Utilized. Before the COVID-19 pandemic struck the world, elementary math educators utilized any technique and procedure they could use to pass information on to their learners. It is to be taken in thought that each student is unique and has different learning capacities which is the reason it is a lot harder for educators to lead their

classes in the new typical arrangement since there are just restricted ways of giving quality training to elementary students (Mbiydenyuy, 2020).

(P6) *Daghan og mga barriers. So lisud kaayu nga ingun ani nga modality kay limit ang interaction.* (So many barriers. So it is very difficult having this kind of modality because the interaction is limited as well as our strategies in teaching.)

(P7) *Wala may face to face nga nahitabo, unya dili namo ma tudlo ang tibook process. Medyo ma limit kung бага ang strategy.* (There is no face to face interaction, and then we can't teach the whole process. The strategy is somewhat limited.)

Difficulty in Assessment. As indicated by Khalaf (2018), assessing students is an imperative piece of the teaching and learning process but because of changes, it became difficult to do so. Participants of our study said that;

(P7) *Sa karon nga new normal especially sa modular dili jud makatarong assess sa ilaha.* (In the current new normal especially in modular, it's difficult to assess.)

(P9) *Lisud mag follow-up sa ilaha, lisud ma explainan, lisud ang pag assess, lisud mahatagan example or ma check kung nakasabot ba sila or wala kay tungod man gud nga dili ta maka face to face sa mga bata.* (it's hard to follow up with them, it's hard to assess, it's hard to explain, give examples or check if they understand or not because we don't have face to face interaction.)

Parents' Insufficient Knowledge and Guidance. During this time of the pandemic, guardians fill in as the teachers' instrument in directing the students. Many guardians guide and support their children during their learning process, but the degree and level of help changes significantly (Pokhrel & Chettri, 2021).

(P5) *There are also parents who were busy with their works that's why sometimes they cannot get their child.* (There are also parents who were busy with their works that's why sometimes they cannot get their child.)

(P7) *Kani laging ang ubang mga ginikanan ba mag reklamo kay dili daw katarung tudlo sa ilaha mga bata kay tungod pod sa trabaho. Ang uban di pod kabalo unsa ang lesson.* (There are also other parents who complain as they cannot teach with their children because it's also because of work. Some parents as well don't know what the lesson is all about.)

Lack of Gadgets and Issues on Internet Connectivity. As indicated in the study conducted by Garcia, Weiss, & Welshan (2020), the lack of internet connectivity and limited digital resources have obstructed many school areas' capacities to adjust to the progressions which the educators and the learners are encountering.

(P4) *Ang challenge is mag send mig powerpoint then dili pod ma abrihan dili ma open because of the internet connection and the insufficient storage sa cellphone sa ilaha parents. Naa juy ubay ubay nga dili maka open sa mga study materials kay syempre because of lack of gadget and internet connectivity. Makababag jud sya sa learning kun wala ni.* (The challenge is whenever I send them lesson on PowerPoint then it can't be opened because of the internet connection and the insufficient storage of the cell phone of their parents. There are a few who can't open the study materials of course because of lack of gadgets. It can really impede learning whenever these are lacking.)

Issues in Communication. As indicated by Morin (2020), in a crisis like the COVID-19 pandemic, productive regulation techniques require further improved communication, straightforwardness, and trust. But, in the event that trouble emerges while communicating with parents and students, teacher's teaching delivery is somehow compromised.

(P7) Maglisud kog communicate sa ilaha. Mao lage dili jud tanan macommunicate nako kay pipila lang pod ang adunay android cellphone. Then isa pod ang data connection kay hinay ang signal then kalas pod og kwarta matod ba sa mga parents. (Not everyone can be communicated because only a few have android phones. Then another is the data connection because the signal is slow then it's expensive that's why I have difficulty communicating with them.)

Pedagogical Practices Employed by Elementary Teachers in Promoting Numeracy Skills in the New Norm in Education

Collaborative. The COVID-19 flare-up has been viewed as an opportunity to bring a new and distinct way of learning through any instructional method being employed by educators. One teaching strategy being practice by educators is through Collaborating with students through virtual means (Cabero, Romero, and Palacios, 2020).

(P8) I practiced coordinated synchronous activity like together sa akua students magdungan mi answer sa mga math problems og equations nga ilaha pong gina share kung unsa ilaha answer, nganung lahi silag answer sa uban, ana. With this, makita jud nako nga naay learning ang bata pinaagi ana then Makita jud nako nga ang bata kay interested. (I practice coordinated synchronous activity wherein together with my students we answer math problems and equations like they also share their answers, why their answers are different from the others. With these, I can see that the child has learning through that, and then I can see that the child is interested.)

Pedagogy of Care. The many known and obscure results of the pandemic have created a natural emergency as well as a social and mental emergency too. As one of the best worldwide crisis in recent human history, the pandemic has meaningfully altered the manner in which we see and decipher the world as far as we might be concerned. The field of education navigate to go through many changes because of the pandemic. It is vital to keep up with teaching pedagogy which could feel students that they are not abandoned, embracing child care and propelling them to partake in remote learning (Hauseman, 2020).

(P3) I give time and effort on them that will surely contribute sa motivation sa bata nga mag kat-on aron para nga mas ma develop pa nila ang ilahang skills in numeracy. (I give time and effort on them that will surely contribute to the motivation of the child to learn so that they can further develop their skills in numeracy.)

(P5) I always motivate them to do the activity kay syempre kapoyan napod baya sila atleast man lang makabalo sila nga care pod ko sa ilaha. (At the same time motivation, I always motivate them to do the activity because of course they are tired. This is for them to atleast realize that I care for them.)

Gamification. The continuous pandemic brought about by COVID-19 has upheld a temporary closure of some educative institutions, all things considered, including any levels in education, and has constrained instructors and establishments to adjust showing techniques in a rushed manner (Nieto & Roldan, 2021).

(P4) I also utilize Kahoot and other applications kung diin didtu ko naga padula dula, bale utilizing games kumbaga para lang gyud mas ma strengthen ilaha interest then dili ma bored which I find very effective jud nga maka pa promote sa ilaha numeracy skills. (I also utilize Kahoot and other applications wherein I integrate games to strengthen their interests and not become bored with the topic. With this kind of strategy, I really find it effective in promoting their numeracy skills.)

(P6) Para interactive and lively ang klase there are apps and games nga gina present nako sa bata para dili ma bored ang mga bata nga mag sge nalang modules. And that effective sya kay nakita nako sa results sa performance test sa mga bata. Effective sya kay ne increase ilaha grades then nakuha nila ang tama nga answer, og dali lang naka answer. (For the class to be interactive and lively there are apps and games that I present to the students so that the children will not be bored through online gamification. Which I found it effective because I've seen in the results of the children's performance test. It is also effective because they increase their grades then they get the right answer, and they can answer easily)

Representation and Abstract. As indicated by Pape and Tchoshanov (2001), different portrayals, including hands-on and visual representation, are critical to the advancement of students' numerical and mathematical reasoning. Excellent guidance in mathematical tasks should provide active or concrete representation and abstract ones to help students in gaining numeracy skills and mathematical concepts.

(P2) I have applied CRA Approach kung diin I found out nga epektibo jud sya base on the result sa akong mga students so far where in which I found out effective base on the results of students so far where most of them have passed with all the given test assessments.

Reward System. The task is incredibly complex due to the numerous variables that must be considered. However, the integration of a reinforcement and reward system into the teaching technique had a positive impact on student learning since then (Shawky & Badawi, 2018).

(P10) Pag maghatag kog activities labi na sa math kung ma perform nila og tama ginahatagan nakog rewards which I find it effective kay excited sila mopasa, excited sila mo answer, og mas willing sila mag study pa. (When I give activities especially in math if they perform correctly I give rewards which I find it effective as they are excited to submit their modules, as well as they are excited to answer on their own, and study further.)

Guided Practice. In this new normal approach to teaching, educators are encouraged to embrace academic pedagogical practices that are appropriate in the current settings and variety of students concerning their status, learning interest, and learning profile through guided practice (Guan & Benavides, 2021).

(P5) Guiding them with all the directions specifically ako una naga demonstrate sa task kung unsa pagkuha sa answer problem solving, mga steps. Mao man gud sya ang mas convenient og mahaum sa kani nga bag-ong normal sa pageskwela. (Guiding them with all the directions. Specifically I demonstrate first on how to get the answer from the problem solving task, as well as the steps on how to come up with the answer. For me, it is much more convenient and suitable for this new normal in education.)

Alternative Means to Amplify Learning (educational videos). Even before, video discussions furnish teacher's particularly students with the chances to highlight connection between numerical thoughts that arise which then add to their learning (Stein et al., 2008).

(P1) Naa mi group chat then didtu nako gina send ang mga lecture videos nga quality assured then gigamit nako sya sa pagtudlo. (We have a group chat where I send quality assured lecture videos which I used as well during discussion).

(P5) Ang akoo pag promote is through ready-made discussions gikan sa tv og youtube nga akoo pong gina forward sa mga bata sa amoo gc. In that way at least man lang naa silay ma view or ma visualize nga mga concept sa mathematics. (My way of promoting numeracy skills is through ready-made discussions from television and YouTube that I forward to the children like in our group chat.

(P9) Sa akoo nga case kay ang mga students could watch sa TV done by DepEd. So I encourage them to watch first the video then proceed sila to answer sa ilaha activity. Also, ginahatagan nako silag video link para ma download nila then ma studyhan nila ang lesson. (In my case students watch TV done by DepEd. So I encourage them to watch the video first then they proceed to answer their activity. Also, I give them a video link so they can download then they can study the lesson.)

Summary

The study was conducted in order to describe the pedagogical practices of elementary teachers, more so their lived experiences in promoting numeracy skills among students in the selected elementary schools in Digos City, Davao del Sur. Based on the forenamed findings, the researchers concluded that; Despite the COVID-19 pandemic, elementary teachers faced challenges in providing quality instruction and promoting numeracy skills to students. These challenges included confusion about academic performance, increased workloads, and limited teaching strategies and assessments. However, elementary teachers continued to work hard and build stronger collaboration with parents and the school community. Additionally, there were roadblocks such as insufficient parental guidance, lack of gadgets, and connectivity issues that hindered the promotion of numeracy skills. To address these challenges, a diversity of pedagogical practices were employed, including collaborative approaches, gamification, and alternative means of learning such as educational videos.

Implications

After intensive investigation, these recommendations were formulated by the researchers of this study. Key triggers encouraged teachers to find suitable strategies to address the concerns of the classroom. In this way, it may mold teachers' motivation levels as these challenges can evoke interest and inspiration for better performance. Hence, a solid finding can lead to

innovation in areas of concern, such as teaching strategies and assessments. Further, the perspectives given elucidate matters of high importance, such as parental involvement and awareness of the teaching process, as well as issues in communication. As such, an administration whose policy can be revised and improved based on the notions at hand can alleviate and address the needs of our clients and stakeholders. Finally, as posited by the aggregated perspectives of participants, teachers with multiple strategies employed are an advantage during the new norm in education. With this, it is highly encouraged for teachers to set a paradigm of learning experiences for a learner as suitable to these required competencies

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