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From Zero to Hero: Global Learning Packets with Parental Involvement at Homes on the Non-Numerates' Numeracy Level

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ABSTRACT-This study sought to determine the effectiveness of Global Learning Packets with parental involvement at homes on thirty-one non-numerates learners' numeracy level specifically on multiplication and division during the pandemic times. The intervention was made possible through the collaboration between the PhD students at the University of West Georgia, USA as the instructional designers and the PhD student of West Visayas State University in the Philippines as the instructional implementer which lasted for six weeks. The main sources of data were the result of a 20-item Regional Unified Numeracy Test (RUNT) administered before and after the intervention, incidental interviews to parents during retrieval and distribution of self-learning modules, and parents' remarks while learning at home and teachers' observations during home visitations. After careful analysis, results revealed that the Global Learning Packets with parental involvement at home was effective in improving the numeracy level of the learners with a big shift from "low" to "high". Further analysis revealed that there is a significant difference in the numeracy level of the learners before and after exposure to Global Learning Packets affirming its effectiveness, thus the phrase "zero to hero". It is therefore recommended that (1) non-numerate learners' should be taught frequently using the global learning packets to improve the learners' numeracy level, (2) constant collaboration and communication between the teachers and parents as learning facilitators must be strengthened so that learners develop their greatest potentials, and (3) continuous innovations in the curriculum, specifically in instruction is highly encouraged to improve the educational system which will hopefully lift our global ranking.

Keywords: global learning packets, non-numerates, numeracy level, parental involvement

I. INTRODUCTION

This project was designed to engage elementary school learners in the Philippines to develop global learning skills that can be used in future schoolwork and life situations. Students used the skills with the help of their parents or the more knowledgeable other at home to complete math activities. The goal of this project was to give students the opportunity to develop global learning skills, such as connecting, personal responsibility, cooperation, communication, and research and eventually improve their numeracy skills. The Philippines group member was Mark John A. Belleza. He was the implementer of the instructional design, and he teaches Information and Communications Technology (ICT) in the sixth graders, and Mathematics in the fourth, fifth, and sixth grades. The United States group members of this project were Hunter Gore, Madison LeBlanc Magalhaes, and Tanya Walker. Hunter Gore is a fourth-grade teacher in Midland, GA. He focuses on teaching math and science. Madison LeBlanc Magalhaes is a fourth-grade teacher in Whitesburg, GA and she focuses on teaching math while Tanya Walker is a computer lab teacher in Mableton, GA. She focuses on teaching computer skills and internet safety.

The schools identified as recipients was set in Iloilo, Philippines. Jibolo Elementary School is located farther northwest making it around an hour outside of the city center and is in more of a rural area. It caters to the school populace of Barangay Jibolo and Barangay Matag-ub, Janiuay, Iloilo in the Philippines. The school also caters the migrant learners coming from far-flung barangays of Calinog and Lambunao, Iloilo. Hence, the school is the second home to the most diverse learners- mentally, socially, emotionally, and economically.

The occurrence of COVID - 19 pandemic has created a profound impact on basic education. This pandemic is causing more than 1.6 billion children and youth to be out of school in 161 countries which is close to 80% of the world's enrolled learners [1]. In addition to the problem is the reality that the percentage of children who cannot read and comprehend at

age 10–stood at 53% whose parents belong to low and middle-income countries even before the outbreak started [2]. The status of these children will continue to worsen if teachers will not act realistically on how to help them [1] especially those that are already identified as non-readers and non-numerates.

The adoption of distance learning modality as emphasized by Pres. Rodrigo Roa Duterte and DepEd Secretary Leonor Magtolis Briones as an alternative way to continue education in the light of the COVID- public health emergency is well accepted and planned in all schools nationwide. In Jibolo Elementary School, Janiuay, Iloilo, Printed Modular Distance Learning (PMDL) is the chosen modality to continue the basic education as reflected on their School Learning Continuity Plan (SLCP). PMDL involves individualized instruction that allows learners to use Self Learning Modules (SLMs) in print format and other learning resources like learner's materials, textbooks, activity sheets, study guides, and other study materials [2]. However, one of the most challenging aspects of this modality is how to handle and facilitate learning at home especially those learners who need special attention in reading and numeracy. Even before this pandemic, the teacher-implementers have observed that learners reaching higher grades in elementary found difficulty in mathematics because they have not mastered the four fundamental operations.

Mathematics is a skill subject that pervades life at any age and in any circumstance thus, must be learned comprehensively and with much depth [3]. To have skills and knowledge in Mathematics, one should be learning numeracy skills, specifically in addition, subtraction, multiplication, and division. It involves using a range of mathematical skills and processes confidently to solve everyday life problems [4]. Numeracy is the key for learners to access and make sense of their world. Besides, [5] numeracy is the combination of mathematical knowledge, problem-solving, and communication skills required by all persons to function successfully within our technological world. Likewise, being numerate is having confidence and competence in being proficient with numbers and measures [6]. It goes beyond the mere knowledge of number facts and processes and the ability to perform arithmetic operations [4].

Further, Jibolo Elementary School statistics shows that 9.5% (31 out of 323 learners: three were Grade 6, five were Grade 5, six were Grade 4, nine were Grade 3, eight were Grades 2) of the total population of Jibolo Elementary School in the school year 2019-2020 did not master these four fundamental operations. They were not able to achieve the standard of 80% mastery level based on the posttest result in the Regional Unified Numeracy Test (RUNT) conducted in the 2nd week of February 2020. As observed, most of the learners have answered addition and subtraction, but many failed in multiplication and division. This low numeracy skill level of learners is one of the many reasons why they are retained in the grade level indicating that pupils did not learn fully in the traditional teaching methods employed by their teachers.

If face to face learning modality is a little bit deficient to fill in this problem, what will be the expected result when parents will act most of the time as teacher facilitator or para teacher at home? Given this situation, the teacher-implementers must make innovation to ensure that learning will be taking place, numeracy competency development will be ensured, and no child will be left behind even in this new normal.

The chosen participants were the identified Grade 2 to Grade six non-numerate learners. According to the Learners Enrolment Survey Form (LESF) which was filled in by learners' parents during the enrollment period, most students are receiving financial assistance from government programs such as the conditional cash transfer (CCT) program locally known as *Pantawid Pamilya Pilipino Program* or 4Ps, is a government program that provides conditional cash grants to the poorest of the poor in the Philippines. The program aims to break the cycle of poverty by keeping children aged 0-18 healthy and in school, so they can have a better future [7]. In addition, nearly half of the students do not have access to mobile devices and internet connections. These unique characteristics can make delivering educational content difficult for the mathematics teachers in both respondent schools.

Mathematics in the 6th grades begin with working on multiplying and dividing fractions and decimals. Same like with the lower grades, division and multiplication are prerequisite skills to be mastered by learners to proceed to the more complex lessons. Many of the students did not show proficiency on their RUNT tests. The Regional Unified Numeracy Test (RUNT) displayed that many students still struggled with basic multiplication and division facts. With this, the instructional design focused on basic multiplication and division problems in the hopes that these skills will improve before moving on to more rigorous content.

Thus, the Enhanced Learning Packets containing Self Learning Modules (SLMs) and worksheets aligned to the DepEd- Most Essential Learning Competencies (MELCs) from the Division of Iloilo which are written to address the general learners were enhanced using the instructional materials crafted by the American Partners. The exercises were specifically intended to enhance the identified least mastered numeracy skills of the non-numerate learners specifically on multiplication and division. In addition, the teacher-implementers involve the parents of the learners who are identified as non-numerates to collaboratively work with the teacher-implementers on how to become para-teacher or facilitator of their children in developing their numeracy skills and confidence. Furthermore, teachers also visited these learners to facilitate them in doing the activities since aside from numeracy, some have problems in literacy. As to the situation brought by the pandemic, teachers made sure that they are following safety health protocols set by the Department of Health and the IATF or Inter-Agency Task Force. Through these Global Learning Packets, learners were inspired and gained valuable numerical skills in the absence of a face-to-face direct teaching method during regular classes with the help of their parents at home.

Global learning cannot occur in one setting, it occurs sequentially [8]. As a result, the lessons were introduced to the learners where they need to participate in global learning that involves communicating and using their prior learning. Even though collaboration is difficult considering the

insufficient availability of technology to learners, it was decided to include connecting, communicating, and cooperating as a part of the global learning skills. Allowing opportunities for students to collaborate allows students to feel connected to their learning community even when working from a distance [9]. Even though learners do not all have access to technology, collaboration and research using technology is included to measure their creativity. The implementers provided written options that students can turn in to communicate with others. The Global Learning Experience consisted largely of enhancing problem solving skills of learners. These global learning skills prepared the learners to function effectively in a group [10]. Research shows that a combination of working independently and collaboratively benefits student learning [11]. The setup of this new learning experience allowed learners to work independently but communicate with others to discuss and solve problems collaboratively.

The teachers of the 21st century recognize that the use of appropriate tools is needed in teaching mathematics. These tools include manipulative objects, measuring devices, calculators and computers, Smartphones and tablets, PCs, and the Internet [3] However, the present situation hindered the learners from using these tools including Technology at school because of the absence of face-to-face classes. Technology is an essential tool for learning math in the 21st century, and all schools must ensure that all [3] learners have access to technology. Effective teachers maximize the potential of technology to develop students' understanding, stimulate interest, and increase their proficiency in mathematics. When technology is used strategically, it can provide access to mathematics for all students" [3].

The Global Learning Experience utilized the skills on connecting, personal responsibility, cooperation, communication, and research. Through observing games and researching games related to Mathematics, learners were able to connect interest, prior learning, and to research in solving problems using cards, dice, and other tools. With the help of parents, learners employed the use of cards, dice, and/or other manipulative tools to multiply and divide. Finally, the outcome of this project was for students to engage in global learning skills with the help of their parents at home.

This innovation is supported by several studies. The single biggest factor in children's educational success is their parents, with their attitudes to learning, to mathematics and to study in general formed in the context of the home [13]. Further, research has shown that parental involvement affects learners' achievement [13]. and that pupil's learning is maximized when strong educational partnerships between school, community, and home are developed [13].

This study is proven effective in filling up the gap on behalf of the teacher conducting a direct teaching in the face-to-face modality. This is not only beneficial to the teacher-implementers but also to other teachers who may opt to utilize these learning packets with parental involvement at home to increase the level of numeracy skills of learners specifically on multiplication and division.

II. METHODOLOGY AND DESIGN

The main objective of this project is to find the effectiveness of Global Learning Packets with Parental Involvement at homes on the level of numeracy skills of learners based on the pretest-posttest result of Regional Unified Numeracy Test (RUNT) and Global Learning Experience.

Specifically, it sought to answer the following questions:

1. What is the level of numeracy among non-numerate learners prior and after the intervention of Global Learning Packets with Parental Involvement at Homes?
2. Is there a significant difference in the level of numeracy among learners before and after utilizing Global Learning Packets with Parental Involvement at Homes?
3. How does the level of learners' numeracy skills improve through the Global Learning Packets with Parental Involvement at Homes?

Methodology

This global learning project employed the action research method in driving the gap in numeracy with the use of data collection method which is the RUNT, finding solution and intervention in closing the gap through the collaboration of American and West Visayas State University graduate school students, reflecting, and analyzing the implementers' experiences including the participants and their parents' responses. This action research also utilized a quantitative research design particularly one-group pretest-posttest design, which involves an experimental group only that is pretested, exposed to a treatment, then post tested [14]. The numeracy skill of learners was measured before and after the intervention using the Global Learning Packets with parental involvement at homes. To determine if there is a significant improvement in the numeracy skill of learners the pretest and posttest mean scores were compared and analyzed.

Participants

The participants of the study were the thirty-one identified Grade 2 to Grade 6 non-numerates of Jibolo Elementary School in the school year 2020-2021. They were described as non-numerates based on the adopted tool (RUNT). Learners were considered non-numerates if they did not answer 80% of the adapted tool correctly. These learners were enrolled and learning at home with the help of their parents because of the absence of face-to-face classes in schools. Purposive sampling best suits the technique of selecting the participants because it is the sampling technique to be used when the researcher uses his judgment in selecting a sample that he believes, based on prior information, will provide the data he needs [14].

Data Gathering Methods

The study employed the Regional Unified Numeracy Test (RUNT) tool in the pretest and posttest to assess the numeracy skills of learners. This tool was crafted by the Regional Education Program Supervisor in Mathematics, validated, pilot tested and distributed among schools in the region for utilization. RUNT measures the four fundamental operation

skills of learners specifically on addition, subtraction, multiplication, and division.

For this study, numeracy skills of learners were limited only to the scores in the pretest and posttest during the school year that focused on multiplication and division. Furthermore, the one group pretest-posttest design was used in this study. The paper and pencil pretest and posttest were administered to the participants. The pretest was given before the first day of intervention while the posttest was given after the administration of the intervention. A 20-item pretest and posttest RUNT test were given to the participants in finding the effectiveness of Global Learning Packets with Parental Involvement at Homes on the numeracy skills of learners. The numeracy skills of learners were determined through a 20-item RUNT test. The numeracy skills were based on the mean scores of the pupils. A five-point scale was used to describe the mean of the scores of the pupils. To wit, 17-20 (very high), 13-16 (high), 9-12 (average), 5-8 (low), and 0-4 (very low).

Data Analysis Plan

The numeracy skills of the learners were determined through a 20-item test of Regional Unified Numeracy Test (RUNT) which focuses on multiplication and division. The numeracy skills were based on the mean scores of the learners. 16 out of 20 or 80% must be the score of learners to be considered numerates.

The data gathered was subjected to the following statistical treatment using computerized processing which is the Statistical Package of the Social Sciences (SPSS) software version 23.

Mean. This is the weighted mean scores and the mean gain scores of certain variables. It is used to determine the average level of numeracy skills of the learners.

Standard deviation. This is used to determine the participants' homogeneity or heterogeneity of their level of numerical skills.

Wilcoxon Signed Ranks Test. This is used to determine the significance of the difference of the mean gain scores of the pretest and posttest of the learners who were exposed to the intervention. The level of significance was set at .05.

Furthermore, their scores in summative tests and performance tasks were also recorded and analyzed to support the recorded and analyzed quantitative data. The responses of parents through incidental interviews were also encoded and analyzed to further establish the analyzed results.

III. RESULTS AND DISCUSSIONS

Findings, Conclusion, and Recommendations

Working with the learners-at-risk, specifically those with numeracy problems is quite challenging but it will somehow let you discover novel methodologies that could somehow remediate the problem existing.

The main objective of this project is to find the effectiveness of Global Learning Packets with Parental Involvement at homes on the numeracy skills of learners based on the pretest-posttest result of Regional Unified Numeracy Test (RUNT).

Results

Table 1 shows the pretest and posttest numeracy skills of learners before and after they were exposed to the Global Learning Packets with Parental Involvement at Homes which obtained "Low" in pretest (M = 5.06 while pupils performed "High" during posttest (M = 16.26).

	SD	*Mean* (*n* = 31)	Description
Pretest	2.98	5.06	Low
Posttest	2.02	16.26	High

Note. Description is based on the following arbitrary scale. 17-20 (very high), 13-16 (high), 9-12 (average), 5-8 (low), and 0-4 (very low).

Table 1: Numeracy skills of learners prior and after the intervention of Global Learning Packets and Parental Involvement at Homes

Table 2 shows that posttest scores after intervention (M=16.26, SD=2.02) was statistically significantly higher than the pretest scores (M=5.06, SD=2.98), Z= -4.869, p<.001 which is less than the 0.05 level of significance.

	M	SD	Z	p
Pretest	5.06	2.98	−4.869	.000
Posttest	16.26	2.02		

Note. $p < 0.05$, significant

Table 2: The Wilcoxon Signed Rank Test result of the Significant Differences of the Pretest and Posttest Numeracy skills of learners before and after they were exposed to the Global Learning Packets with Parental Involvement at Homes

Numeracy skills are basic mathematical skills that include a range of abilities to understand and analyze numerical information and to make the right conclusions and decisions [15]. Being numerate means learners are encouraged to learn mathematics within the context of practical application and they are better able to build on the interconnectedness of the different types of knowledge they encounter in their daily lives [16].

Global learning packets improved the learners' level of numeracy skills as shown in the RUNT posttest. It was also observed that there is a leap in scores in summative tests and performance tasks as learners enjoyed the inclusion of game-based activities in the global learning packets. As mathematics teacher, I have observed and recorded an increase in score in my learner's summative tests in Mathematics.

"*Sang una, ang score ni Mike sa summative tests na tag 4 out of 25 lang, sbung nagtaas don. Kis a maka score na siya sang 19 out 25 okun kisa maka score siya sa iya performance task sang 41 out of 50. Mahapos abi sundon ang mga activities nga ginhatag kag ang direksyon may translation pa.*" -*Sir Manny*

Before, *Mike's* score in the summative test was 4 out of 25, now there is a notable increase. Sometimes he can get a score of 19 out of 25 and there is a time that he can get a score of 41 out of 50 on his performance task. It is easier to follow the

activities given since instructions are translated in Mother Tongue.

The increase was brought by the scaffolding activities in global learning packets which are contextualized and based on the level of learner's intellectual mathematical abilities. It was also recorded that some learners were not able to get a 75% passing score in summative tests but there is a rise in their scores compared to before without any intervention.

Involvement of parents is important to develop a learner's mathematical skills. As supported by [17], parents from diverse backgrounds, when given direction, can become more engaged with their children. And when parents are more engaged, children tend to do better. The global learning packets as the intervention tool to increase the level of numeracy skills of learners invited parents to be hands-on and secure the numeracy skills of their children when learning at homes. This leads the school to strengthen its relationship and collaborate with parents.

"*Nahaposan ako magtudlo sa akon bata kung paano mag multiply kag mag divide kay gin paagi sa hampang nga man-an ko parehas ka dominoe kag hampang ka baraha parehas karang lucky nine kag tong its." -Nanay Lita*

It is easy to teach my child how to multiply and divide numbers because games are used like card games such as dominoes and *lucky nine* and *tong-its* are familiar to me.

Mathematics is a well-established discipline whereas numeracy is necessarily interdisciplinary [16]. Thus, global learning packets as an intervention provide activities wherein learners could collaborate and communicate through inquiring their parents and friends in solving mathematical equations. Learners were able to relate and connect their real-life experiences at home or during play while solving the numerical equations. Lastly, learners were able to use manipulative tools including technology-based manipulatives such as calculators, laptops, and cellphones to accomplish the task written in the Global Learning Packets.

"Ginapa-isip ako kung pira kabilog ang amon nga pinggan kag kutsara sa balay. Nasadyahan gid ako sa hampang nga gabutay. Ginapagabot ko si nanay ka numero sa baraha halin sa alas asta king dayun gin multiply ko ang gingabot na sa nagabot ko nga baraha. Sadya magtuon pay!"-Angel

The activity required me to count the number of plates and spoons we have at home. I enjoyed the card game the most, wherein, I asked a family member to pick a card from Ace to King and multiply the number picked to the card I picked prior to it. I am happy to learn!

"Tungod ka Global Learning Packets, ginpahulam ako ni nanay ka ana nga cellphone kag ginpa search sa internet kung paano mag multiply kag mag divide. Naga chat man ako kay sir kung daw nabudlayan ako mag-intindi ka ana instructions."-Josh

The Global Learning Packets allowed me to borrow my mother's cell phone and search on the internet the correct way of multiplying and dividing numbers. I also chatted with our teacher if I cannot understand the instructions written on the activity sheets.

Summary of the Results

This global learning project sought to improve the level of Numeracy Skills of Learners through Global Learning Packets with Parental Involvement at homes.

Specifically, it sought to answers the following questions:

1. What is the level of numeracy among non-numerate learners prior and after the intervention of Global Learning Packets with Parental Involvement at Homes?
2. Is there a significant difference in the level of numeracy among learners before and after utilizing Global Learning Packets with Parental Involvement at Homes?
3. How does the level of learners' numeracy skills improve through the Global Learning Packets with Parental Involvement at Homes?

The following were the findings of this study:

1. The pretest results of the pupils before the intervention were "Low" (M = 5.06). After six sets of Global Learning Packets with Parental Involvement at Home as an intervention, the posttest result became "High" (M = 16.26). Learners' numerical skills specifically on Multiplication and Division were improved after the intervention was conducted.
2. The result of the Global Learning Experience further revealed that through the Global Learning Packets and Parental Involvement at Home significantly improved the Numeracy skills of learners.
3. The Global Learning Packets increased the level of learners' numeracy skills through the inclusion of game-based activities. The increase was brought by the scaffolding activities in global learning packets which are contextualized and based on the level of learner's intellectual mathematical abilities. The global learning packets invited parents to be hands-on and to be involved in improving the numeracy skills of their children when learning at home. Further, leads the school to corroborate relationships and collaborate with parents. In addition, as an intervention it provides activities wherein learners could work together and communicate through inquiring their parents and friends in solving mathematical equations, learners were able to relate and connect their real-life experiences at home and use technology and manipulative tools to accomplish the task in the activities.

IV. CONCLUSIONS

Learning Mathematics can be a challenge, but if we look at the bright side of it, Mathematics can be something that you want to embrace and never let go of. Several studies were conducted and these all gave light to where we should investigate our learners. Focusing on the early stages of development and learning would greatly have a great impact in the lives of the learner. It is also important to note that the interest of learners must be considered, and support should be present. This project gave us a deeper idea on the gaps and problems that our school faces today in terms of learning math, but through these activities, Math could become an easy

field, and all we need to do is to let our learners believe in themselves and think that success will never be attained without and handful of failures.

Game-based learning could awaken the interest of learners. Innovating novel activities for the learners, incorporating the skills needed in Mathematics could help the learners find their way out of difficulty. Developing these activities does not necessarily mean that we just must create our own, but we also need to visit other sources and be resourceful enough in doing research such as the games that we can find online. There are plenty of them, we just must carefully choose what will work well in our contexts.

A supportive learning environment could help learners discover their potential. Encouragement matched with guidance is indeed an effective tool in nurturing the skills of each learner. After all, the need for safety, love, and esteem should be addressed for a person to achieve or improve in a certain area. Same in our own classrooms, we should make our learners be motivated and actively participate in the process, and that is through a supportive education provided for them, the kind of education who never cease to encourage them to do better and guides them well in learning as well as in developing the skills and value to become the individuals that we expect them to be. There are endless opportunities to discover and let us let our learners develop and improve their creative minds. Constant collaboration and communication between teachers and parents are also essential for both sides to identify gaps to be filled to develop appropriate interventions for improvement.

Bringing innovations in the Curriculum could absolutely improve the process. Introducing novel ideas and innovations in teaching could impact learners profoundly since they will not only acquire the concepts being taught but they will also learn the skills needed, specifically problem solving and critical thinking skills among learners which are the twin goals of K-12 Mathematics Education. Globally, we can develop or even learn something from the existing practices of progressive countries. We could make use of these ideas as our guiding point and just contextualize in our own setting. Thus, we could present something new and could cater more of the diverse needs of our learners. We should start somewhere by recreating the usual into something different and effective.

V. RECOMMENDATIONS

Mathematics may be challenging and mind provoking, but it can turn into something very special, and very dear to your heart if you just try and try, not just once but several times, learning is fun and so is Math. Based on the findings and conclusions of the project, the following recommendations are advanced:

It is important that at an early age, learners must learn to love math since it can absolutely help them in many ways. They should find motivation from their fellow learners who enjoy mathematics. If there is an opportunity to learn or to join certain activities, grab it since exposure to a certain thing will eventually bring you to mastery level, and with that, no one can get that burning enthusiasm to learn within you. Embracing learning for the rewards will truly amaze you in the end. Never give up on Math the same as on how you wanted to never give up on your dreams. Never forcing yourself to learn certain subjects like Mathematics is a slow process that will gradually change your perspective.

Parents, on the other hand, should be the support systems. Both success and failure in learning Mathematics are of the same value. Success means keeping up the good work and sharing, whereas failure means more exciting discoveries and learnings. At an early age, be there to support your children, expose them to the realms of Mathematics slowly in an enjoyable way since learning the subjects requires effort and creativity. You can start with teaching them the basics and it will absolutely help them along the way. Invest. It is important to discover the potential in your child. Be their motivation whatever happens if you don't rush them to live up to your expectations. Rather, as simple as it is, send them to school and inculcate to them the value of education. If opportunities come along the way and if you think your child can do it, be there for them and make sure that they will feel comfortable and if you see change in them, for the better.

Teachers, as second parents, and as part of their profession must continue giving quality Mathematics Education to their learners since the subject can be very beneficial for them in many ways. Teachers must be innovative as they should be through their own initiatives. There are a lot of opportunities to improve teaching nowadays brought about by the advancement in technology and the presence of the world wide web. Continuing education in Mathematics specifically for teachers teaching Math could be a great help since as time goes by, new approaches and techniques in teaching the subject are formulated and it requires a modern and innovative teacher to do such and to cater the needs of his or her learners.

The Department of Education, on the other hand, must look down to the roots of the problems existing in schools and organize and develop projects and programs to know their learners better and strengthen the connection with its stakeholders to provide basic quality Mathematics Education in the country.

Curriculum designers might also consider revisiting the mathematics programs in our schools to provide a more amicable avenue and varied instructional designs for learning math as well as to fill in the gaps and issues that may arise along the way. These recommendations might also inspire researchers to be lifelong collaborators and find out or formulate new solutions to the ever-changing problems in Childhood Mathematics Education.

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