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Research Article

Learners' Level of Difficulty in Using Mother Tongue-Based Instruction on Mathematics and Metrobank-MTAP-DepEd Math Challenge

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ABSTRACT

The main thrust of the study was to determine the learners' level of difficulty in using Mother Tongue Based Instruction on the Metrobank-MTAP-DepEd Math Challenge to their Mathematics and MTAP performances of 195 Grades 3 learners in public elementary schools of Tubigon East and West Districts, Tubigon, Bohol. This research used quantitative methods through descriptive and correlational designs using the survey questionnaire that was used to collect the data from Grade 3 learners in 17 public elementary schools in Tubigon East District and 14 public elementary schools in Tubigon West District. This also included all the primary schools with multi-grade classes in the said districts. The study used the Mann Whitney U Test to test the significant difference between the learners' level of difficulty in using Mother tongue-based instruction on the Metrobank-MTAP-DepEd Math Challenge and the learners' profile. Results of the investigation unfolded that there is a significant relationship between the level of difficulty in using Mother tongue-based instruction on the Metrobank-MTAP-DepEd Math Challenge and the learners' profile with a p-value of .000. The result of the study led to the conclusion that using the mother tongue in teaching Mathematics significantly impacts pupils' performance in the Metrobank-MTAP-DepEd Math Challenge competition, often leading to lower scores; where the competition's questions are presented in English, a language quite different from the student's first language, "Sinugbuanong Binisaya." Thus, this discrepancy creates a mismatch between the language used in the classroom and the medium of instruction in the competition. It is recommended that the organizers and administrators review the use of Mother Tongue-Based instruction. It is also recommended to have more intensive training and seminars for the Mathematics teachers that relate to the Metrobank-MTAP-DepEd Math Challenge. Furthermore, review materials may be developed and provided to the Grades 1 to 3 teachers.

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Introduction

Language is the medium through which all humans connect, serving as the primary means of conveying ideas and the foundation of human civilization. In formal education, language plays a crucial role in communication and understanding within the classroom, facilitating active interactions between teachers and students, which are essential for effective learning. When communication flows smoothly, students achieve greater comprehension, helping to realize learning objectives. Optimal understanding and learning occur when the language of instruction is one that students are familiar with and comfortable using to express their thoughts and ideas.

In the Philippines, English is the primary language of instruction from primary education through higher education. As a result, many Filipinos have developed fluency and proficiency in English, both in verbal and written communication. However, despite this proficiency, the country has consistently ranked lower in international achievement tests, such as the Programme for International Student Assessment (PISA). In contrast, countries that perform well in these assessments typically use their native languages as the official medium of instruction in their educational systems. Using English as the primary language of instruction can disadvantage public primary school pupils, as it is often perceived as foreign. Many students struggle to express themselves and understand new concepts in English, leading to frustration and, in some cases, dropout. To build a strong educational foundation and encourage participation, learners should start their education in a language they understand. Beginning with the mother tongue supports cognitive development and facilitates the transition to additional languages like Filipino and English.

Mathematics is one of the subjects in grade school that is believed to be more effectively taught using the mother tongue, as students can better understand concepts when

presented in a familiar language. However, the use of the mother tongue in teaching Mathematics raises concerns about its effectiveness as the language of instruction. Many complex mathematical concepts and terms are traditionally expressed in English, making translation into the mother tongue challenging. Additionally, there is a lack of resources that effectively translate these subjects into local languages or dialects familiar to most students (Casinillo, 2022).

The Mathematics Teachers Association of the Philippines (MTAP), now officially known as the Metrobank-MTAP-DepEd Math Challenge (MMC), is a well-established Mathematics competition in the Philippines. Held annually, this competition enhances the competitiveness of elementary and high school students in Mathematics. As the longest-running math competition in the country, it attracts over half a million participants in nationwide elimination rounds each year, drawing students from both private and public schools. The competition includes all levels, beginning from grades 1 to 3 at the elementary level. Moreover, Mathematics competitions serve as platforms for students to demonstrate their skills and enhance their mathematical abilities. According to Galleteo, these competitions contribute to the multidimensional development of mathematically gifted students, fostering self-directed learning and academic excellence. Baker et al. (2022) highlight that participation in math contests increases students' interest and enjoyment in the subject, ultimately promoting mathematical literacy among the youth.

The integration of the mother tongue as a medium of instruction is based on the principle that students learn best when taught in their native language. This approach is expected to enhance comprehension, reduce the cognitive load associated with language barriers, and build a strong foundation for further learning. However, Mathematics, being a universal language with specific terminologies and symbols, presents unique challenges when translated

into local dialects. This study aims to investigate whether the use of the mother tongue in teaching mathematical concepts affects learners' ability to grasp complex ideas and perform well in the MMC. It seeks to identify specific areas of difficulty and determine whether these challenges arise due to language translation issues, conceptual understanding, or other factors.

In the world of teaching, developing well-rounded learners begins in the early years of education, requiring appropriate teaching methods and strategies, particularly in the choice of the medium of instruction. Lev Vygotsky's Sociocultural Theory underscores the significant contributions of society to individual development, emphasizing the interaction between learners and the culture in which they live. This theory suggests that learning is largely a social process and highlights that knowledge derived from a student's cultural background should form the basis of teaching and learning. The learner's mother tongue plays a crucial role in cognitive development, helping children understand and apply ideas more effectively.

Vygotsky's Sociocultural Theory emphasizes the role of social interaction and cultural context in cognitive development. According to this theory, learners acquire knowledge through communication and interaction with more knowledgeable individuals, such as teachers, peers, and parents. In the context of your study, this theory suggests that pupils' exposure to the Metrobank-MTAP-DepEd Math Challenge and their Mathematics Performance are influenced by their interaction with mentors, their language of instruction, and the support system they receive. The use of Mother Tongue-Based Instruction in teaching Mathematics may affect how pupils internalize mathematical concepts, especially if they struggle with unfamiliar translations of mathematical terms.

In addition, Jim Cummins' Common Underlying Proficiency Theory suggests that skills and knowledge acquired in one language can transfer to another. This theory is particularly relevant in multilingual education, where learners develop proficiency in their mother tongue before transitioning to additional

languages like English or Filipino. The level of difficulty pupils experience in using Mother Tongue-Based Instruction in the Metrobank-MTAP-DepEd Math Challenge can be analyzed through this theory, as it explains how linguistic proficiency in one language (mother tongue) affects their ability to understand mathematical concepts, especially when shifting to English-based assessments in the competition.

In connection, John Sweller's Cognitive Load Theory explains how learners process information and how excessive cognitive load can hinder learning. This theory is relevant when analyzing learners' level of difficulty in using Mother Tongue-Based Instruction in the Metrobank-MTAP-DepEd Math Challenge. If translating mathematical concepts into the mother tongue adds an extra layer of cognitive processing, it may overload students' working memory, making it harder for them to grasp complex ideas and perform well in the competition. The theory suggests that effective instruction should minimize unnecessary cognitive load by using clear and familiar language, which is crucial in Mathematics education.

The appropriateness of the medium of instruction in the early years of education plays a critical role in shaping young learners' skills, particularly in Mathematics. As a subject with broad real-life applications, Mathematics requires a strong foundation to ensure quality learning experiences. The 1987 Philippine Constitution, Article XIV, Section 1, emphasizes the State's commitment to protecting and promoting the right to quality education at all levels. In line with this, Republic Act No. 10533, or the Enhanced Basic Education Act of 2013, strengthens the Philippine Basic Education System by extending the years of schooling and improving the curriculum. DepEd Order No. 74, Series of 2009, mandates the use of the mother tongue as the primary medium of instruction from preschool to at least Grade 3, citing research that students develop cognitive, linguistic, and academic skills more effectively when learning in their first language. Similarly, DepEd Order No. 16, Series of 2012, institutionalized MTB-MLE in all public schools starting in Grade 1, ensuring that students' home languages are used for literacy and instruction.

In Mathematics education, the implementation of MTB-MLE presents both opportunities and challenges. While it promotes better comprehension, the translation of mathematical terms into local dialects remains a significant hurdle. The Metrobank-MTAP-DepEd Math Challenge, as an annual competition, aims to improve the quality of Mathematics education in the Philippines by encouraging excellence and mastery among students. This study seeks to determine the impact of Mother Tongue-Based Instruction on students' performance in this competition and to provide insights into how language policies influence academic achievement. By addressing these issues, the research aims to contribute to the ongoing efforts to enhance the effectiveness of language policies in education and support students in achieving their full potential.

Understanding the level of difficulty faced by learners in this context is crucial for educators and policymakers. The findings of this study will provide insights into the effectiveness of Mother Tongue-Based Multilingual Education (MTB-MLE) in Mathematics and its implications for competitive assessments. If students encounter significant difficulties due to language-related issues, it may necessitate a reevaluation of the current implementation strategies or the development of supplementary materials and training for teachers. On the other hand, if the use of the mother tongue proves beneficial, it could reinforce existing educational reforms and encourage further integration of local languages into other subjects and educational programs. Ultimately, this study is motivated by the need to determine the level of difficulty experienced by learners in using Mother Tongue-Based Instruction in the Metrobank-MTAP-DepEd Math Challenge in the public elementary schools of Tubigon East and Tubigon West Districts, Tubigon, Bohol. It aims to contribute to the broader discourse on the role of language in education and its impact on students' academic performance. By focusing on the MMC, a highly regarded competition, the research highlights the practical implications of language policies on student outcomes in a real-world context. The results will not only inform future curricular and instructional decisions but also support the goal of providing

quality and inclusive education for all learners, regardless of their linguistic background. The study hopes to guide teachers and school administrators in maximizing the benefits of the mother tongue in primary education, particularly in Mathematics, and to provide insights into the learners' level of difficulty in using Mother Tongue-Based Instruction in the Metrobank-MTAP-DepEd Math Challenge.

Statement of the Problem

The main thrust of the study was to determine the learners' level of difficulty in using Mother Tongue Based Instruction on the Metrobank-MTAP-DepEd Math Challenge to their Mathematics and MTAP performances of Grades 3 learners in public elementary schools of Tubigon East and West Districts, Tubigon, Bohol.

Specifically, the study sought to determine the following:

1. What is the profile of the pupils in terms of:
 - 1.1 Metrobank-MTAP-DepEd Math Challenge Performance;
 - 1.2 Mathematics Performance; and
 - 1.3 Exposure in Metrobank-MTAP-DepEd Math Challenge?
2. What is the learners' level of difficulty in using Mother Tongue Based Instruction on the Metrobank-MTAP-DepEd Math Challenge?
3. Is there a significant difference between the learners' level of difficulty in using Mother tongue-based instruction on the Metrobank-MTAP-DepEd Math Challenge and learners' profile?

The Null Hypothesis

There is no significant difference between the learners' level of difficulty in using Mother tongue-based instruction on the Metrobank-MTAP-DepEd Math Challenge and the learners' profile.

Methods

Design

Considering the main purpose of the study, descriptive survey research was used. A survey design was used to gather data from a sample or the entire population of people to describe

the attitudes, opinions, behaviors, or characteristics of the population. A survey was to be used to collect the data from Grade 3 learners in 17 public elementary schools in Tubigon East District and 14 public elementary schools in Tubigon West District. This also included all the primary schools with multigrade classes in the said districts.

Environment and Participants

The study was conducted on all 195 Grades 3 learners who became competitors of the Metrobank-MTAP-DepEd Math Challenge competitors in all public primary and elementary schools in the District of Tubigon East and Tubigon West.

Instrument

Through the quantitative component of this study, descriptive statistics was used to understand the data that may determine the learners' level of difficulty in using Mother Tongue Based Instruction on the Metrobank-MTAP-DepEd Math Challenge to their Mathematics and MTAP performances. The researcher used a survey questionnaire to gauge the learners' level of difficulty in using Mother Tongue Based Instruction on the Metrobank-MTAP-DepEd Math Challenge.

The questionnaire was drafted with guidance from the thesis adviser and statistician. It is composed of two (2) parts. The first part consists of the profile of the pupils namely: A. Metrobank-MTAP-DepEd Math Challenge Performance; B. Mathematics Performance; and C. Exposure to Metrobank-MTAP-DepEd Math Challenge. The second part is the learner's level of difficulty in using Mother Tongue-Based Instruction on the Metrobank-MTAP-DepEd Math Challenge which consists of 10 questions translated into Sinugbuanong Binisaya. It was pilot-tested and validated using the Cronbach's alpha. Moreover, the researcher also conducted an interview to the learners to get the other important data. The interview was conducted on

125 learners and asked about their comments on the Metrobank-MTAP-DepEd Math Challenge.

Procedure

In conducting this study, the researchers gathered the data with the use of questionnaires. The questionnaires were formulated by the researchers. These were distributed to the Grades 3 learners of Tubigon East and Tubigon West districts after the researchers sent the letter to the Schools Division Superintendent of Division of Bohol. A letter also addressed to the respective Schools District Supervisor and school principals or cluster heads of the elementary schools to request permission to conduct a study in the said districts. After the approval, the researchers distributed the questionnaires and immediately retrieved after answering. After gathering the data, the researchers treated the data statistically.

Statistical Treatment

To determine the profile of the pupils in terms of Metrobank-MTAP-DepEd Math Challenge Performance, Mathematics Performance and Metrobank-MTAP-DepEd Math Challenge, the percentage formula was used with regards to frequency.

To determine the level of difficulty in using Mother Tongue Based Instruction on the Metrobank-MTAP-DepEd Math Challenge, the weighted mean was used.

Moreover, to determine the significant difference between the learners' level of difficulty in using Mother tongue-based instruction on the Metrobank-MTAP-DepEd Math Challenge and the learners' profile, the Mann Whitney U Test was used.

Results and Discussion

The following deals with the presentations, analysis and interpretation of the data based on the results gathered.

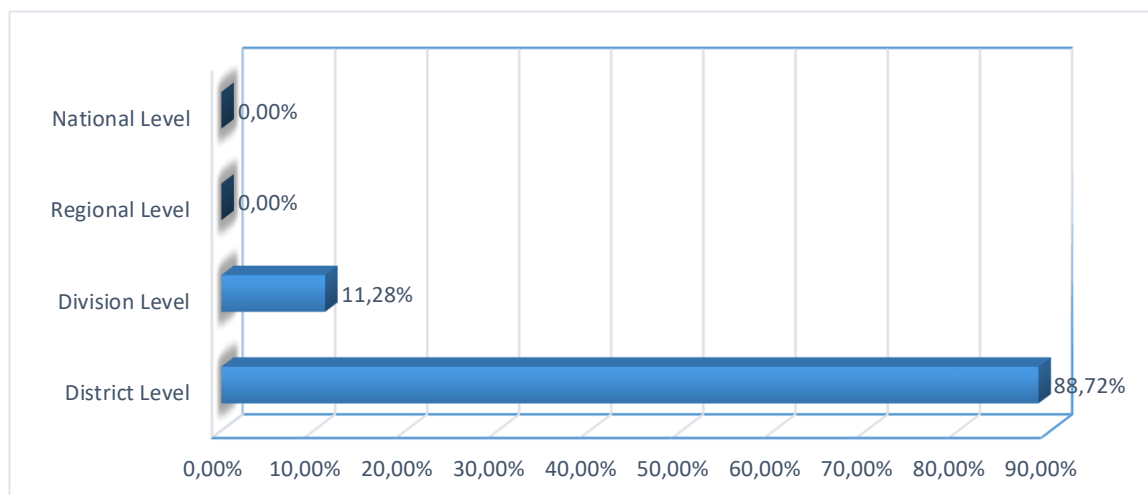


Figure 1. Pupils' Level of Metrobank-MTAP-DepEd Math Challenge Competition (N=195)

This graph reveals that majority of the pupils have gone in the District Level with 88.72% or the total of 173 respondents, while only 11.28% (22 respondents) have gone in the Division Level. It also shows that there are no pupils who have gone to the Regional Level and National Level. As stipulated in DepEd

Memorandum No. 002, series 2018, only Grades 6 and 10 learners can participate in the Regional and National Finals. This proves that no Grades 1 to 3 participants can move up after Division level.

Figure 2 shows the score of the pupils in the Metrobank-MTAP-DepEd Math Challenge.

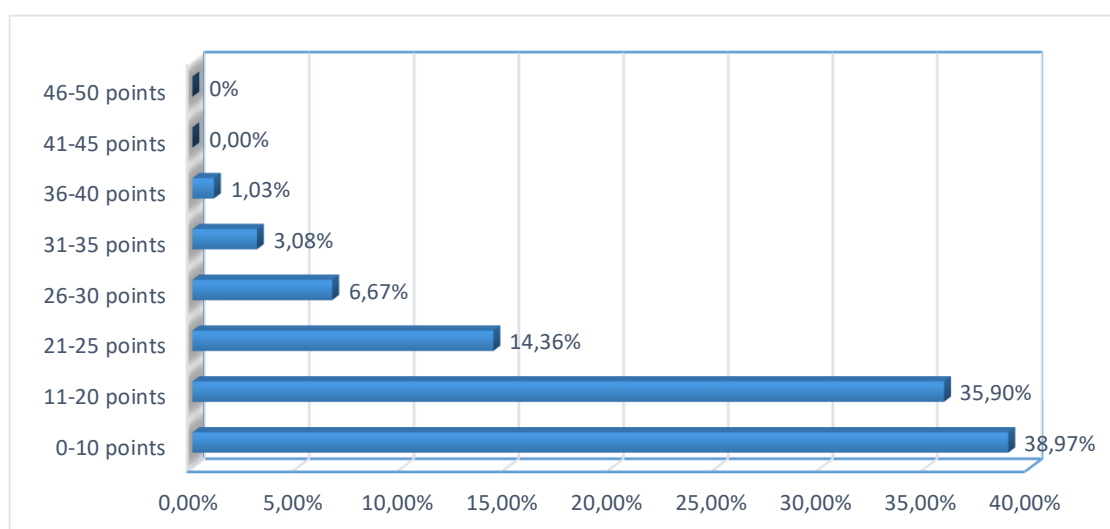


Figure 2. Pupils' Score in Metrobank-MTAP-DepEd Math Challenge Competition (N=195)

Based on the data, score ranging from 0-10 points has the highest number of responses, followed by the score ranging from 11-20 points. This only proves that there is a problem encountered by the pupils who joined the Metrobank-MTAP-DepEd Math Challenge. It also exposes that only few pupils got a high score on the competition.

Thus, according to John Sweller's Cognitive Load Theory, if translating mathematical concepts into the mother tongue adds an extra layer of cognitive processing, it may overload students' working memory, making it harder for them to grasp complex ideas and perform well in the competition. The theory suggests

that effective instruction should minimize unnecessary cognitive load by using clear and familiar language, which is crucial in Mathematics education.

The overall academic performance of the pupils in Mathematics subject wherein Mother Tongue is used as a medium of instruction is reflected in Figure 3.

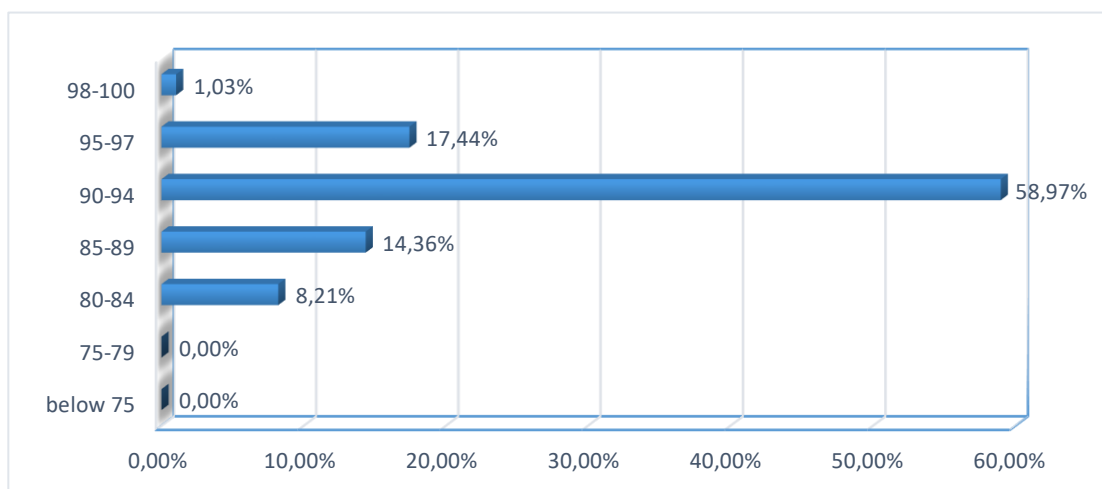


Figure 3. Pupils' Academic Performance in Mathematics (N=195)

This graph indicates that majority of the pupils have a grade ranging 90-94, which is 58.97% or 115 responses among the 195 pupil respondents. In form 138, grades ranging 90-100 belong to Outstanding description. As stated in DepEd Order No. 36, series 2016, Academic Excellence Award is given to learners as "With Honors" with average grade of 90-94%. It can be revealed as well that pupils who joined the Metrobank-MTAP-DepEd Math Challenge perform well in Mathematics subject.

Ricablanca (2014) explains that pupils' achievement in the mother tongue-based

instruction was significantly higher than the achievement of those who were in the English instruction. This supports the indication that the pupils have good grades in Mathematics because the media of instruction used inside the classroom is mother tongue; while their scores in Metrobank-MTAP-DepEd Math Challenge is low because the medium of instruction is English.

Figure 4 shows the pupils' level of difficulty in the Metrobank-MTAP-DepEd Math Challenge.

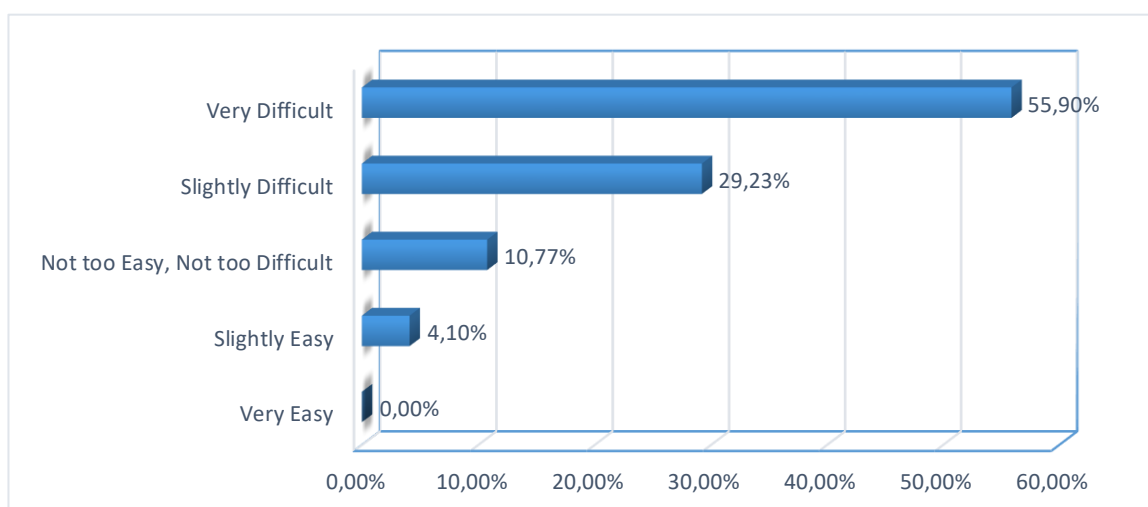


Figure 4. Pupils' Level of Difficulty in Metrobank-MTAP-DepEd Math Challenge (N=195)

This figure reveals that most of the pupils find it very difficult (55.90%) to answer the questions in Metrobank-MTAP-DepEd Math Challenge. On the other hand, 0% said that MMC is very easy. There are 29.23% of the pupils believed that MMC is slightly difficult, 10.77% who said that it is not too easy, not too difficult, and only 4.10% said that the test is slightly easy. This only means that most of the pupil respondents find it difficult to understand the language being used in Metrobank-MTAP-DepEd Math Challenge.

In connection, most of the respondents strongly agreed that *"the language used is hard to understand"* with 52.30% responses. This is one of the reasons why the test is very difficult for the learners. The learners also agreed strongly that *"some questions are different from the lessons"* and *"the items are too long"*. Further, they agreed also that *"some questions are not reviewed"* and *"preparation is not enough"*. This is supported by the study of Siniguan (2017) where the researcher expresses that the learner's difficulties in solving mathematical problems are on the inability to translate problem into mathematical form and inability to use

correct Mathematics. The language used in the test triggers their difficulties for they can't comprehend and understand the problem itself.

On the other hand, he added that many learners, despite a good understanding of mathematical concepts are inconsistent at analyzing and computing. They make errors because they misread or carry numbers incorrectly.

It only reveals that learners disagree on the effectiveness of Mother-tongue Based instruction to the performance of MMC. They are the chosen pupils to answer the question, they are the ones who have experienced the difficulty of the test, and they have their own words to describe the test as well. Though the overall objective of this competition is to contribute in improving the quality of Mathematics education in the Philippines (Metrobank Foundation, Inc.), there must be a consideration.

Table 1 is for the relationship between the level of difficulty in using Mother tongue-based instruction on the Metrobank-MTAP-DepEd Math Challenge and the learners' profile.

Table 1. Relationship Between the Level of Difficulty in Using Mother Tongue-Based Instruction on the Metrobank-MTAP-DepEd Math Challenge and the Learners' Profile

N=195						
Variables		Mann-Whitney U Test	p-value	Level of Sig	Decision	Interpretation
Profile	Level of Difficulty	-4.793	.000	0.05	Reject Ho	Significant

It can be deemed in the table that the relationship between the level of difficulty in using Mother tongue-based instruction on the Metrobank-MTAP-DepEd Math Challenge and the learners' profile is significant with a p-value of .000. This means that the difficulty level of the Metrobank-MTAP-DepEd Math Challenge affects the performance of the learners in Mathematics. This implies that there is a problem on the guidelines of the test, specifically on its level of difficulty, its congruence to the lessons in Grade 3, as well as the medium of instruction used.

According to Cummins (2000) as cited by Casinillo (2022), when children continue to

develop their abilities in two or more languages throughout their primary school years, they gain a deeper understanding of language, and use it effectively. They have more practice in processing language, especially when they develop literacy in both, and they are able to compare and contrast the ways in which their two languages organize reality. This is true that learning of the pupils should be gradual but continuous. There is no need to force them to absorb the concepts immediately. The gradual introduction of the second or third languages can get better results. In the light of the critical period hypothesis (Hummel, 2014), MTB-MLE may cause many people to miss these privileges

and be robbed of the opportunity to be at pace with the globalized world.

Added by Casinillo (2022), another purpose of MTB-MLE is sustainable national development. Since MTB-MLE develops individuals who have solid mother-tongue foundation, it can prevent the death of many indigenous languages. Further, since language and culture

coexist, cultural heritage is also preserved. This fact solidifies the identity of the nation. A country producing intellectually competent learners enjoys high productivity resulting to economic stability.

Moreover, Table 2 presents the data on the responses of the learners on their interview.

Table 2. Pupils' Response about the Administration of Metrobank-MTAP-DepEd Math Challenge

N=125			
Question: Unsay masulti nimo sa MTAP? (What can you say or what are your thoughts about the administration of Metrobank-MTAP-DepEd Math Challenge?)			
Number of Pupils	Responses	Related Response	Total Number of Responses
11	<i>English ang pangutana maong lisod</i>	The questions are hard to understand because the English language was used.	64
8	<i>Lisod kay di ko kasabot sa question</i>		
9	<i>English man. Lisod sabton</i>		
7	<i>Wa ko kasabot sa uban kay in-English</i>		
10	<i>English man to</i>		
3	<i>Wa ko kasabot sa uban questions</i>		
6	<i>Kasagaran kay lisod sabton kay dili binisaya</i>		
3	<i>Dili binisaya. Lisod kaayo</i>		
7	<i>English tanan questions</i>	English language must be used in our class in Math time.	3
2	<i>English unta ang gamiton inig klase sa Math</i>		
1	<i>Dapat mag-in-English sa room.</i>	50 items is too long.	4
1	<i>Taas kayo.</i>		
1	<i>50 taman. Lisod</i>		
1	<i>Dugay mi mahuman kay taas</i>		
1	<i>Lisod unya 50 pa gyud taman.</i>		
4	<i>Unta binisaya ang gamiton sa test</i>	MTB must be used.	26
6	<i>MTB man mi sa room dapat ang test pud</i>		
5	<i>Unta binisaya</i>		
5	<i>Lisod kay Bisaya among gamit sa room unya ang test kay dili</i>		
4	<i>Dapat bisaya</i>		
2	<i>Bisaya unta</i>	Questions are not for Grade 3	8
5	<i>Dili man to pang Grade 3</i>		
3	<i>Ang mga pangutana kay dili pang Grade 3</i>		
5	<i>Wala man to gi-discuss ang ubang pangutana</i>	Some questions were not discussed yet.	11
4	<i>Wa pa mi kahibaw sa ubang questions</i>		
2	<i>Lisod kay wa pa mi natudloan adto.</i>	I like it because it is challenging.	9
2	<i>Sayon ra gamay.</i>		
7	<i>Ganahan ko kay challenging</i>	TOTAL	125

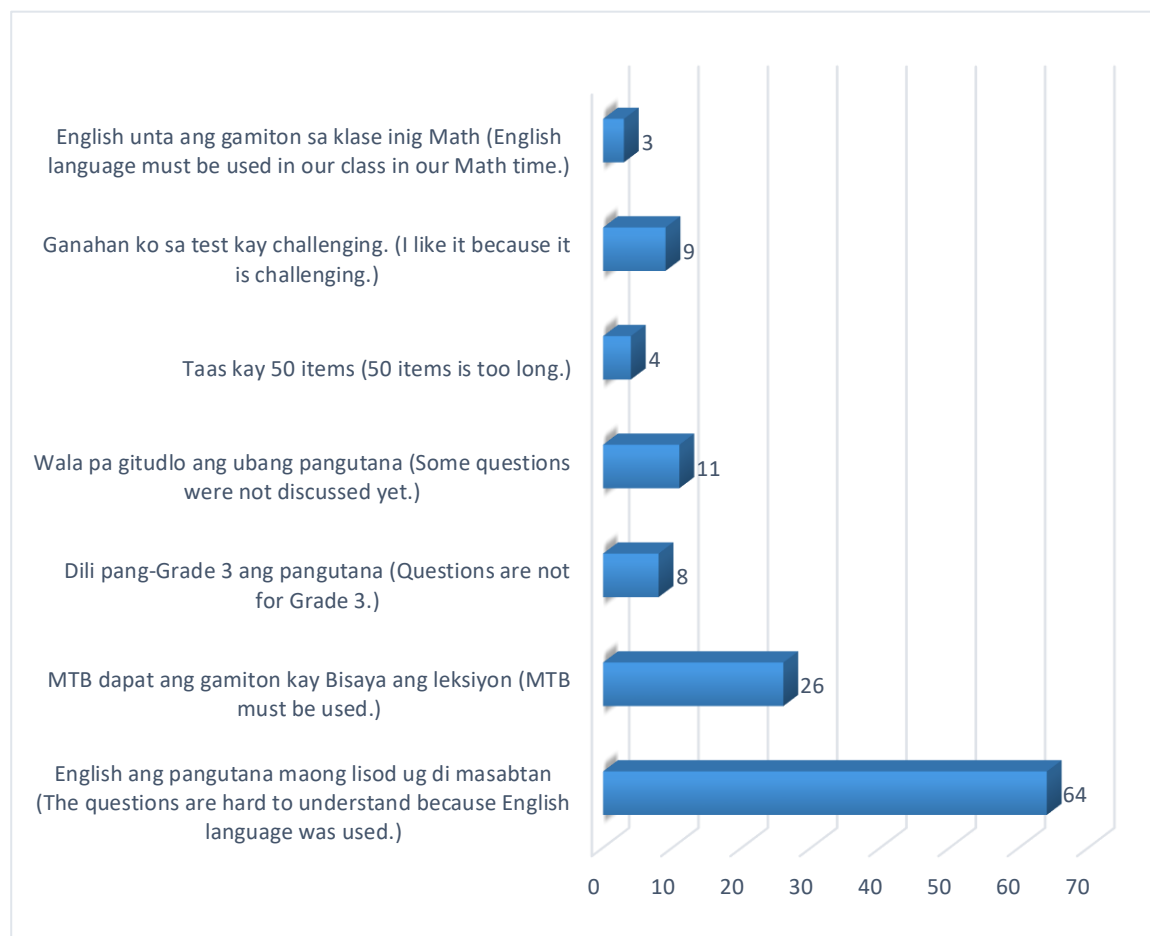


Figure 5. Pupils' Response on Metrobank-MTAP-DepEd Math Challenge (N = 125)

Based on the result of the interview of the learners in Figure 5, out of 195 pupil respondents, 125 of them gave their suggestions and comments on the conduct of MMC. There are 64 of them who said that the question is difficult and hard to understand because it uses English language (*English ang pangutana maong lisod ug di masabtan*). 8 of them said that the questions are not suitable for Grade 3 pupils (*dili pang-Grade 3 ang pangutana*), and 11 believed that some of the questions were not yet discussed (*wala pa gitudlo ang ubang pangutana*). Conversely, there are still 9 pupils like the test because it is challenging (*ganahan ko sa test kay challenging*).

Moreover, there are 26 pupils who suggested that the questions in MMC must be in MTB because the lessons inside the classroom are also in MTB instruction (*MTB dapat ang gamiton kay Bisaya ang leksyon*). On the contrary, there are also 3 pupils who proposed that

English language will be used in teaching Mathematics (*English unta ang gamiton sa klase inig Math*). This is supported from the study of Pillos (2022), which states that the use of Mother Tongue as a medium of instruction in teaching and learning improves learner's knowledge comprehension and strategies in solving problems; and, it is equally effective as the use of the English Language. Furthermore, the findings of existing literatures in which mother-tongue based approach is effective not only in getting the interest of students in the lesson but as a springboard in teaching new mathematical concepts and principles and in deepening student understanding on why mathematical operations or processes work.

Findings

After a thorough analysis of the data, the researcher comes up with the following findings:

1. Most of the pupil respondents only reached the district level on their Metrobank-MTAP-DepEd Math Challenge. Further, most of them also have a Mathematics grade of 90-100. However, majority of them have low scores in the Metrobank-MTAP-DepEd Math Challenge.
2. It can be observed that most of the pupils find it very difficult to answer the questions in Metrobank-MTAP-DepEd Math Challenge with 55.90% or 109 pupils out of 195. On the other hand, 0% said that MMC is very easy. There are 57 pupils or 29.23% of the pupils believed that MMC is slightly difficult, 10.77% who said that it is not too easy, not too difficult, and only 4.10% said that the test is slightly easy. This only means that most of the pupil respondents find it difficult to understand the language being used in Metrobank-MTAP-DepEd Math Challenge.
3. There is a significant relationship between the level of difficulty in using Mother tongue-based instruction on the Metrobank-MTAP-DepEd Math Challenge and the learners' profile.

Conclusion

Based on the findings of the study, there is no congruence between the learners' performance in Mathematics and the Metrobank-MTAP-DepEd Math Challenge (MMC). Most respondents find it very difficult to answer the questions in the MMC, and the use of the mother tongue in teaching Mathematics significantly impacts pupils' performance in the competition. It can be concluded that there is a mismatch between the language used in the classroom and the medium of instruction in the competition. The competition's questions are presented in English, a language quite different from the students' first language, "Sinugbuanong Binisaya."

This language gap may hinder students' ability to fully comprehend and analyze mathematical problems during the competition. The transition from learning Mathematics in their mother tongue to solving complex problems in English may cause cognitive overload, affecting their problem-solving efficiency. Therefore, it

is essential to implement strategies that gradually bridge this linguistic gap, such as bilingual instruction or exposure to mathematical concepts in both languages.

Recommendations

Based on the conclusion drawn from the study, the researcher comes up with recommendations to utilize the findings of the study.

1. Metrobank-MTAP-DepEd Math Challenge Organizers should give more attention to the implementation of the K to 12 curriculum, which uses Mother Tongue-Based Instruction. They could develop and provide review materials, such as books, with translations from Visayan to English for teachers.
2. The language used in the competition should be reviewed and clarified.
3. School Administrators should offer continued and intensive support to teachers. This support can include providing review materials and conducting training sessions focused on the Metrobank-MTAP-DepEd Math Challenge, aimed at enhancing the skills of both teachers and learners.
4. Teachers need to conduct thorough reviews. Participating in relevant training programs, if available, would also be beneficial. They should provide students with ample review materials to help them develop their knowledge and skills.

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