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Voices of Teachers in Teaching Mathematics using Mother Tongue-Based Multilingual Education

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ABSTRACT

The study explored the experiences of Teachers in Teaching Mathematics using the Mother Tongue-Based Multilingual Education to the Grade I pupils. This was conducted in the Department of Education of the identified Schools of Quezon III District, in the Division of Bukidnon for the school year 2018-2019.

The study used the qualitative research method particularly the narrative approach. There were 11 Grade I mathematics teachers purposively selected as participants of the study of seven (7) elementary schools and one (1) central school. The collections of data were through written description of class observation video and voice recording, and interview. The videotaped and voice recorded discourses were transcribed for analysis.

Results revealed that there were six (6) general themes generated in the study. These were: Voices of Teachers in Teaching Mathematics using MTB-MLE; Voices of Teachers in Speaking the Mother Tongue; Voices of Teachers on Learners' Behavior in Teaching Mathematics; Challenges of the Teachers in using MTB-MLE; and Coping Mechanism of Teachers in Addressing the Challenges Encountered; and Assistance Rescue from Stakeholders. The findings are vital information for school leaders to gain insights on the stories of the teachers which are good feedback to improve instruction and supervision on the teaching of mathematics using Mother Tongue-Based Multilingual Education.

KEYWORDS: *mother tongue, challenges, experiences, coping mechanism, behavior*

INTRODUCTION

The voices of teachers signifying their experiences towards curricular changes and school reforms are vital for school leaders. These provide information to help improve the school system in coming up with positive implementation of curricular changes and reforms. School leaders listen to the voices of the teachers since they are the direct implementers of the curriculum changes; they have the direct experiences of how the curriculum works.

One of the curricular changes in the Basic Education is the teaching of Mother Tongue-Based Multilingual Education (MTB-MLE). MTB-MLE is one of the major thrusts of K to 12 Curriculum. This thrusts mandate teachers to use the mother tongue in teaching Mathematics, Science, and English in the primary grade levels. UNESCO advocates for the literacy in mother tongue to be given the top priority before progressing the national language (Boivin, 2017).

MTB-MLE in the K to12 Basic Education Curriculum strongly supports the goal of "Every Child-A-Reader and A- Writer by Grade 1. It is the "first-language-first" education that is

schooling which begins in the mother tongue and transitions to two or more additional languages as medium of instructions in school subjects (DepEd Order No. 74 series 2009).

The public school system in the Philippines adopted the multilingual policy starting 2012-2013. Republic Act no. 10533 in 2013 strengthened the pluralistic language policy in education. It made the principles of multilingual education the foundation of the formal education curricula. It refers to the use of the first language as the medium of instruction for all subject areas in pre-kindergarten through grade three learners with Filipino and English being taught as separate.

The Department of Education and its policy localized the language of early literacy instruction, the content of the curriculum and the support system (Gunigundo, 2009). The use of the mother tongue in teaching Mathematics would be easy to understand the concepts by the learners since the language used was their first language. Learners would be more confident to their interactions for the lesson discussion. This is to make the teaching and learning process easy for the children.

There are still concerns about the implementation of Mother Tongue-Based instruction with regards to the teachers' experiences towards the learners and the learners' reaction towards the mathematics lesson using mother tongue. It implies then, that one of the experiences is that mother tongue teachers designated to teach do not have proper training and reference material have no full understanding of the concepts in the mother tongue which understanding of the concepts in the mother tongue which they are expected to teach. The teachers do not fully understand how to implement the curriculum and the teacher's found difficulty in writing the concepts of the subject areas they are expected to teach using the mother tongue (Malone, 2009).

However, Benson (2004) noted that without specific formal training on multilingual strategies and practices, the instruction is likely to be ineffective to the learners. The parents were doubtful of their child that they might become a mother tongue expert and would affect the learning of the learners. They had also expressed their fear for the quality of education that their children will gain under the implementation of the program.

As observed, Mathematics grade I teachers faced different experiences in teaching mathematics in the use of mother tongue as medium of instruction. They have expressed varied ways of experiencing how it is to teach mathematics using Mother Tongue Based Multilingual Education. In line with these, the study would like to listen to the voices of the grade 1 teachers on their experiences in the implementation of MTB-MLE exploring their observations, opinions and ideas. This would get their insights on the descriptions of the actual implementation of the program by the teachers in the elementary schools of Quezon III District including the IP School of Panuloan Elementary School. This would give a significant contribution to school leaders on how their teachers are experiencing the teaching learning process and eventually provide assistance and aid to teachers to improve instruction.

METHODS

This study used qualitative research employing narrative inquiry. Narrative inquiry is a way of understanding and inquiring into one's experience through collaboration between researcher and participants, over time, in place or series of sites, and in social interaction with

milieus (Clandinin and Connelly, 2000). This elaborated the context of conversation of the Grade I learners and the Grade I teachers during class observation. This qualitative method of research explored the experiences of grade I teachers in teaching Mathematics using MTB-MLE. It also described the experience of the teachers towards the Learners and experiences towards speaking of the language.

This study was conducted in the Division of Bukidnon, District of Quezon III particularly in the seven (7) elementary schools and one (1) Central school. The researcher considered the Grade I mathematics teachers in the district who are implementing the K to 12 curriculum. Some of the schools are located along the highway like Palacapao, Kipolot, Puntian, Cebole, elementary schools and other schools are located in the rural barangays.

The participants considered in the study were the 11 Grade I mathematics teachers purposively selected sampling of seven (7) elementary schools and one (1) central school. Most of these teachers graduated with a degree of Bachelor of Elementary Education. Some of these teachers took Mathematics as their area of specialization and are actually teaching Mathematics. Some of these teachers have earned units in Master of Arts in Education in Educational Administration.

Some of the teachers have attended trainings in relation to K to 12 and MTB-MLE. There were (2) teachers have undergone training on MTB-MLE. Majority of the teachers have not undergone the trainings, seminar, workshops and lecture forums in line with the MTB-MLE program implementation.

The data gathered in the study were interpreted using the transcription of the videotaped and voice recorded class observations of the Grade I Teachers teaching mathematics using MTB-MLE. The narrative analysis of the transcribed actual class observations, interview and FGD would describe based on the teacher's experiences in teaching mathematics. As data analyzed, the researcher formulated the themes that holds across all the voices of the teachers.

RESULTS AND DISCUSSION

Voices of Teachers in Teaching Mathematics Using MTB-MLE

The voices of grade 1 teachers were expressed through their sharing of experiences in teaching Mathematics using the MTB-MLE. The data revealed six (6) general themes. These were: *Voices of Teachers in Teaching Mathematics using MTB-MLE*; *Voices of Teachers in Speaking the Mother Tongue*; *Voices of Teachers on Learners' Behavior towards Mathematics; Challenges of the Teachers in using MTB-MLE; Coping Mechanism of Teachers in Addressing the Challenges Encountered; and Assistance Rescue from Stakeholders*.

The Voices of Teachers in Teaching Mathematics Using MTB-MLE is divided into two (2) parts. The first part is the positive experiences of the teachers in teaching mathematics using MTB-MLE, while the second part is the negative experiences of the teachers in teaching mathematics using MTB-MLE. Both the positive and negative voices of the teachers in teaching mathematics using MTB-MLE are two important factors that can greatly affect the teachers' competence and learners' performance.

The first theme that emerged in this study is on the positive experiences of teachers in teaching mathematics using MTB-MLE. Teacher's experiences in every situation especially

in the four corners of the classroom are considered significant learning in their day-to-day teaching. Frame 1 reveals the positive experiences of teachers in teaching mathematics using MTB-MLE.

As shown in Frame 1, the teachers have positive voices in teaching mathematics where most of them emphasized that learners can best understand the lesson in mathematics when MTB-MLE is used as medium of instruction. The significant statements of the teachers with their positive experiences are considered as among the indicators for positive learning outcomes. As observed, the teachers easily explained the learners in using mother tongue as medium of instruction. They elaborated the topic well in teaching using MTB-MLE. This clarified the lesson to the learners since the medium of instruction was Sinugbuanong Binisaya. It was easier for them to give instructions and deliver the lesson.

Frame 1
Positive Experiences of Teachers in Teaching Mathematics Using MTB-MLE

T2*: Positive kay kon magtudlo man gud ka ug MTB Math more gyud nga makaintindi ang bata. Mas sayun ra siya, Para sa akoa okay lang sa mga bata. Mas paspas ang ilang response sa akoa . Mas ganahan ko sa mother tongue Math.*

*(*Positive because when we teach MTB-Math the learner could easily understand. It is easy and for me it is okay for the learners. They responded quickly. I like Mother Tongue-Math)

T3*: Mas dali sila makasabot ang akong estudyante labi na gyud kon nay instructional materials nga gamit og ma hands-on nila.*

(My learners could easily understand especially when we use instructional materials in our class)

T5*: Ok lang siya mam, when it comes to explaining sa mga bata kay makaexplain man gyud ta nila.*

(It is okay Maam when it comes in explaining to the learners because we can fully explain it to them)

T9*: Ah dali raman para sa ilaha. Makasabot dayon sila.*

(It easy for them. They could understand easily.

T10*: Sa positive akong na experience sa pagtudlo sa MTB, makasabot man sila kay bisaya man.*

(The positive experience that I had in teaching MTB was they could understand because it is vernacular "Bisaya".)

This is supported by the study of Walter and Dekker (2011) who examined the effect of language instruction on educational outcomes. The results revealed that the use of local languages for instructional purposes enhances mastery of curricular content including the more critical areas of mathematics.

They found out that using the first-hand language as a medium of instruction in teaching does not compromise the development of Proficiency in English but it provided positive support for the development of such proficiency. This proves the provision in the DepEd order that states that the program provides the learner an opportunity to learn better of the lessons in their own level of understanding and capacity (D.O 74, s.2012).

This supported the Enhance Basic Education RA 10533 on the use of mother tongue to formal and non-formal education from kindergarten to Grade III. The program would help the Filipino learners to become environmentally literate and productive members to the society. This affirmed the studies of Lingua Franca Project (1999-2001) and Lubuagan First

Language Component (1999 to present) that the use of mother tongue as medium of instruction is more effective in learning.

Frame 2 presents the negative experiences of teachers in teaching mathematics using MTB-MLE. Some of the teachers shared their negative experiences and the common responses were on the difficulties in explaining terminologies using MTB-MLE. Frame 2 reveals the negative experiences of the teachers teaching mathematics using MTB-MLE.

The teachers expressed their sentiments in teaching mathematics using MTB-MLE. Based on their responses, some of the terminologies were difficult to explain and prohibited the learners from fully understanding the lessons because English language was the usual medium of instruction.

In addition, teachers found it difficult to expound and translate their lessons using the MTB-MLE because in every place there is a distinct local dialect used. The learners were used to using the English language when it comes to counting numbers and so when they counted using the

Frame 2

Negative Experiences of Teachers in Teaching Mathematics Using MTB-MLE

T1*: Ako kay negative, kay ang mga bata na use sila English one, two, three. Mao mana ilang na use so nganong motudlo paman ka ug usa, duha, tulo nga bag-o man sa ilaha so duha na noon ilang i-focus.* (I am negative because the learners frequently using English such as one,two, three. They used to it why you will teach them "usa, duha, tulo" where in fact it was new to them so they have to focus on the two. ***T12****: Nag one, two, three, four sa daycare unya pag-abot sa Grade I, unsa duha tulo nasad.Nagalisod naman hinoon sila imbis naanad na sila sa ilang balay ug one, two…* (It's one,two, three, four in daycare however in Grade I, it is "usa, duha, tulo, nasad" they find it difficult. ***T6****: Naka experience ko nga murag lisod siya kay ang gamit man gud sa atong MTB nga mga pinulungan, lisod kay didto siya sa Sinugbuanong Binisaya* (I've experienced that it was difficult because the use of our MTB languages, it is difficult because it belongs to Sinugbuanong Bisaya) ***T8****: Lisod kay laglom man ang terms in bisaya sa atung kuan dili man atoang binisaya nga diri sa palibot. Kay diba daghan baya klase sa binisaya* (Difficult because of the terminologies in vernacular, in our case its not the local dialect "bisaya" in our community. The fact that there are multilingual variation of vernacular "bisaya" ***T1****: Unya kanang sa ang ilang mother tongue man gud nila karon, kung mu apply man gud mi sa rules dadto sa book, maglisud man gud mi ug apil kay dili baya ni mao ang naandan nato nga mother tongue nga atong gigamit. So sa mga books lang ang mga laglom nga terms nga na encounter.* (The mother tongue today, if we will going to apply based from the rules in the book, we find it difficult because it is not the usual mother tongue that we are using. In the books, we encountered difficult terminologies)

Sinugbuanong Binisaya as their mother tongue, they were confused with the lessons. This affirmed the notion of Baker (2011) that teaching mathematics using the mother tongue-based instruction requires particular care with the language. The mathematical use of words differs from everyday use like minus, add, subtract, divide, difference, product, estimate table and

etc. These terminologies can be more understandable by the children if used as it is, than translated.

In like manner, Melencion (2017) stated that some teachers are asked to teach some other language or vernacular, multilingual dialects that are unfamiliar to them. These points to the difficulty of using the MTBMLE since there are different variations of the mother tongue even in one locality. Furthermore, a balance between mastery of the facts of higher order thinking skills translated into the native dialect must be forged by the teachers in their choice of a teaching strategy, selecting appropriate teaching strategy and suited for the level of the learner, and mastery of prerequisite knowledge or concept as translated in the native dialect (Ball, 2010).

Voices of Teachers in Speaking the Mother Tongue

The data collected from the focus group discussion and the individual interview revealed that the Sinugbuanong Binisaya as their medium of instruction in teaching mathematics seems to be challenging.

As observed, there were difficult terminologies written in Sinugbuanong Binisaya that were hard to explain and needed to be contextualized for it to be understood. A sample term in Sinugbuanong Binisaya is "sikaupat" or in English "one fourth", and "kwadrado" or square. The teacher has to explain it and translate it to an easier term in mother tongue to the learners or use the English language in a manner that they can relate and understand. Frame 3 reveals the experiences of the teachers in speaking the mother tongue. In this frame, it shows the diversity of learners since they have risen from multicultural dialect.

Frame 3

Experiences in Speaking the Mother Tongue

T6*: Maglisod mi apil kay dili man pod mao ang naandan nga uban terms gigamit sa Sinugbuanong Binisaya mga laglom ra kaayo. Kasagara sa mga bata naanad sila sa Kinder pa nga English ang terms labi na gyud ang sa numbers kay ang gitudlo sa teacher sa Kindergaten pa sila.*
(We experienced difficulties in the terminologies because we were not used in some difficult terms in Sinugbuanong Binisaya.Most of the learners exposed English language since their teacher taught those English in Kindergarten.)
T11*: Mas dali sila makasabot sa mga English term English like sa fractions one fourth kaysa sikaupat sa Sinugbuanong Binisaya. Pero ang concept na dayun sa uban ang binisaya*.
(The learnerss easily understood English like in Fractions "one fourth" than using "sikaupat" term in Sinugbuanong Binisaya. However, other mathematical concepts were written in Sinugbuano.)
T10: *Lisod kay dili haum sa mga bata ang terms kay laglom kaayo. Daghan kulang sa materials limited ang workbook sa mga bata.*
(It's difficult since the language is not suitable terms to the learner . There are insufficient materials and workbook for the learners.)
T8: *Wala man ko nalisdan okay raman.*
(I find it easy).

Teachers used translation for unlocking of difficulties and context clues in explaining the terminologies in Sinubuanong Binisaya. The learners were multilingual. When learners reached Grade I, the Grade I teacher continued to use the English language as medium of instruction in mathematics.

It can be inferred that the terminologies written in Sinugbuanong Binisaya turned out to be strange to the learners when they encountered these. As observed, when the teacher used these terminologies in teaching mathematics, the learners kept on asking the teacher what those words meant since they were not used to it. The teacher needed to translate those words in their common language or unlock those terms like using the word in a sentence, pictures, context clues, and translate in English or given a situation that they could relate with and understand easily. When learners understand the terminologies, they become cooperative in the discussion.

The result confirmed that the teachers' difficulties included the challenge to use the terminologies written in Sinugbuanong Binisaya in teaching mathematics. To introduce those terms to the primary grade learners, teachers had to translate these in English or unlock these terminologies. When teachers could not understand some difficult terms in Sinugbuanong Binisaya, they used the English language. Only then could the learner comprehend the lesson. Also, teachers needed careful analysis on how to deliver the lesson following the Teacher's Guide and Learner's Materials using Sinugbuanong Binisaya as the medium of instruction in teaching Mathematics.

However, one of the participants, a newly hired teacher, shared that she never experienced difficulties in teaching mathematics using the mother tongue as medium of instruction. It was easy for her to teach the lesson and gave instructions to the learners because the language used was in local dialect. When she encountered difficult terms, she would change it to the usual terms in mother tongue used by her learners in school.

The study of Cabansag (2014) cited the challenges of teachers towards the use of mother-tongue based instruction. The challenge he cited referred to multilingual environment and difficulty of translation. This explains Malone's (2008) caveat in translating words into the native dialect of the learners to be done with utmost accuracy and appropriateness.

Benson (2004) however noted that without specific formal training on multilingual strategies and practices, instruction is likely to be ineffective. Moreover, Phyak (2011) mentioned that teachers need more training on using the first language to be used in teaching. They have to learn the dialect of the learners so that learning would be meaningful to the learners. Most teachers need training on methodology so that they can achieve the advantages of teaching the language that children understand.

Voices of Teachers on Learners' Behavior in Teaching Mathematics

The theme shows the reactions or feedbacks from the learners toward Mathematics using MTB-MLE. It is very essential to consider the learners' response when taught by the teacher using mathematics. As shown in frame 4, most of the learners have positive responses. The excerpts in this frame indicates that when the teachers used local dialects, the learners could easily internalize the lesson considering that it was conveyed using their mother tongue. The Frame reveals that the learners showed enthusiasm and confidence in communicating with their teachers. Primary grade learners were not afraid to talk in the classroom. They could express freely their ideas and opinions. Further, from the excerpts during the FGD, one of the participants mentioned that:

The responses of the learners were positive; they were more active in class because they could understand what was being discussed as they became acquainted with the words and they usually heard it, and thus, they could easily respond. They were active and cooperative.

This corroborated the results in the study of Nolasco (2009) that children could easily express their ideas because they are not anymore afraid in committing mistakes when constructing their sentences. They can elaborate their ideas since they are free to express these.

They can do reasoning because they associate their experiences to the lesson. Children can draw their ideas because they are already familiar with the language. Language would not be the hindrance of their learning. Instead, it is a great help for them.

Frame 4

Learners' Behavior in Mathematics Lesson using MTB-MLE

- *Muparticipate sila.. Enjoy baya sila kay kung unsa ilang pinulungan nga gusto ipadayag, ilang mang mapadayag.*

(They were participative and they enjoyed because whatever will be the language that they will going to express, they could express it.

- *Happy sila nga muparticipate sa imuha kay bisaya gyud .. "Ah, wala ni sayop kay bisaya man"*

(They were happy in participating to you because it was solely vernacular. Ah, there is nothing wrong with this because it is vernacular)

- *Okay kayo sila kay mas makasabot man sila kay binisaya man. Gaparticipte gyud sila kay bisaya ra man*.

(It was very fine because they could easily understand vernacular and they participated well because its vernacular)

- *Mas makaintyindi sila sang dali*

(They could easily understand)

- Confident sila Ma'am, dli maulaw ud dili gaduha-duha.

(They were confident Ma'am because they will not feel ashame and doubtful.

- *Ga participate sila Ma'am. Katong sa addition mas madali sila mkasabot sa bisaya. Kay makasabot man sila sa instruction.*

(They participated Ma'am. In addition they could easily understand in vernacular because they understood the instruction)

- *Makasabot kay ang atong language atong gamiton. Sige ug pangutana. " Unsa na teacher? Maoy ilaha.. Maenjoy sila peru magsige silage pangutana.*

(They understood because of the language that were using. They frequently asked questions such as What's that teacher? That's their nature but they are enjoying while keep on asking)

Moreover, the learners were happier when the teacher used *linumad* in teaching them. They were happy when the teacher used their native language. This confirmed the findings of Nunan (2009) that incorporating learner's home language and culture into the curriculum, viewed as inclusive strategies that value local ownership, help maintain or enhance motivation, and lead to greater appreciation on the part of the learners of the process underlying their learning.

Additionally, Fabrigar (2017) asserted that when activities in class are done using the mother tongue, the learners are more active, participative and interactive. This is due to the fact that they have a common language to express their own ideas, feelings, opinions and the like. Learners' sense of belongingness was enhanced because they have the opportunity to take part. She also emphasized that teachers need to have good classroom management styles to control negative behaviors of learners.

As shown in Frame 5, the learners are proactive during classroom discussion. They could easily answer the questions of the teacher using MTB-MLE. Malone (2009) cited that by the time children begin schooling, they already have the confidence in their ability to communicate using their native language. The foundation of their knowledge and experience are developed by the people from home and from the community. Interacting with the people around them play the important role in their classroom learning. The children can easily learn because their learning from home to school can be enhanced in the classroom.

As observed, majority of the learners were energetic in collaborating with the activities instructed by their teachers. They displayed cooperation in answering the exercises. They were delighted with the class discussion. The learners were confident enough to answer the questions.

Frame 5

Excerpts from the Discussion of Teacher and Learner in Grade 1 Class in Their Subject: Mathematics

Teacher: Karon aduna koy story about sa managsoon nga ganahan ug bulak. Unsa kaha nga bulak ilang ganahan ba? Kabalo mo?
Children: Kabalo.
Teacher: Ahh wala pa mo kabalo kay wala paman mo nakadungog sa akong storya. Hehe. So ang inyung buhaton maminaw mo ug tarong ni teacher. Unsa gani buhaton?
Children : Maminaw, Maghilom maglingkog ug tarong ug dili magsipat
Teacher: Okay everybody sit down properly. Maminaw, Maghilom maglingkog ug tarong ug dili magsipat ug dili magtabi sa katapad. Maninaw para makatubag sa pangutana. Nakasabot?

Children: Nakasabot Teacher..

Teacher: Si Bob ug Ana. Ai Bob ug Ana nanguha sila ug bulak. Nanguha ug 6 ka bulak nga gumamela si Ana. Si Bob pud nanguha ug 8 ka bulak nga gumamela. Ila kining gamiton sa project sa sining.
Pila kabook bulak ang gikuha ni Ana?

Children : unom (6) ka bulak

Teacher: si Bob pila kabook gikuha ni Bob?

Children: walo (8) kabook bulak ang gikuha ni Bob.

Teacher: So mao kadtu ang estorya. Kinsa man ang mga bata sa storya? Yes Charlyn.

Charlyn: Si Bob

Teacher: KInsa pa gyud?

Riza: Ana

Teacher: Palakpakan natu sila.. Next question, unsa ang ilang gikuha?

Roan: Nanguha sila ug bulak.

Teacher: Very Good! Palakpakan natu si Roan. Next, pila ka bulak ang gikuha ni Ana?

Ruby: Upat

Teacher: uy? Upat di ang gikuha ni Ana? Yes Aliza

Aliza: Unom

Teacher: Aguy nakalimot na dayun mo. Halaka mga bata pa kaayu limtanon na. hehe.Ang gikuha ni Ana nga bulak kay Unom. Behh palakpakan natu si Aliza. Pila pod ka bulak ang gikuha ni Bob?

Raffy: Eight.

Teacher: Eight o walo. Si Ana unom iyang gikuha si Bob eight iyang gikuha. Palakpakan natu si Raffy. Okay, Kinsa ang mas daghan nga makakuha ug bulak? Kinsa may nagkuha ug mas daghan?

Children: Si Bob.. si Bob..

Teacher: Opps, unsa tu akoang ingon if you want to answer you raise your hand. Yes Aljune

Aljune: Si Bob

Teacher: Very good.. Pakpakan natu si Aljune. KInsa pod ang nagkuha ug mas gamay nga bulak? Yes nice?

Nice: si Ana

Teacher: Yes si Ana ang nagkuha ug mas gamay nga bulak. Kya nganong mas gamay man ka Ana? Kay pila ra gani iyang gikuha?

Children : Unom

They could express on their feelings about the lesson. They liked it when their teacher praised them when their answers were correct.

This result conforms with the study of Fabrigar (2017) who observed that when the mother tongue is used in the classroom, the learners are more active, participative and interactive. This is because they have a familiar language to express their own ideas, feelings, opinions and the like. This language is also their home language, which may have let them feel comfortable as they have something familiar in school. Learners' sense of belongingness is enhanced because they have the opportunity to part. She also emphasized that teachers need to have good classroom management styles to control negative behaviors of learners.

Challenges of the Teachers in Using MTB-MLE

Teachers encountered challenges in teaching mathematics using the mother tongue. Based on the data collected during the focus group discussion, individual interview, and transcript of classroom observation, the study revealed the following challenges:

As shown in Frame 6, one of the major challenges of the teachers is the utilization of instructional materials when they teach mathematics using *Sinugbuanong Binisaya* as their medium of instruction.

Frame 6

Challenges toward MTB-MLE as a Medium of Instruction in Mathematics on the Utilization of Instructional Materials

T7*: Maglisod mi apil kay dili man mao among naandan nga mother tongue nga gigamit sa mga books nga laglom ang mga term nga na encounter*
(We find it difficult because the mother tongue that was used in the book was not the same as the mother tongue that were using. We encountered difficult terms.
T8*: Dili nako masabtan ang laglom nga terms sa libro. Apil ang teacher galibog samokan na dayun ko anang binisaya.Galibog pod apil ang mga bata.*
(I could not understand the difficult terms in the book. The teacher was also confused in using binisaya and likewise the learners will also get confused.
T10*: Lisod kay dili haum sa mga bata ang terms kay laglom kaayo. Daghan kulang sa materials limited ang workbook sa mga bata. Wala pod mga manipulative materials para sa mga bata.*
(It was difficult because the terms was very difficult and were not suited for the learners. Mostly lack of manipulative materials and limited workbooks for the learners)
T6*: Lisod ang terms dili kaayo masabtan sa mga bata ug sa teacher kay laglom kayo*
(The terms were difficult and the learners could not understand it as well as the teacher.
T1: Laglom kaayo ang pag-interpret sa mother tongue bisaya ra gyud kaayo.Lack of Manipulative Materials.
(The interpretation of the mother tongue was so in-depth. Lack of manipulative materials.

Teachers teaching mathematics using *Sinugbuanong Binisaya* as medium of instruction faced challenges in the utilization of instructional materials such as non-availability of mother tongue dictionaries, insufficiency of textbooks and manipulative materials.

They claimed that there were no available mother tongue dictionaries in the school. Teachers were provided with textbooks/workbook to be utilized by the learners. This turned out to be a

problem because this was given only once a year, and yet these are needed for the succeeding years. The number of textbooks was based on the number of enrollees on the year when it was given. When the population increased, primary grade learners needed to share their textbook with their classmates. Additionally, learners were not allowed to write anything on the textbooks. They had to copy the activity on their paper.

Furthermore, the teachers admitted that they lack manipulative materials in their classrooms. Manipulative materials attract the interest of the learners. It allows the learners to play around the concept and it would be easier to analyze what they did. The resources to be used in teaching are critical things to be considered in the teaching process. Manipulative materials encourage the learners to see the real-life application of concepts.

As observed, the teachers used real objects as instructional materials that were available in the surroundings like stones as *counters* and leaves in *comparing more than and fewer than* based on their lesson. Teachers were innovative and practical enough to make their class lively. They ensured that learning will occur despite the lack of IMs. The learners still enjoyed activities using the localized materials that were very familiar to the Grade I learners. Learners are actively engaged when hand-on activities provided. The resourcefulness of teachers, as revealed in this study, is not an isolated case. Berial's (2003) study yielded the same finding, with teachers displaying resourceful by using indigenous materials in their classes.

The use of localized materials and at the same time, providing a chance for the learners to touch and manipulate the real objects is the same idea forwarded by Stein and Bovalino (2001) who emphasized the use of manipulative in teaching as an essential tool in helping learners think understand the concepts better. Furthermore, this finding supports the idea of Brock and Utne (2005) that manipulation of materials allows learners to retain information and concept better as they can relate the abstract concept to a concrete material.

Coping Mechanisms of Teachers in Addressing the Challenges Encountered

As observed, the teachers had different initiatives to address the challenges experienced in teaching mathematics using MTB-MLE. The next frame reveals the different coping mechanisms of teachers in addressing the challenges in teaching mathematics using Sinugbuanong Binisaya.

Frame 7

Coping Mechanism of Teachers in Addressing Challenges Experienced by the Teachers in Teaching Mathematics Using Sinugbuanong Binisaya as Medium of Instruction

***T6**: Para sa akoa, kanang ga research ko sa mga strategies, basin pag sauban nga problems makakuha ko ug laing resources, makakuha tag additional sa atong libro dili lang kay sa libro ta ga focus kay limited man ang anaa sa mga libro, for example sa mga Im's kay kasagara sa lower IM's man jud so mag research para ma accomplish pud sa mga bata.*
(For me, I just do research for instance strategies on teaching Mathematics. I might get additional resources in my research. I didn't rely too much in our book. Since our book has only very limited resources. Example, I researched instructional materials for them to accomplish also).
***T7**: Ginatranslate nako sa English ang dili masabtan nga laglom kaayo nga term sa bisaya.*
(I translated into English those difficult terms in Sinugbuanong Binisaya.)
***T10**: Magresearch nalang ko sa mga materials nga needed like worksheets.(I will find another source for the materials needed like worksheets.)*
***T5**: Nangutana ko sa akong kauban ug dili kanang context clue kon giunsa siya sa pagamit sa sentence mao rapod akong sabton, para mas mapasabot pod nako sa mga bata.*
*(*I asked my co-teacher or use the context clue in order to help the learners understand easily).

As can be gleaned from the Frame, most of the teachers became innovative in finding solutions to address the needs and problems of the learners. Teachers spent time in surfing the internet to look for additional resources since the mathematics book has very limited resources. They downloaded instructional materials needed like worksheets and enhancement activities to enrich the learning of the learners. Some teachers claimed that when they encountered difficulties in deep terms or highly localized in Sinugbuanong Binisaya, they would ask the senior teacher or the co-teacher who was familiar with the terms.

One way to make lessons easier to understand is the use of context clue. During classroom observation, the teacher simplified an unfamiliar term to simple Binisaya term. In situations like this, there is a need for a fluent teacher in the medium of instruction or in the mother tongue of her/his learners.

Other teachers used varied examples or situations that the learners can relate to and so that they can recognize the concept in their levels. Furthermore, one of the participants claimed that she would change the difficult terms into English language for the learners to have deeper understanding particularly in the terminologies like "minus", "plus", "one-fourth" and other mathematical terms.

Based on the gathered data, few of them had attended seminars related to MTB-MLE. All of the participants emphasized that through trainings they would likely become more effective teachers since they all aspired to attend seminars in MTB-MLE for them to learn strategies suited to the learners particularly in mathematics using Sinugbuanong Binisaya as medium of instruction.

One of the particular features of a teacher's approach to learning is the use of learning strategies (Protheroe & Clark, 2008). Teaching strategy is what a teacher uses inside the classroom to achieve the objective of the lesson (DepEd Order 42 s. 2016). A teacher can use a single approach or a combination of strategies in teaching. The primary purpose of teaching strategy at any level of education is to bring a fundamental change in the learner (Tebabal & Kahssay, 2011).

Malone (2008) stressed her point regarding the use of teaching strategies among multilingual teachers. A teacher who has mastered the various teaching strategies in teaching mathematics will find it difficult to translate it into workable teaching experience if the teacher lacks the mastery of the language to which the teaching strategy activities are translated.

This supports the study of Sario (2014) that teachers need to enhance their teaching strategies for teaching the MTB-MLE. Additionally, she stressed that learners actively participated in the class when they use mother tongue language in the discussion.

Assistance Rescue from the Stakeholders

During the interview and FGD, the participants shared their experiences on the assistance of the stakeholders to address the challenges of the teachers in teaching Mathematics. The next frame (Frame 8) presents the support and assistance given by the stakeholders. One of the teachers indicated that the school head did not assist them.

Frame 8

Assistance Rescue from the Stakeholders

T1 Wala man ni niya gina-assist sa challenges labi na in teaching mother tongue Mathematics sa kadaghan ancillary services dili na mapriority.
(The school head didn't assist us in the challenges particularly in teaching mother tongue Mathematics because there are many ancillary services that need to be prioritized).
T4 Layo man among Principal kami ra gatinabangay ni Ma'am Nida. Sa tribal leader mi gadool sa IP mandatory siya ang tigsulbad sa mga kaso sa problema apil dri sa skwelahan.
(We helped together with Ma;am Nida because the school principal is far from us. We belong to a cluster school and the principal will just visit us rarely. We will just ask the tribal leader in the IP Mandatory to solve problem related to our school)
T5 Sagara kanang obserbahan magsulat rana sila og recommendations.
(Usually, during the classroom observation the school head will write some recommendations.)
T11 Dili priority ang amoang needs kon moistorya ta sa atong kinahanglanon moingon ra ug "okay rana'.
(When we open up about our needs and challenges it is not the priority of the school. The school will just say "that's okay").
T4 Wala man ko nidool sukad sa among school head mangutana lang ko sa co-teacher.
(I never tried to ask the school head. When I experienced difficulties, I just asked my co-teachers).

Particularly in addressing the challenges of teaching Mathematics for there were so many activities in their school that need to be prioritized, like paper work for reports, trainings, school-based management, feeding program and liquidations.

However, majority of the participants asserted that during the classroom observation the school head wrote some comments and recommendations to improve the teaching and learning process. After the classroom observation the teacher and the school head shared and helped each other to address the challenges and to ensure the effective implementation of mother tongue-based instruction in the Department of Education.

In addition, the participant in the ICC School emphasized that the one helping them directly was the tribal leader in their community since the school head was not always present in their school because she reported to her main school. The ICC School belonged to a cluster school so there was only one (1) school head for two schools. The tribal leader of Matigsalog would help the teacher to address this challenge in teaching. He would call the attention of the learners at risk and encouraged the learners to report to the school. The learners and their parents immediately obeyed their tribal leader. They were very respectful to their tribal leader and to the people who belonged to their tribe.

Some of the participants preferred to share their challenges to their co-teachers. Sharing or expressing the challenges encountered with the co-teachers was one of their effective ways to cope. Accordingly, they would feel comfortable when they shared it to their co-teacher

particularly if the teacher was in Grade I advisory. They would discuss and exchange ideas to solve the challenges like in translation of difficult terminologies, different ways and strategies in teaching, and plan out interesting group activities that would interest the learners.

As observed, the presence of the stakeholders in the school had great impact in addressing the challenges met by the teachers. They had a great part in ensuring quality education for the learners since the stakeholders, such as school head, tribal leaders, and parents helped in addressing the challenges. This finding substantiates the claim of Balaoro (2014) that the support of the stakeholders is usually very evident when they help in addressing the challenges faced by the teachers in the implementation of MTB-MLE Program. Hence, she further emphasized that the implementation of the program must be communicated to all stakeholders during school Governing Council's Meeting, General Parent Teachers Association and Barangay/Municipal Assemblies.

The school heads, as part of the stakeholders, have to address the needs of the teachers (Fabrigar, 2017), especially on instructional materials and books to facilitate effective instruction of the teachers when using Sinugbuanong Binisaya.

The community, an important counterpart in program implementation, has to be involved also. The participants of this study have claimed that support from the community is vital. According to Sharif (2002), involvement of the community in the implementation of educational programs is essential to quality education for learners since it is a partner of the school in the development and improvement of the school. Batara (2008) also added that the school could become effective if the community continues to support improvements particularly in undertaking various activities and projects for the welfare of the children. The parents and the community should be informed with various activities and projects they are willing to support.

Furthermore, this particular finding evidences the integral part of an effective educational system which is community involvement as proposed by Henderson (2016). The same idea was put forward by Luardo (2012) who contended that involvement of the community in the development of educational facilities are very essential in providing quality education for the learners.

Moreover, the stakeholders' support that the teachers have been asking for, has legal basis, embodied in BPB 232, which clearly stipulates the obligation of parents to support and cooperate in all school activities and programs of schools as they are part of the system that ensures the success of children when all the stakeholders work together (Nebres, 2014).

CONCLUSION

Based on the findings generated, there were varied experiences shared by the public elementary Grade I teachers in teaching mathematics using MTB-MLE. Despite the challenges and problems encountered, they were able to enrich the teaching and learning process. This enhanced teachers' instructional competence to help their students improve in their academic performance. The proper implementation of the Mother Tongue-Based Multilingual Education fosters continuous strong partnership among the school administrators, master teachers, teachers and students to provide quality education to learners.

Moreover, the teachers possess the attribute of being innovative and resourceful in response to emerging needs and concerns of the learners.

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