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Back to the Basic: Numeracy Intervention Strategies in the Post Pandemic Year 2022

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Abstract:- This study focused on the techniques that educators employed to raise students' numeracy proficiency in elementary school mathematics after the epidemic. Eight math teachers from the Daliaon District participated in the study. As a way to collect data, the participants were chosen at random for in-depth interviews with guiding questions. After applying thematic content analysis, it was discovered that teachers had implemented explicit instruction and math drills as intervention measures. But the study also found that obstacles such as lack of resources and time constraints prevented teachers from putting intervention ideas into practice. These limitations made it more difficult for teachers to build students' skills in a thorough and interesting way. The study's insights were that offering teaching resources and placing a strong emphasis on time-bound sessions can help teachers carry out intervention.

Keywords*: Back to Basic, Numeracy Intervention, Strategies, Post Pandemic*

I. INTRODUCTION

As education switched to in-person classroom environments, the impact of the pandemic on students' numeracy skills became evident. It is clear that students' numeracy skills are lacking. Children fell behind in math more frequently than in reading, with a 5–9% rise in children falling two or more grade levels behind, according to Sawchuk & Sparks' (2020) research. Although parental guidance can be even more crucial for students' development, parents are usually unprepared to help their kids in mathematics.

In a similar vein, UNICEF (2022) emphasizes that children no longer possess fundamental literacy and numeracy abilities. Millions of kids throughout the world have lost out on substantial academic learning that they would have received in a classroom due to disruptions to education. Consequently, returning to the basics of numeracy and prioritizing the development of pupils' fundamental skills in mathematical operations is the best course of action for educators.

The learning loss in numeracy also prompt the teachers to initiate intervention strategies to help the learners especially those who struggle learning mathematics. The struggle of young learners in math has been attributed to many multiple factors like dyscalculia, a learning difficulty that causes students to struggle with formulas, shapes, and number-related concepts, math anxiety wherein students develop a debilitate feelings of fear and failure with math that impedes their ability to perform. The poor mathematics foundation and the use of memorization ahead of understanding are also attributed to the reasons why learners struggle in mathematics. However, the students' difficulty of learning mathematics worsen as the humanity is hit by the covid-19 pandemic.

Records indicated that one of the academic difficulties faced by students even before the pandemic was numeracy. According to Mazana, Montero, and Casmir (2020), several reasons, including a lack of qualified teachers and a dearth of instructional aids and materials, are partly responsible for the high failure rates of mathematics in their nation. For the 2022 assessment, Bautista (2023) states that 7,193 Filipino students from 188 schools scored an average of 355 points in mathematics, still way below the OECD average of 472.

Teachers use math intervention strategies, also known as numeracy intervention strategies, to address or enhance their students' or learners' mathematical competency. In contrast to a math intervention program that exists outside of the usual classroom activities, the intervention strategies are integrated into the curriculum.

According to Samuels (2011), interventions should be tailored to the specific needs of each student. Teachers' intervention techniques in elementary mathematics are more focused on addressing the competencies that are least mastered than they are on the efficacy of lesson delivery.

In the conduct of interventions, teachers assess the needs of learners in mathematics during classroom engagement and develop intervention strategies to help learners who have difficulties in mathematics. There are different intervention strategies that are recommended to help struggling learners in mathematics.

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In order to support students struggling with mathematics, teachers perform interventions in which they evaluate the needs of students during instruction. According to King and Parker (2001), strategies including employing visual cues, reading word problems, constructing and solving equations, examining tactile models, developing auditory patterns, exchanging strategies, and journal writing are methods that work well together. There is a greater chance that more students will grasp the new idea or skill being taught when activities allow them to use a range of learning methods.

Now that education opens to in-person classroom instruction, dealing with the learning loss caused by the pandemic presents a difficulty for the teachers. In order for learners to master the fundamentals of mathematics, teachers must not only revisit the core curriculum but also implement math interventions.

In conclusion, this inquiry navigated on the phenomenological experiences of mathematics teachers on their intervention strategies. Studies found learning loss in numeracy during the pandemic. In the local context, the teachers observed the lack of basic knowledge and skills in numeracy among students. As public schools opened for in person classroom instructions in the post pandemic, the challenge now of the teachers was to cope with the learning loss in numeracy through interventions. Hence, this study unfolds the intervention strategies of mathematics teachers in the post pandemic.

II. METHOD

This study employed a qualitative phenomenological research design. According to Flood (2010) as cited in Tomaszewski, et.al (2020), phenomenological approach to qualitative research focuses on the core elements of a lived experience, or phenomenon, that can be observed or felt by individuals with diverse points of view.

The informants in qualitative phenomenology discussed their observations and experiences with a phenomenon that was being studied. It is significant to remember that the researcher may use focus groups or in-depth interviews to acquire information during the information-gathering process. Based on their personal experiences, the participants provide their subjective and objective opinions. The common experiences and concepts that participants bring up often should be the researchers' main areas of concentration while assessing the information acquired. The categorization of significant statements of the participants as reflected in the verbal transcriptions forms is an important part of data analysis. This process requires the researcher’s ability to interpret and analyze the data with adequacy.

Eight (8) teacher participants in the phenomenological inquiry were selected at random to be participants. These were elementary math teachers with three years of classroom experience. Simple Random Sampling according to Singh (2003) as cited in Noor et al. (2022) is the simplest and most common method of selecting a sample, in which the sample is selected unit by unit, with equal probability of selection for each unit at each draw.

In this study, the ethical principles were followed such as respect for persons, beneficence, justice, consent and confidentiality. As the researcher, it is my responsibility to produce reliable research findings. In essence, my job was to use the research questions and stimulating phrases to conduct the interviews and discussions. I was the one who conducted the analysis and transcribing of the information data in this study. By creating categories, codes, and themes from the spoken transcriptions, thematic analysis was used. The themes were carefully examined, shedding light on the study's investigation.

As the researcher, I extensively unfolded the phenomenon based on the lived-experiences of the participants. Comprehensive discussions, overlaying and connecting the findings, creating meaning and color to the phenomenological inquiry were the main process. Moreover, with participant in-depth interviews, this phenomenological study obtained the participants' consent prior to the interview. I also made sure that the participants understood that they could ask questions to get clarification on any aspect of the study. I secured their permission to record the conversation. They were assured that all information would be handled in the strictest of confidence and that it would only be used for academic purposes.

Throughout the process, I thoroughly checked the accuracy of the information data. Comparisons between observations and interviews, information gleaned from questionnaires and participant sharing during interviews, and comparisons between participant viewpoints were used to evaluate the consistency. The participants reviewed the transcription of every interview session. According to Patton (2002), by having participants confirm the findings and help ensure that each summary of the interview session was accurate and that the researcher was asking the right questions, researchers can learn a great deal about the accuracy, completeness, fairness, and validity of their data analysis.

In conclusion, the qualitative phenomenology is employed in this study. The rigor and process of gathering data from the participants was strictly followed. The procedure of analyzing and coding the transcriptions was employed which resulted to the emergence of themes that described findings of the study.

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III. RESULTS AND DISCUSSIONS

Based from the information gathered, the following were the themes on intervention strategies of teachers in mathematics.

- *Explicit Instruction.*

This emerges as one of the intervention strategies of teacher in mathematics. On consonance, Explicit instruction is systematic, straightforward, engaging, and success-oriented, according to Archer and Hughes (2023), and research supports its ability to raise student achievement.

- *Math Drills*

Giving the students mathematics activities like drills is another intervention employed by the teachers. According to Singh (2023), the drill and practice teaching method is a style of instruction that emphasizes practicing particular skills or knowledge repeatedly. It entails giving students specific exercises, problems or assignments that call on them to apply and reinforce what they have learned.

The themes show that the intervention strategies in mathematics were employed to bridge the learning gap brought about by the pandemic. This strategy kindle students' interest and develop proficiency of students on the basic of numeracy.

Consequently, The teacher-participants perceived hindrances as barriers that prevent students to enhance their numeracy skills in the classroom. On the challenges of teachers on intervention strategy in mathematics, the following are the themes of the study:

- *Time Constraints*

Although there is plenty to learn about helping pupils improve their numeracy abilities, teachers have a time constraint. The teachers in Leong and Chick's (2011) study echoed the same concern, saying that a common complaint among math teachers is that there isn't enough time. The majority of educators emphasized the issue of inadequate time. They believed that there was "too much to teach in too short a time" in particular.

- *Insufficient Resources.*

The lack of instructional resources in teaching mathematics is truly a challenge to teachers. Similarly, Maffea (2020) asserted that insufficient resources were provided to classrooms worldwide. Instructors have to teach a variety of disciplines to their pupils without having the necessary supplies in their classrooms.

The findings showed that teachers time constraints or not enough time in teaching and making interventions hampers them to develop students' ability in an easy and interesting way. Students who are experiencing this kind of problem may not understand the subject matter, leading to lower grades and test scores. They may also lose interest in learning, become disengaged, and eventually drop out of school. However, insufficient resources for teachers is a foremost problem in the classroom. It limits the ability of a student to achieve various learning and extra curricula activities. Secondly, an insufficient material in teaching has a negative impact on a teachers' job satisfaction, which undermines their motivation to teach.

Finally, this study had developed insights that may help enrich the effort of the teachers in the intervention strategies in mathematics for the students. The insights also serve as propositions which are rooted on the strategies and challenges of teacher-participants in enhancing numeracy skills of the learners. This study has drawn the following insights: Emphasize time-bounded lesson and Provision for instructional materials. The insights are focused on obtaining support in the intervention strategies of teachers in mathematics for the students in the classroom.

IV. CONCLUSION

In conclusion, intervention strategies of teachers in mathematics such as Math drills and explicit instruction are literature based and they are indeed effective strategies to improve students' mathematical ability. The challenges of time constraints and insufficient resources impede the objective and the effort of teachers in math intervention. Hence, to bridge the gaps in math intervention, challenges must be addressed and scientifically proven strategies must be pursued.

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