

MTB-MLE as a Mode of Instruction and Pupils' Academic Performance



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ABSTRACT: The study "MTB-MLE as a Mode of Instruction and Pupils' Academic Performance" investigated the positive impact of Mother Tongue-Based Multilingual Education (MTB-MLE) on grade three pupils in Naawan District during the 2023-2024 academic year. This study used a questionnaire to gather data and utilized a quantitative correlational method. The findings emphasized the importance of MTB-MLE integration in shaping language skills, cognitive abilities, socio-cultural awareness, and academic achievement. This study concluded that MTB-MLE positively affects language development, cognitive skills, socio-cultural awareness, and academic performance. It concluded that Academic performance in MTB is positively correlated to academic performance in Filipino, Math, and Science. The study advocated for sustained MTB-MLE implementation, stressing the need to consider cultural and linguistic backgrounds for inclusive education. Recommendations highlight ongoing adaptation of instructional methods for diverse pupil groups, ensuring adequate language proficiency and cognitive development, with a call for further exploration of challenges and preferences within distinct subject areas to refine educational practices.

KEYWORDS: filipino, MTB-MLE, mother tongue, pupils' academic performance, Math and Science

I. INTRODUCTION

It is conceivable to say that the use of the Mother Tongue is an act of honoring the fundamental human rights of pupils who are members of a minority or who are marginalized on the basis of their ethnicity or socioeconomic status. In accordance with the laws of the Philippines and international treaties ratified by the United Nations.

There are several consequences for the delivery of education; however, the most important of these implications is the degree of English proficiency that the pupils have gained. A number of educators, especially those who teach English, are of the opinion that the use of MTB-MLE as a medium of teaching has the potential to result in their pupils getting poorer results on English proficiency examinations. In order for us to be able to compete on a worldwide scale in the current environment, it is very necessary for us to be able to communicate in and understand the English language (De Guzman, 2018).

English has been employed as the medium of teaching in practically every sector for decades, and as a result, it has given numerous benefits to the career of every student who is looking for a better job. It has proven its effectiveness in the economic development of our country. UNESCO has been the organization that has provided this assistance.

With a policy that emphasizes "Education for all," they believe that MTB-MLE is especially more vital to minority groups. Everyone should have the opportunity to go to school and get a good education, preferably in their mother tongue.

As to some parents and children, MTB-MLE is favorable to them for many reasons. They preferred MTB-MLE as the medium of instruction in teaching their children. Instructional resources and learning activity sheets that were written in their native language were the kinds of things that they enjoyed having access to. Regarding comprehension, the parents believe that MTB-MLE could be beneficial to their children's education. This is because their children are more effectively able to comprehend the material when instruction is conducted in their native language. Parents further hold the belief that their children's comprehension of the processes is enhanced through instruction in their mother tongue, which enables them to more readily comprehend the duties being taught in school.

Additionally, these parents believe that their children can develop self-confidence through their mother tongue because they can express themselves better when using the language they learn at home. Regarding socio-cultural development, they believe their children can socialize and get along with people around them well (Villanueva et al., 2017). Also,

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it would give views and a wide range of contributions to everyone in realizing the importance of multilingualism to the learning of children.

This study was anchored on Lev Vygotsky's theory on the child's language and multilingualism. According to him, speech's primary function in children and adults is communication and social contact. The earliest speech of the child is, therefore, essentially social. At a particular stage, the social speech of the child is quite sharply divided into egocentric and communicative speech. Egocentric speech emerges when the child transfers social collaborative forms of behavior to the sphere of inner personal psychic functions. When circumstances force the child to stop and think, he is likely to think aloud. In time, egocentric speech, splintered off from general social speech, leads to inner speech, which serves both autistic and logical thinking.

Language and multilingualism play an essential role in a child's learning. The importance of the word lies for him in the fact that it refers not to some specific concrete entity but to a generalization, and a generalization is a unit of thought. Thus, word meaning represents a union of thought and language, giving us the molecules of verbal thought. According to him, one must view concept formation as a function of the adolescent's total social and cultural growth, which affects not only the contents but also the methods of his thinking.

Aside from Vygotsky's theories of language, many studies have also revealed different views and perspectives on multilingualism. Yassin and Razak (2017) also revealed that mother tongue-based teaching interferes with the level of anxiety or stress experienced by language pupils. The interference was studied considering the respondents' years of study. The effect of such interference was found more prominent among lower years and less among their counterpart in the higher levels. However, there was also a study by Christian Lawrence N. Reyes of the National University-Baliwag, the Philippines, which said that based on the findings, teachers had expressed a positive attitude and high hopes for the MTB-MLE, as they adopted the program, provided that the government gave them enough support and materials to strengthen the implementation. The teachers' practices show how they support the program and its applicability in the teaching-learning process. It may also infer that pupils' participation using MTB-MLE can be maximized, through this, teachers were able to provide ample opportunity for pupils to participate.

The Department of Education and institutions of basic education may employ primary approaches and mechanisms to improve the program's accessibility to teaching and learning resources, thereby facilitating a more comprehensive implementation of the program. This program aims to provide pupils with the opportunity to utilize their mother tongue in the classroom until they reach the third grade, at which point they will transition to receiving instruction in English and Filipino.

As a result, the MTB-MLE mandate facilitates the enhancement of individuals' linguistic proficiencies, cognitive capacities, academic acumen, and preservation of socio-cultural pride. The introduction of the third language (L3) is scheduled for the second semester of Grade 1, assert that the language barrier impedes the learning process of pupils. As stated, they still need to seek the help of their teachers to translate the medium into the Filipino language to have a good grasp of the subject matter. Pupils also cannot participate in the discussions as they have difficulties comprehending the topics being discussed due to their unfamiliarity with the language used for instruction; thus, they are not able to articulate their thoughts since they are not fluent in such language. The responses of the participants of the study proved these.

II. METHODOLOGY

This study used the quantitative correlational method with documentary analysis to gather information about existing conditions. According to Gravater et al. (2018), quantitative correlational research is a methodological approach that systematically investigates the statistical relationships between two or more quantitative variables without manipulating independent and dependent variables.

Having collected and recorded the data gathered in the study, the researcher used the following statistical tools. Quantitative statistics such as frequency, percentage, mean, and standard deviation were used to describe the variables in the study. The Pearson Product Moment Correlation Coefficient (r) was utilized to establish the significant correlation between pupils' assessment on Mother Tongue Based Multilingual Education (MTB-MLE) in language development, cognitive thinking, sociocultural awareness, and their academic performance in MTB, Filipino Math, and Science.

III. RESULTS AND DISCUSSION

Problem 1. What is the pupils' assessment of MTB-MLE as a Mode of Instruction in terms of:

- 1.1 Language development;
- 1.2 Cognitive thinking, and
- 1.3 Socio-cultural awareness?

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Table 1 on the next page shows that the overall assessment of pupils on MTB MLE is quite positive. It has an overall Mean of 4.20 with SD=0.93, described as Agree and interpreted as High. This means that pupils prefer MTB-MLE as mode of instruction. For them it is of great help in understanding lessons, in participating in class to be more engaged during teaching and learning in school. Tomblin (2019) states that the use of MTB-MLE enhances a child's ability to think critically, resulting in improved performance and success.

Socio-cultural Awareness has the highest Mean of 4.24 with SD= 0.93, described as Agree and interpreted as High. This means that pupils are more engaged in class because they understand better the delivery of the lessons is in their own language. This gives them also the confidence to participate because they can express better when asked. All of the pupils can connect with each other because of the similar language they are using. As Villanueva et al. (2017) believed that children can socialize and get along with people around them well.

Table 1: Overall Pupils' Assessment on MTB-MLE as Mode of Instruction

Variables	Mean	SD	Description	Interpretation
Language Development	4.19	0.93	Agree	High
Cognitive thinking	4.16	0.92	Agree	High
Socio-Cultural Awareness	4.24	0.94	Strongly Agree	Very High
Overall Mean	4.20	0.93	Agree	High

Note: 4.21-5.00 Very high 3.41-4.20 High 2.61-3.40 Moderate 1.81-2.60 Low 1.00-1.80 Very low

Cognitive thinking has the lowest Mean of 4:16 with SD 0.93, described as Agree and interpreted as High. Though mean but the interpretation is high. This means that MTB-MLE mode of teaching can help pupils to think faster and better. Time spent for thinking is immediately done without the struggle of processing the words anymore because it is their own language used. According to Altaribba (2022), language growth has an effect on cognitive thinking.

Problem 2. What is the pupils' academic performance in:

- 1.1 MTB;
- 1.2 Filipino;
- 1.3 Mathematics;
- 1.4 Science?

Table 2: Pupils' Overall Academic Performance

Subject Area	Mean	SD	Description	Interpretation
MTB-MLE	85.62	3.84	Very Satisfactory	High
Filipino	85.54	3.10	Very Satisfactory	High
Math	84.31	3.60	Satisfactory	Moderate
Science	84.40	3.53	Satisfactory	Moderate
Overall Mean	84.97	3.52	Satisfactory	Low

Note: 90%-100% Outstanding 85%-89% Very Satisfactory 80%-84% Satisfactory
75%-79% Fairly Satisfactory 74% and Below Did not meet Expectations

Future research could delve into the specific areas or topics within Science that may pose challenges or ignite greater interest among pupils. Additionally, exploring the correlation between Science proficiency and performance in other subjects can contribute to a more comprehensive understanding of the factors influencing academic success in scientific knowledge. Table 2 amalgamates the mean scores, standard deviations, and interpretations of pupils' academic performance across multiple subject areas, offering a holistic perspective on their educational achievements.

In Mother Tongue-Based Multilingual Education (MTB-MLE) and Filipino, the mean scores of 85.62 and 85.54, respectively, classify the performance as Very Satisfactory, indicating a high level of proficiency in these language-based subjects. Math and Science exhibit slightly lower mean scores of 84.31 and 84.40, categorizing the performance as Satisfactory. While satisfactory, the lower mean scores in these subjects warrant further attention to enhance understanding and mastery.

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The overall mean score of 84.97 falls within the satisfactory range, indicating a generally acceptable level of academic achievement across all subjects. The standard deviations, ranging from 3.10 to 3.84, signify moderate score variability. Identifying the sources of variability can guide educators in tailoring instructional approaches to address specific challenges and capitalize on learning preferences. While language-based subjects demonstrate high proficiency,

Additionally, investigating correlations between language proficiency and success in quantitative and scientific domains can provide insights into the interconnectedness of different learning

Problem 3. Is there a significant relationship between pupils' assessment of MTB-MLE as a Mode of Instruction and pupils' academic performance?

The study employs correlation analysis to determine the strength and significance of these relationships. Table 13 on the next page shows the correlation between the Pupil's Assessment of MTB-MLE and Academic Performance. The results yield a significantly low positive correlation ($r = 0.4417$, $p = 0.0013$), indicating that as pupils' assessment of MTB-MLE increases, their language development improves significantly. Similarly, cognitive thinking demonstrates a significantly low positive correlation ($r = 0.3788$, $p = 0.0063$), suggesting that MTB-MLE positively influences cognitive skills among pupils. Moreover, sociocultural awareness exhibits a significantly low positive correlation ($r = 0.4156$, $p = 0.0018$), emphasizing the role of MTB-MLE in enhancing pupils' sociocultural understanding.

Table 3: Test of Correlation on Pupils' Assessment of MTB-MLE and Academic Performance

Pupils' Assessment on MTB-MLE	Academic Performance			
	r-value	p-value	Decision	Interpretation
Language Development	0.4417	0.0013	Reject Ho	Significant
Cognitive thinking	0.3788	0.0063	Reject Ho	Significant
Socio-Cultural Awareness	0.4156	0.0018	Reject Ho	Significant

Note: Significant if the computed p-value is lower than 0.05

The importance of academic success and language development cannot be overstated. Language plays a vital role in the development of a kid. Research undertaken both in the Philippines and elsewhere has consistently shown that using the native language is the optimal approach for promoting literacy education in nations with multiple languages.

Studies indicate that using the native language as the medium of education might lead to improved cognitive capacities in both the main and secondary languages of pupils. Using reading materials in one's home language improves cognitive thinking and cultivates an understanding and respect for Filipino culture, which are crucial for learning a second language and developing cultural sensitivity.

The main goal of including the local dialect in Grade 1 education is to enhance the development of the native language to a level of cognitive academic language proficiency, which will assist the learning of other languages. According to Balacano (2020), it is crucial to give priority to the acknowledgment of children's native language when assessing their academic achievements in primary school.

Cognition and Academic performance are significant in terms of Watson (2017), who also noted cognitive thinking is focused on higher-order thinking skills, which involve synthesizing, analyzing, reasoning, comprehending, applying, and evaluating. Bjorklund (2022) describes cognition as the processes or faculties by which knowledge is acquired and manipulated, including mental activities geared toward acquiring, understanding, and modifying information. Cognition is typically available in consciousness. Regarding cognitive thinking, "structure" refers to a hypothetical mental construct, faculty, or ability that frames knowledge and changes with age.

Pupils' responses to educational settings and the benefit they derive from these experiences are influenced by the sociocultural environments in which they are socialized and schooled. This highlights the importance of cultural sensitivity and awareness in education to promote inclusive and effective learning.

Overall, rejecting the null hypothesis (H_0) in all three dimensions (language development, cognitive thinking, and sociocultural awareness) supports the claim that a significant relationship exists between pupils' assessment of MTB-MLE and these aspects. These findings underscore the potential of MTB-MLE as an effective mode of instruction, positively impacting language development, cognitive skills, and socio-cultural awareness, thereby contributing to improved academic performance among pupils.

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Table 4: Test of Correlation on Pupils' Performance on MTB-MLE and Other Subjects

Pupils' Performance on Other Subjects	MTB-MLE			
	r-value	p-value	Decision	Interpretation
Filipino	0.4652	0.0019	Reject Ho	Significant
Math	0.3941	0.0044	Reject Ho	Significant
Science	0.4269	0.0021	Reject Ho	Significant

Note: Significant if the computed p-value is lower than 0.05

Table 4 examines the correlation between pupils' performance in Mother Tongue-Based Multilingual Education (MTB-MLE) and their academic performance in Filipino, Math, and Science. Utilizing correlation analysis, the study assesses the strength and significance of these relationships.

The results unveil compelling findings. Firstly, in the case of Filipino, a significant low positive correlation is observed ($r = 0.4652$, $p = 0.0019$), indicating that pupils' performance in MTB-MLE is significantly linked to their performance in the Filipino subject. This suggests that proficiency in MTB-MLE positively influences language-related skills, enhancing performance in the Filipino language. In their study, Dagalea et al. (2022) found that by integrating their native language, they were able to enhance their educational knowledge by simultaneously using both their native language and the second language (L2). The use of children's mother language facilitates the development of early reading abilities and comprehension, serving as the basis for learning.

Similarly, for Math, a significant low positive correlation is identified ($r = 0.3941$, $p = 0.0044$), highlighting a meaningful connection between MTB-MLE performance and mathematical achievement. This implies that the skills acquired through MTB-MLE contribute positively to mathematical understanding and problem-solving.

In Science, the data reveals a significant positive correlation ($r = 0.4269$, $p = 0.0021$). This underscores the broader educational impact of MTB-MLE, extending beyond language and mathematics to include scientific proficiency.

The constant rejection of the null hypothesis (H_0) in all four areas provides evidence to support the claim that there is a substantial association between. These data strongly support the ongoing deployment and endorsement of MTB-MLE, highlighting its beneficial impact on several academic areas.

Darmini's (2021) study shows that MTB MLE pupils show an increase of 25% in Reading, 35% in Math, and 15-30% in Science. MTB MLE significantly improves pupil achievement because it provides pupils with learning that is easily understood and related to life.

The study concludes that respondents express contentment with the program, reflected in Very Satisfactory ratings for MTB-MLE and Filipino and Satisfactory ratings for Math and Science. Further analysis reveals that while pupils exhibit commendable proficiency in Filipino, there is room for improvement in Math and Science. Correlation analyses unveil a significant positive relationship between pupils' assessment of MTB-MLE and academic performance across various dimensions, emphasizing improvements in language and cognitive skills and socio-cultural awareness. Moreover, there are substantial positive correlations between MTB-MLE performance and academic achievements in Filipino, Math, and Science, emphasizing the broad influence of MTB-MLE on diverse educational domains. The findings collectively stress the positive impact of MTB-MLE, supporting the need for ongoing support and refinement of these programs to enhance the overall learning experience for Grade 3 pupils.

IV. CONCLUSIONS

This study came up with the following conclusions based on the findings of the study:

1. The use of MTB-MLE in instruction significantly enhances pupils' comprehension and understanding of lesson content. When teachers utilize the pupils' vernacular, it facilitates a stronger grasp of discussions, leading to improved learning outcomes.

2. Utilizing the mother tongue as the medium of instruction, especially in the early grades, significantly improves children's comprehension of fundamental concepts in subjects like Science and Math. This enhanced understanding stems from the fact that children can more readily grasp new information when it is presented in a language they understand fluently, thereby facilitating a stronger foundation for learning.

2. A positive perception of MTB-MLE among pupils fosters more positive attitudes toward learning in general. This positive disposition can then create a ripple effect, positively influencing their academic performance across all subject areas.

V. RECOMMENDATIONS

Based on the findings and conclusions found in this study, the following recommendations are presented:

1. The schools and educational systems prioritize and strengthen the implementation of MTB-MLE programs. By equipping teachers with the necessary skills and resources to effectively teach using the mother tongue. This training should cover language proficiency, pedagogical strategies specific to MTB-MLE, and the development of culturally relevant materials.
2. Educational institutions should prioritize the implementation and expansion of MTB-MLE programs, particularly in the early grades (Kindergarten to Grade 3. This should be a systemic effort, not just a pilot program. Training teachers on effective strategies for teaching various subjects using the mother tongue, including curriculum development, lesson planning, and assessment techniques.
3. Schools and communities should actively promote the value and benefits of MTB-MLE to pupils, parents, and the wider community. By conducting workshops, seminars, and community meetings to educate stakeholders about the advantages of MTB-MLE.

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