

Implementation of Mother Tongue-Based Instruction and Academic Achievement of Key Stage 1 Pupils in Math

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Abstract—This study aimed to determine the significant relationship between the mother tongue-based instruction and academic achievement of key stage 1 pupils. Employing the descriptive correlational research design, the researcher utilized survey in determining the extent of the implementation of mother tongue-based instruction in teaching Math in terms of language learning, classroom instruction and implementation. Moreover, the researcher also gathered the academic achievement of the key stage 1 pupils in Math in the 2nd quarter. And based on the statistical treatment of the data, the study revealed a significant relationship between the extent of mother tongue-based instruction in terms of language learning and implementation and academic achievement in Math. On the other hand, no significant relationship exists between the extent of mother tongue-based instruction in terms of classroom instruction and academic achievement in Math. Further, key stage 1 teachers encountered challenges in teaching Math using mother tongue as medium of instruction in the manner that not all pupils have the same mother tongue used at home and that there are terms in Mathematics which are difficult to understand when it is used in the lesson using the prescribed medium of instruction. Thus, the study shows that implementation of mother tongue as medium of instruction in teaching Math to key stage 1 pupils has emerged a very satisfactory academic performance despite of the challenges encountered by the teachers in the implementation.

Keywords — *Implementation, Mother Tongue-Based Instruction, Academic Achievement, Key Stage 1 Pupils, Math*

I. Introduction

Learners begin their education in the language they understand best-their mother tongue-and need to develop strong foundation in their mother language before effectively learning additional languages. This is where the Department of Education (DepEd) gets inspiration in its inclusion of Mother Tongue-Based Multilingual Education (MTB-MLE) as a feature of the Enhanced Basic Education Program. It mandates the use of the language that students are familiar

with (the first language) as medium of instruction to allow them to grasp basic concepts more easily.

As a subject, mother tongue education focuses on the development of speaking, reading, and writing from Grades 1 to 3 in the mother tongue. As a medium of instruction, the mother tongue is used in all learning areas from Kinder to Grade 3 except in teaching Filipino and English subjects. Filipino is introduced in the second quarter of Grade 1 for oral fluency (speaking). For reading and writing purposes, it will be taught beginning in the third quarter of Grade 1. The four other macro skills which are listening, speaking, reading, and writing in Filipino will continuously be developed from Grades 2 to 6. The purpose of a multilingual education program is to develop appropriate cognitive and reasoning skills, enabling children to operate equally in different languages – starting with the first language of the child.

Moreover, the importance of language in the development of education in any nation has long been stressed by linguists. The use of the appropriate language in teaching learners greatly contributes to academic performance and success in school. Language plays a vital role in the learning process of elementary learners. Teachers must ensure that the language to be used in the different subject areas is the language first heard at home (Benson, 2004). It provides an opportunity for the children to exercise their right to learn in their first language (Sumbalan et al., 2017).

Nolasco (2012) found that when pupils use and master their first language it is used in their immediate environment or the entire country. Pupils can develop critical, reasoning, and problem-solving skills that they can use for life-long learning. As emphasized by Malone (2010), indigenous language is language education program that helps build a strong educational foundation, then bridge successfully into one or more school languages, and then use both or all their languages for life-long-learning.

Language is believed to be the gateway for learning and the vehicle that facilitates acquisition of new knowledge through direct and indirect interaction with teachers and peers, as well as through the reflective processes of introspection (Francis & Rivera, 2007; Fernando, 2020). Researchers like Akinola (2009), Ojo (2009), Oladokun & Adekunle (2010), and Alimi (2012) acknowledge the use of mother tongue in teaching pupils in both pre-primary and primary schools.

Language is one of the valuable gifts which has been passed to children (Obod et al, 2019). The first language is significant and builds the basis for all later communication progresses. Parents, family members, and early childhood professionals have a very important role in the development and maintenance of the first language. Study of UNESCO (UNESCO, 2005) found that knowing one language can assist the child to comprehend how other languages work. First or home language is particularly important for the child 's development of a positive self-concept and well-being. Children who have the chance to maintain their first language can extend their cognitive development while learning English as a second language. Their level of competence in

the second language has a relationship to the level of skill they have achieved in their first language (Garcia & Baker, 2007).

According to Besa (2013), Mother Tongue Based Language (MTBL) Education was implemented in basic education system of the Philippines because of the positive effect of multilingualism among the learners. In the DepEd Order No. 74, the former Secretary Jesli Lapus states that Mother Tongue-Based Multilingual Education, referred to as MLE, is the effective use of more than two languages for literacy and instruction (Oyzon V. e., 2009). Henceforth, it shall be institutionalized as a fundamental educational policy and program in the Department in the whole stretch of formal education, including pre-school and in the Alternative Learning System (ALS) (Besa, 2013).

On the other hand, the use of mother tongue in instruction gives challenges to the teachers most especially if the teacher cannot speak the language of the pupils to which he/she is assigned. Unfortunately, this contributes confusion among teachers and the pupils. Thus, there are teachers who usually integrate or interpret the language into Filipino or English which inviolate the purpose. However, there are also pupils who are confused on the correct mother tongue of a certain word for the one introduced in class is different from that of their daily language used at home. This confused the parents about what is the best word to use.

Though there are teachers, parents and pupils who appreciate the use of mother tongue as medium of instruction while others do not, still as mandated, mother tongue-based instruction must be implemented in the key stage 1 for all the learning areas except Filipino and English. And it is in this premise that the researcher decided to conduct this study to determine the significant relationship between the mother tongue-based instruction and academic achievement of key stage 1 pupils in Math. A proposed intervention plan was formulated based on the findings of the study. Moreso, it is also in the above rationale that the researcher who is currently a key stage 1 teacher in the above mentioned local, would like to delve worthy research undertaking that will benefit herself, the school she is currently teaching and that of her Graduate Program she is enrolled at.

This study aimed to determine the significant relationship between the mother tongue-based instruction and academic achievement of key stage 1 pupils in Math in Puerto Bello Elementary School of Merida District, Leyte Division for School Year 2022-2023. The findings of the study were the basis for the proposed intervention plan.

Specifically, this study sought to answer the following questions:

1. What is the extent of mother tongue-based instruction in teaching the key stage 1 pupils in terms of the following:
2. Language learning;
3. Classroom instruction; and

4. implementation?
5. What is the level of academic achievement of key stage 1 pupils in Math for quarter 2?
6. Is there a significant relationship between the extent of mother tongue instruction and level of academic achievement of key stage 1 pupils in Math for quarter 2?
7. What are the challenges in the implementation of MTB MLE?
8. What intervention plan can be proposed based on the findings of this study?

II. Methodology

Design. This study employed the descriptive correlational research design to determine the significant relationship between the mother tongue-based instruction and academic achievement of key stage 1 pupils in Math for School Year 2022-2023. in Puerto Bello Elementary School of Merida District, Leyte Division is the main locale of the study. There are 10 key stage 1 teachers and 77 key stage 1 pupils involved in this study. The key stage 1 pupils are enrolled in the said locale for School Year 2022-2023. The instrument used in this study is a survey to be conducted among the teachers which consists of four sections: 1.) language learning, 2.) classroom instruction and 3.) implementation. The language learning section of the survey was utilized by Ramos (2001). This survey questionnaire will measure the teacher's opinion about the theory and practice of using mother tongue-based instruction. The eight items are divided into two of which four are relating to theory while the other four are to practice. The items relating to practice are reverse coded. All items can be answered using the four-point Likert scale with options of strongly agree, agree, disagree and strongly disagree. The classroom instruction portion of the survey assessed participants' perceptions of the importance of certain classroom practices in MTB. Their knowledge about the policy was also assessed by asking respondents if they had heard of MTB-MLE, which was coupled with an open-ended question asking what they knew about it. The implementation section of the survey was only administered to teachers and aimed to measure their perceptions on reform implementation. This included questions about their perceptions on the likelihood of reform implementation in their school and items measuring viewpoints on teacher preparedness, difficulty of implementation, amount of extra work involved, and congruence with previous policy. These items were taken from Guskey's (1988) study on the implementation of instructional innovations. Lastly, to determine the academic achievement of the pupils, the researcher will gather the 2nd quarter grade of the pupil-respondents in Math. This research is focused on determining the significant relationship between the mother tongue-based instruction and academic achievement of key stage 1 pupils. A Proposed Intervention Plan based on the findings of the study is the output.

Sampling. There are 10 key stage 1 teachers and 77 key stage 1 pupils involved in this study. Universal sampling technique is used in choosing the respondents of the study. Hence, face-

to-face classes has already been implemented during the data gathering process, the research instruments were administered face-to-face with consent from the parents and Local IATF and strictly following the prescribed Health Protocol during the limited face-to-face classes.

Research Procedure. The researcher prepared the research design and tools utilized in the study. Approval and recommendation from the Panel of Examiner of the Graduate Studies was sought. A letter request to conduct this study was forwarded to the Office of the Schools Division Superintendent. Upon approval, permission from the District Supervisor and School Head was secured before the actual gathering of data. Orientation of the participants was done face-to-face after the approval of the permit from the parents of the pupil-respondents and teachers. The tools used in the study were survey on the implementation of mother tongue-based instruction which are divided into 3 categories, language learning, classroom instruction and implementation and 2nd quarter grade of the pupils in Math to determine the academic achievement. These tools underwent a series of validation by the experts like the District Math Coordinator, School and District Head before it was given to the pupils. After the approval of the tools, these were reproduced as to the number of pupil-respondents. In the conduct of the survey, the researcher inserted a letter on how the teacher-respondents will answer the survey. The researcher collected the grades of the pupils under the teacher-respondents. Results of the survey and grades of the pupils were collected. Data were tallied and submitted for statistical treatment. Analysis and Interpretation of Data. Making of Proposed Intervention Plan followed.

Ethical Issues. The researcher properly secured the permission to conduct the study from the authorities through written communication. In the formulation of the survey questionnaire that was used in the study, the use of offensive, discriminatory or other unacceptable language was avoided. The respondents' names and other personal data were not included in this study to protect their privacy. Participation of the respondents was also voluntary. Orientation was conducted for the respondents with their parents. In the orientation, issues and concerns were addressed and consent to be included in the study were signed. The researcher-maintained objectivity in analyzing and discussing the results. All authors whose works were mentioned in this study were properly quoted and were acknowledged in the reference.

Treatment of Data. The Simple Percentage and weighted mean were employed to determine the extent of mother tongue-based instruction in teaching Math in terms of language learning, classroom instruction and implementation and the level of academic achievement of the pupils in Math. **Pearson r** was used to determine the significant relationship between the dependent and independent variables of the study.

III. Results and Discussion

Table 1
Extent of Mother Tongue-Based Instruction in Terms of Language Learning

No.	Statement	Weighted Mean	Description	Interpretation
1	Children who can read and write in Sinugbuanong Bisaya will be able to learn English easier than children who cannot read and write Sinugbuanong Bisaya.	3.02	Agree	High
2	Children will do better in school if they learn to read and write in Sinugbuanong Bisaya first.	3.05	Agree	High
3	Learning math in Sinugbuanong Bisaya helps children do better in those subjects.	2.94	Agree	High
4	When children learn to read and write in Sinugbuanong Bisaya, it is easier to learn to read and write in English later.	2.72	Agree	High
5	In the early grades, it is better for students to learn in English than Sinugbuanong Bisaya.	2.90	Agree	High
6	Using Sinugbuanong Bisaya to teach children has negative effects for when they learn English.	2.91	Agree	High
7	Children will learn English best if English is the only language spoken in their classroom.	3.10	Agree	High
8	Learning in Sinugbuanong Bisaya might be confusing for children.	3.00	Agree	High
AVERAGE		2.96	Agree	High

Legend:

Ranges	Description	Interpretation
3.26-4.00	Strongly Agree	Very High
2.51-3.25	Agree	High
1.76-2.50	Disagree	Low
1.00-1.75	Strongly Disagree	Very Low

Table 1 presents the extent of Mother Tongue-Based instruction in terms of language learning. It was revealed on the table that the extent of Mother Tongue-Based instruction has an average mean of 2.96 which is interpreted as high. This means that the teacher-respondents agree that learning of the pupils in using mother tongue as medium of instruction in teaching Math is

high. This implies that the pupils can fluently speak the language and that they can understand the lessons in Math using their mother tongue as language of instruction.

Table 2
Extent of Mother Tongue-Based Instruction in Terms of Classroom Instruction

No.	Statement	Weighted Mean	Description	Interpretation
1	How important do you think it is for Key Stage 1 children to...			
A	learn to read in Sinugbuanong Bisaya	2.78	Important	High
B	learn to write in Sinugbuanong Bisaya	2.78	Important	High
C	Speak in Sinugbuanong Bisaya	2.78	Important	High
D	listen to the teacher speak Sinugbuanong Bisaya.	2.78	Important	High
2	How important do you think it is for key stage 1 teachers to...			
A	instruct in Sinugbuanong Bisaya	2.56	Important	High
B	create lessons related to life in Merida	2.78	Important	High
C	involve parents in writing stories in Sinugbuanong Bisaya	2.78	Important	High
3	What language does the Department of Education require students in grades 1-3 to learn in?			
A	English only	0	No Answer	Very Low
B	English and Filipino	0	No Answer	Very Low
C	Sinugbuanong Bisaya only	0	No Answer	Very Low
D	Sinugbuanong Bisaya with English and Filipino as a subject	4.00	Very Important	Very High
E	I don't know	0	No Answer	Very Low
4	What language do you think grade 1-3 students should learn in at school?			
A	English only	0	No Answer	Very Low
B	English and Filipino	1.75	Not Important	Very Low
C	Sinugbuanong Bisaya only	0	No Answer	Very Low
D	Sinugbuanong Bisaya with English and Filipino as a subject	4.00	Very Important	Very High
E	I don't know	0	No Answer	Very Low
5	Have you heard of mother tongue-based multilingual education?			
A	Yes	4.00	Very Important	Very High
B	No	1.00	Not Important	Very Low
AVERAGE		2.98	Important	High

Legend:

<i>Ranges</i>	<i>Description</i>	<i>Interpretation</i>
3.26-4.00	Very Important	Very High
2.51-3.25	Important	High
1.76-2.50	Somewhat Important	Low
1.00-1.75	Not Important	Very Low

Table 2 presents the extent of mother tongue-based instruction in terms of classroom instruction. It was revealed on the table that the extent of mother tongue-based instruction in terms of classroom instruction has an average mean of 2.98 which is interpreted as high. This means that the teacher uses mother tongue in teaching Math. This implies that the teacher implemented mother

tongue-based instruction as mandated by DepEd Order No. 028, series 2013 which the implementation of Mother Tongue-Based Instruction as medium of instruction in teaching Math, Science, Araling Panlipunan, MAPEH, MTB-MLE and Edukasyon sa Pagpapakatao. This order requires the first language of the learners to be used as the medium of instruction in all subject areas from pre-kindergarten through grade three with Filipino and English being taught as separate subjects (Department Order No. 74, s. 2009).

Table 3
Extent of Mother Tongue-Based Instruction in Terms of Implementation

No.	Statement	Weighted Mean	Description	Interpretation
1	Have you attended training on MTB-MLE implementation? If yes, how many days of training have you had in mother tongue-based multilingual education (MLE)?	2.75	3-4 Days	High
2	How prepared do you feel to implement mother tongue-based MLE in your classroom?	2.99	Prepared	Highly Prepared
3	How similar is mother tongue-based MLE to the way you taught last year?	2.60	Somewhat Similar	Highly Similar
4	How much extra work will it take for you to use mother tongue-based MLE in your classroom?	2.70	Some extra work	Highly Extra Work
5	How difficult will it be to implement mother tongue-based MLE in your classroom?	2.00	Somewhat difficult	With Low Difficulty
6	What is the likelihood that grade 1-3 teachers in your school will use mother tongue-based teaching next year?	3.00	Somewhat Likely	High
7	What is the likelihood that primary grade teachers in your school will use mother tongue-based teaching in five years?	2.30	Somewhat Likely	High
8	What is the likelihood that primary grade teachers in your school will use mother tongue-based teaching in ten years?	2.80	Somewhat Likely	High
AVERAGE		2.64	Important	High

Legend:

<i>Ranges</i>	<i>Description</i>	<i>Interpretation</i>
3.26-4.00	<i>Very Important</i>	<i>Very High</i>
2.51-3.25	<i>Important</i>	<i>High</i>
1.76-2.50	<i>Somewhat Important</i>	<i>Low</i>
1.00-1.75	<i>Not Important</i>	<i>Very Low</i>

Table 3 presents the extent of mother tongue-based instruction in terms of implementation. It was revealed on the table that the extent of mother tongue-based instruction in terms of implementation has an average mean of 2.64 which is interpreted as high. This means that teachers

believe in the importance of mother tongue-based instruction in the learning of the pupils. This implies that mother tongue-based instruction is easy in terms of understanding, and you can easily find instructional materials which will help in teaching using the language.

Table 4
Academic Achievement of Key Stage 1 Pupils in Math

RANGES	NO. OF LEARNERS	Percentage	Interpretation
80-84	20	26	Satisfactory
85-89	40	52	Very Satisfactory
90-95	17	22	Outstanding
TOTAL	77	100	

Legend:

Ranges	Interpretation
90-100	Outstanding
85-89	Very Satisfactory
80-84	Satisfactory
75-79	Fairly Satisfactory
Below 75	Did Not Meet Expectation

Table 4 presents the academic achievement of key stage 1 pupils in Math. It was revealed on the table that among the 77 key stage 1 pupils, 20 or 26% got a grade of 80-84 which is interpreted as satisfactory, 40 or 52% got a grade of 85-89 which is very satisfactory and 17 or 22% got a grade of 90-95 respectively in Math subject for the 2nd quarter of academic year 2022-2023. This means that all the pupils passed the subject for the 2nd quarter. This implies that using mother tongue-based instruction as medium of instruction in teaching Math, all of the pupils are able to master the concepts and they are able to understand the lesson with exemplary performance.

Table 5
Test of Relationship

Variables Correlated	r	Computed value or t	Table Value @.05	Decision on Ho	Interpretation
Academic Performance and Language Learning	0.66	2.962	1.223	Reject Ho	Significant Relationship
Academic Performance and Classroom Instruction	0.09	0.262	1.223	Accept Ho	No Significant Relationship (Negligible)
Academic Performance and Implementation	0.61	2.399	1.223	Reject Ho	Significant Relationship

Table 5 presents the test of the relationship between the extent of mother tongue-based instruction in terms of language learning, classroom instruction and implementation and academic achievement of key stage 1 pupils in Math. It was revealed on the table that the extent of mother tongue-based instruction in terms of language learning and academic achievement of key stage 1 pupils has a computed value or t of 2.962 which is greater than the tabular value of t of 1.223 at 0.05 level of significance, so null hypothesis is rejected. The r value of 0.66 shows a significant relationship between the two variables. This means that there is a significant relationship between the extent of mother tongue-based instruction in terms of language learning and academic achievement of key stage 1 pupils in Math. This implies that using mother tongue as medium of instruction in teaching Math, the key stage 1 pupils were able to understand the lesson conveyed during the teaching-learning process which results to an improve academic achievement in the subject.

Moreover, the table also presents the test of the relationship between the extent of mother tongue-based instruction in terms of classroom instruction and academic achievement of key stage 1 pupils in Math. It was revealed on the table that the extent of mother tongue-based instruction in terms of classroom instruction and academic achievement of key stage 1 pupils has a computed value or t of 0.262 which is lesser than the tabular value of t of 1.223 at 0.05 level of significance, so null hypothesis is accepted. The r value of 0.09 shows a negligible or has no significant relationship between the two variables. This means that there is no significant relationship between the extent of mother tongue-based instruction in terms of classroom instruction and academic achievement of key stage 1 pupils in Math. This implies that there might be other factors which affect the performance of the pupils in Math.

Finally, the table presents the test of the relationship between the extent of mother tongue-based instruction in terms of implementation and academic achievement of key stage 1 pupils in Math. It was revealed on the table that the extent of mother tongue-based instruction in terms of implementation and academic achievement of key stage 1 pupils has a computed value or t of 2.399 which is greater than the tabular value of t of 1.223 at 0.05 level of significance, so null hypothesis is rejected. The r value of 0.61 shows a significant relationship between the two variables. This means that there is a significant relationship between the extent of mother tongue-based instruction in terms of implementation and academic achievement of key stage 1 pupils in Math. This implies that the key stage 1 teachers strictly implemented the use of mother tongue as medium of instruction in teaching Math.

Table 6
Challenges in the Implementation of MTB-MLE

No.	Statement	Weighted Mean	Description	Interpretation
A	Challenges Encountered by the Teachers in Teaching Mother Tongue-Based Mathematics in terms of Content			
1	Choosing or selecting the teaching strategies, classroom activities and instructional materials in imparting the Most Essential Learning Competencies in Mathematics (MELC) using MTB.	4.05	Agree	High
2	Preparing set of inquiries related to the upcoming lesson that would promote pupil engagement and enhance their MELC in Mathematics using MTB instruction.	3.95	Agree	High
3	Selecting relevant and specific content of the lesson that will motivate the pupils to do practice solving in Mathematics using MTB.	3.95	Agree	High
4	Preparing specific and organized lesson plan with MELC emphasis as his/her guide in a smooth facilitation of the lesson in Mathematics using MTB instruction.	4.05	Agree	High
5	Being updated and prepared with the changes or shifts in instructional practices in teaching MELC in Mathematics using MTB instruction.	3.95	Agree	High
6	Preparing with the necessary knowledge and skills in teaching the MELC in Mathematics using MTB instruction.	3.70	Agree	High
7	Integrating current and relevant issues in teaching the MELC in Mathematics using MTB instruction.	4.00	Agree	High
8	Utilizing current research in teaching the MELC in Mathematics using MTB instruction.	4.00	Agree	High
AVERAGE		3.52	Agree	High
B	Challenges Encountered by the Teachers in Teaching Mother Tongue-Based Mathematics in terms of Delivery			
9	Preparing and organizing well to use appropriate strategies in teaching Mathematics using MTB instruction.	4.70	Strongly Agree	Very High
10	Confidence and effectiveness of the teacher to communicate the Mother Tongue instruction and can generate pupils' enthusiasm in teaching Mathematics.	4.50	Strongly Agree	Very High
11	Demonstrating pedagogical approach in teaching Mathematics using MTB instruction.	4.00	Agree	High
12	Preparing a simplified and effective instructional material that can generate the	4.00	Agree	High

	students to make inquiries in Mathematics using MTB instruction.			
13	Preparing to impart the lesson in Mathematics effectively that can engage pupils and facilitated class discussion in Mathematics using MTB instruction.	3.90	Agree	High
14	Equipping the teacher on effective and collaborative learning techniques in teaching Mathematics using MTB instruction.	3.70	Agree	High
15	Preparing to use technology effectively to enhance pupils learning in teaching Mathematics using MTB instruction.	4.20	Agree	High
16	Organizing and systematizing in the presentation of the lesson that help pupils to clearly understand the topic in Mathematics using MTB instruction.	4.70	Strongly Agree	Very High
AVERAGE		4.21	Agree	High

Legend:

Ranges	Description	Interpretation
4.21-5.00	Strongly Agree	Very High
3.41-4.20	Agree	High
2.61-3.40	Moderately Agree	Moderate
1.81-2.60	Disagree	Low
1.00-1.80	Strongly Disagree	Very Low

Table 6 presents the extent of challenges in the implementation of mother tongue-based instruction in teaching Math in terms of content and delivery. It was revealed on the table that the extent of challenges encountered by key stage 1 teachers in the implementation of mother tongue-based instruction in teaching Math in terms of content has an average mean of 3.52 which is interpreted as high. This means that content implementation of using mother tongue as medium of instruction in teaching Math has high extent of challenges because not all teachers understands or can speak the language fluently for there are teachers who are assigned to a community with different mother tongue. This implies that there are topics in the content in Math where it cannot be translated with the existing mother tongue of the pupils. Thus, making it difficult for the teacher to accurately convey the lesson and in choosing the appropriate mother tongue of the word.

Moreover, the table also presents the extent of challenges in the implementation of mother tongue-based instruction in teaching Math in terms of the delivery of the lesson. It was revealed on the table that the extent of challenges encountered by key stage 1 teachers in the implementation of mother tongue-based instruction in teaching Math in terms of the delivery of the lesson has an average mean of 4.21 which is interpreted as high. This means that key stage 1 teacher agree that they encountered challenges in the delivery of the lesson using mother tongue as medium of instruction. This implies that not all pupils have a similar mother tongue in learning the lessons in Math. There are those who cannot understand the terms used in their mother tongue which make it difficult for them to understand the lesson.

IV. Conclusion

The study revealed a significant relationship between the extent of mother tongue-based instruction in terms of language learning and implementation and academic achievement in Math. On the other hand, no significant relationship exists between the extent of mother tongue-based instruction in terms of classroom instruction and academic achievement in Math. Moreover, key stage 1 teachers encountered challenges in teaching Math using mother tongue as medium of instruction in the manner that not all pupils have the same mother tongue used at home and that there are terms in Mathematics which are difficult to understand when it is used in the lesson. Thus, the study shows that implementation of mother tongue as medium of instruction in teaching Math to key stage 1 pupils has emerged a very satisfactory academic performance despite of the challenges encountered by the teachers.

V. Recommendations

1. The proposed intervention plan formulated should be utilized by the teachers to further improve the implementation of mother tongue-based instruction in teaching Math.
2. Teachers should be resourceful enough to gather instructional materials and other learning resources which will aid in teaching Math using mother tongue as medium of instruction.
3. School Heads should conduct capability building activities to teachers to improve or enhance the implementation of mother tongue based as medium of instruction in teaching Math.
4. Teachers should provide vocabulary knowledge to the key stage 1 pupils in their mother tongue which will be useful in their teaching or in the delivery of the lesson.
5. Teachers should learn to craft differentiated and varied contextualized instructional materials to be utilized by the pupils during the teaching-learning process to improve the implementation of mother tongue in teaching Math.
6. School Heads should conduct regular monitoring of teachers in the delivery of the lesson in Math using mother tongue as medium of instruction.
7. School Heads should encourage and provide technical assistance for the proper implementation of mother tongue-based instruction in teaching Math; and
8. Future researchers should replicate this study to include different locales and include different variables aside from the mentioned in this study.

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She was teaching for two years as volunteer kindergarten teacher at Puerto Bello Elementary School in the year 2010-2012 and teaching one year in private school at St. Therese Montessori School in the year 2013-2014. In the year 2015 she was hired in the DepEd and currently teaches Grade 1 pupils at Puerto Bello Elementary School. She also attended series of webinars/seminars and trainings to increase his professional growth as a teacher.