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Knowledge Acquisition of Pupils and Effectiveness of MTB-MLE in Private and Public Schools: Basis for Primary Curriculum Review

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Abstract

This mixed-research study, with its significant findings, not only provides a comprehensive understanding of the level of knowledge acquisition of learners, the effectiveness of MTB-MLE curriculum implementation, and factors affecting the implementation of MTB-MLE Curriculum in public and private schools in the Province of Capiz for the school year 2022-2023 but also offers practical insights for educators, policymakers, and researchers. The data on knowledge acquisition in private and public schools were gathered using an assessment test adopted from Manuel (2022). The effectiveness of the Mother Tongue-based multilingual education was measured using a researcher-made survey questionnaire. The factors affecting MTB-MLE implementation's effectiveness were determined using an FGD guide questionnaire. The study's key findings reveal that learners' knowledge acquisition level in private schools is high. In contrast, learners' overall level of knowledge acquisition in public schools is moderate. The effectiveness of MTB-MLE Curriculum implementation in private schools is moderate, and the efficacy of MTB-MLE Curriculum implementation in public schools is also moderate. There is a significant difference in knowledge acquisition between private and public schools, favoring the private schools. A similar distinction is observed in the effectiveness of MTB-MLE implementation between private and public schools, favoring public schools. No significant relationships were found between knowledge acquisition and the effectiveness of MTB-MLE curriculum implementation. Finally, the factors found influencing the implementation of MTB-MLE Curriculum were categorized into enabling factors such as awareness of learner's language background, teacher's ability to apply multilingual approach, relevant and learning resources, teacher's initiative and commitment, teacher's knowledge of the objective of MTB-MLE Curriculum, positive influence of the curriculum on the learner's performance and parental support and involvement and the hindering factors are learner and teachers diverse language background, learner's inadaptability to language transition, non-translatable technical concepts, difficulty of parents to follow-up, perceived lack of practicability and benefits, limited teaching and learning resources, limited teacher's training and capability building and pandemic-related factors.

Keywords: Knowledge Acquisition, Mother Tongue-Based Multilingual Education, Curriculum Review

1. Introduction to the Study

Background and Theoretical Framework of the Study

Education is widely recognized as a vital catalyst for economic and social development, equipping individuals providing individuals with the necessary knowledge, skills, and competencies required for participation in the labor market, engagement in civic activities, and fostering community well-being. However, access to quality education remains challenging, particularly in developing countries with linguistically diverse student populations. In response, the use of a learner's mother tongue as the language of instruction in elementary education has evolved as a method aimed at improving learning outcomes. Ball (2014) states that children learn best in a language they understand well, leading to improved literacy and academic achievement.

However, adopting the MTB-MLE Curriculum in the Philippines over a decade ago has been challenging. Several studies have highlighted significant issues with its implementation, particularly in public schools. The apparent ineffectiveness, mirrored by the country's poor performance on international exams such as the 2018 and 2022 Programme for International Student Assessment (PISA), underscores the need for urgent attention and action.

Moreover, regardless of criticism, the new MATATAG Curriculum of the Department of Education (DepEd) continues to embrace the advocacies of the MTB-MLE program (DepEd, 2023). This outcome suggests that, despite the challenges, there are driving forces maintaining the program's status quo, which contribute to the program's resilience and continued implementation.

Educational institutions in the country operate either as public or private entities. Public schools, funded by the government, offer tuition-free education following the national curriculum set by the Department of Education (DepEd). These community-based schools typically have larger class sizes and cater to a diverse student population, encouraging interaction among students from various backgrounds. In contrast, private schools are independently managed and prioritize high-quality education with smaller classes, fostering personalized learning experiences and offering diverse curricula, including international programs and religious education. Tuition fees in private schools vary to accommodate different income levels, often providing facilities and extracurricular activities that enhance students' educational journeys (Atonibai, 2023).

Additionally, private and public schools in the country have distinct approaches to implementing the MTB-MLE Curriculum. In private schools, teachers usually teach MT as a subject area. In contrast, in public schools, MT serves as the medium of instruction (MOI) in all domains/subject areas from kindergarten through Grade 3, except for Filipino (L2) and English (L3) (Fillmore, 2023).

Thus, this study delves into the intricate dynamics of the knowledge acquisition of pupils and the effectiveness of MTB-MLE Curriculum implementation in private and public schools. Assessing these dimensions aims to uncover the complex interplay of factors influencing students' knowledge acquisition and the overall efficacy of MTB-MLE in diverse educational settings.

Studying the knowledge acquisition of pupils involves examining how students acquire, process, and retain information. This acquisition encompasses various cognitive processes, such as attention, perception, memory, and comprehension. By delving into these processes, researchers and educators can better understand how students learn and develop academically (Wiesen, 2023).

Understanding the mechanisms behind knowledge acquisition allows educators to implement effective teaching strategies tailored to student's cognitive and linguistic abilities and learning styles. For example, knowing that students have different attention spans and levels of cognitive development, educators can

employ techniques such as active learning, multisensory instruction, and differentiated instruction to engage students and facilitate learning (Monje et al., 2021).

Moreover, studying pupils' knowledge acquisition under helps identify potential challenges or barriers students may encounter in learning. These could include language barriers for students learning a second language, difficulties with abstract concepts, and the like (McConville, 2021). By recognizing these challenges, educators can provide targeted support and accommodations to help students overcome them and succeed academically. A deeper understanding of knowledge acquisition enhances teaching practices and promotes student success and achievement. It enables educators to craft inclusive and engaging educational experiences that address the diverse requirements of students and cultivate a lasting passion for learning (Gawish & Main, 2021).

It is essential to understand how knowledge is acquired in private schools because these institutions often possess different resources, teaching approaches, and student demographics than public schools. It would further help identify effective educational practices contributing to student success and inform efforts to replicate them in public school settings.

On the other hand, studying knowledge acquisition in public schools is critical for evaluating the effectiveness of public education systems in meeting the needs of diverse student populations. Public schools serve many students from different socio-economic backgrounds, cultural contexts, and learning abilities. Analyzing knowledge acquisition in public schools can help identify disparities in educational outcomes and develop policies and interventions to promote equity and improve student learning opportunities.

Finally, studying knowledge acquisition in private and public schools provides valuable insights into the factors influencing student learning. It guides endeavors to improve educational practices, foster equity, and enhance educational outcomes for every learner. It is essential for gaining insights into the effectiveness of different educational systems and identifying areas for improvement. By comparing knowledge acquisition between these two types of school settings, researchers can assess the impact of various factors such as teaching methods, curriculum design, resources, and socio-economic status on students' learning outcomes.

In the same vein, the success of implementing the mother tongue-based multilingual education (MTB-MLE) curriculum is critical for various reasons. To begin, MTB-MLE represents a substantial divergence from standard educational techniques by stressing the use of students' mother tongue as the medium of instruction. Understanding the effectiveness of its implementation enables policymakers, educators, and stakeholders to assess the influence on learning outcomes and educational equity.

Secondly, MTB-MLE promotes linguistic and cultural diversity while enhancing students' cognitive development and academic achievement. By studying different factors that affects its implementation, researchers can assess whether MTB-MLE achieves these goals and identify best practices for its implementation.

Furthermore, studying the effectiveness of MTB-MLE Curriculum Implementation contributes to the broader discourse on language education policy and practice. It offers insights into the impact of language use in education on student learning. It can guide the creation of evidence-based policies and programs to enhance educational outcomes for students with diverse linguistic backgrounds.

As a result, establishing the efficacy of Mother Tongue-Based Multilingual Education (MTB-MLE) Curriculum Implementation in private and public schools is critical. It helps assess the equity and inclusivity of education systems by examining how different types of schools implement MTB-MLE and

its impact on learning outcomes. Understanding whether private and public schools experience similar levels of success in MTB-MLE implementation can inform efforts to address disparities and ensure that all students have access to high-quality education.

Moreover, studying MTB-MLE effectiveness in diverse school settings allows for identifying best practices and challenges unique to each context. Private schools may face different resource constraints, teacher training needs, and community dynamics compared to public schools, influencing the implementation and outcomes of MTB-MLE. By examining these distinctions, researchers and policymakers can adjust support and interventions to address the unique requirements of private and public schools, thus increasing the overall success of MTB-MLE programs. In addition, studying MTB-MLE effectiveness in private and public schools contributes to evidence-based decision-making in education policy and practice. Findings from such studies can inform policy discussions, resource allocation, and professional development initiatives and provide inputs for implementing the new MATATAG Curriculum. Moreover, understanding the factors contributing to successful MTB-MLE implementation in different school contexts can guide future curriculum development, teacher training programs, and community engagement strategies to promote better student learning outcomes. Additionally, investigating the effectiveness of MTB-MLE Curriculum Implementation in private and public schools is essential for promoting educational equity, identifying context-specific challenges and best practices, and informing evidence-based policymaking in language education.

Research into learners' knowledge acquisition and Mother Tongue-Based Multilingual Education (MTB-MLE) success in private and public schools could provide an essential foundation for elementary curriculum review. By understanding how students acquire knowledge and the impact of language education policies, educators can identify areas for improvement in MTB-MLE practices. Finally, incorporating these findings into curriculum reviews can lead to more inclusive, culturally relevant, and practical educational experiences for students. The outcome may guarantee that the new MATATAG Curriculum brings about desired changes and improvements.

This study utilizes theoretical foundations from the following theories. First, it complements Kurt Levin's Force Field Theory and Curriculum Change (1951) with insights from various educational theories and linguistic considerations. Levin's Force Field Theory posits the presence of opposing forces—driving and restraining forces—within the educational landscape. When these forces achieve equilibrium, maintaining the status quo, there is a lack of impetus for change, allowing the existing situation to persist. This theory characterizes the process as a dynamic mechanism for change (Giron, 2016).

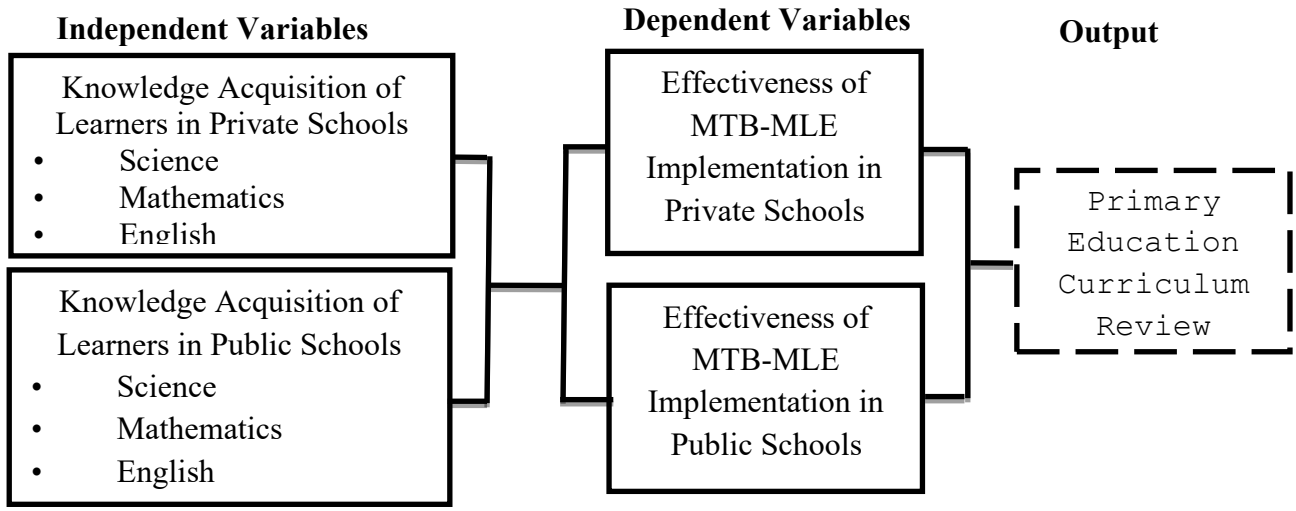
Second, it employs the Cognitive Load Theory(1980) by Sweller, which offers valuable insights into information presentation during teaching and learning. This theory emphasizes the importance of minimizing cognitive load through clear and straightforward language as the medium of instruction; this approach alleviates the burden on learners, ultimately enhancing their comprehension and retention of information (Main, 2023).

Moreover, Jean Piaget's Cognitive Developmental Theory (1936) outlines four stages of active learning in children. This theory supports the interconnectedness of knowledge acquisition and language development, advocating for diverse instructional mediums such as visual aids, hands-on activities, and interactive technologies. It recognizes and accommodates the varied learning preferences of individuals (Main, 2023; Davis et al., 2017; Giron et al., 2016).

Furthermore, Vygotsky's Sociocultural Theory (1978) highlighted the role of social interaction in cognitive development. Emphasizing that relationships and societal contexts are fundamental determinants of intellectual growth, this theory aligns seamlessly with the study. It underscores the potential of the medium of instruction to facilitate social interaction through classroom discussions, group projects, or collaborative online platforms (Giron et al., 2016; Main, 2023).

Finally, this study also utilized theories of language acquisition by Noam Chomsky (1950) and BF. Skinner (1957) plays a role in influencing the selection of the medium of instruction. These theories consider language proficiency and development, guiding the choice of a medium aligned with the linguistic capabilities of the learners. Recognizing language's impact on the learning process further emphasizes the importance of thoughtful selection in instructional design (Giron et al., 2016; Main, 2023)

Figure 1: Conceptual Framework



Statement of the Problem and the Hypothesis

The study sought to determine the level of knowledge acquisition of learners and the effectiveness of MTB-MLE in public and private schools in the Province of Capiz for the school year 2023-2024.

Specifically, the study sought to answer the following questions:

1. What is the level of knowledge acquisition of learners in private schools as a whole and in terms of Science, Mathematics, and English?
2. What is the level of knowledge acquisition of learners in public schools as a whole and in terms of Science, Mathematics, and English?
3. What is the level of effectiveness of MTB-MLE curriculum implementation in private schools?
4. What is the level of effectiveness of MTB-MLE curriculum implementation in public schools?
5. Is there a significant difference in learners' knowledge acquisition between the private and public schools in Science, Mathematics, and English?
6. Is there a significant difference in the effectiveness of MTB-MLE curriculum implementation between private and public schools?
7. Is there a significant relationship between learners' knowledge acquisition between the private and public schools as a whole and in terms of Science, Mathematics, and English?

8. Is there a significant relationship between private and public schools in the effectiveness of MTB-MLE Curriculum Implementation?
9. Is there a significant relationship between knowledge acquisition and the effectiveness of MTB-MLE Curriculum Implementation?
10. What are the factors influencing the effectiveness of MTB-MLE Curriculum Implementation?

Hypothesis

The following statements guided the formulation of the hypotheses:

1. There is no significant difference in learners' knowledge acquisition in private and public schools in terms of Science, Mathematics, and English.
2. There is no significant difference in the effectiveness of MTB-MLE curriculum implementation between private and public schools.
3. There is no significant relationship between learners' knowledge acquisition in private and public schools and in terms of Science, Mathematics, and English.
4. There is no significant relationship in the effectiveness of MTB-MLE Curriculum Implementation between private and public schools.
5. There is no significant relationship between knowledge acquisition and the effectiveness of MTB-MLE Curriculum Implementation.

Significance of the Study

The study's results may enhance the understanding and improve the utilization of the Mother Tongue as a mode of teaching and learning in the new MATATAG Curriculum. This study will benefit pupils, primary education teachers, curriculum developers, education supervisors, school administrators, parents, teacher education institutions, community extension services of higher education institutions, and future researchers.

Pupils. As revealed by the study, the most influential factors affecting the practical implementation approach of MTB-MLE may significantly benefit future kindergarten and primary education pupils under the MATATAG Curriculum. The result of the study may provide the pupils with a better understanding of classroom content and improved comprehension, thereby enhancing their learning experience and academic performance, which may indeed reassure parents and school administrators.

Primary Education Teachers. Understanding the challenges encountered and strategies done by the study's informants will aid other primary education teachers in delivering their lessons and effectively facilitate the acquisition of competencies required in each learning area. It may also help the teachers understand how language and medium of instruction affect the knowledge acquisition skills of pupils.

Curriculum Developers. Findings from the study may guide curriculum developers in aligning the MTB-MLE program to the educational goals and objectives of the new MATATAG Curriculum. This alignment ensures that the curriculum contributes effectively to the latest education system's overall educational outcomes and priorities. The result offers empirical evidence on the impact of the current MTB-MLE curriculum on learning outcomes in Science, English, and Mathematics in private and public schools. Curriculum developers may also use the result as evidence to make data-driven decisions, ensuring that changes or modifications are grounded in actual educational outcomes.

Education Supervisors. The result of this study may serve as the basis for the review of the MTB-MLE program to improve the implementation of the new curriculum. The result may also make the

department aware of the issues and limitations of the current implementation of MTB-MLE at the primary level. It thus helps policy implementers address existing problems. It will further provide insights into the different contributing factors that will facilitate better implementation of the MATATAG Curriculum while using the Mother Tongue. Moreover, it may help the department optimize language components based on research findings, ensuring that language instruction using Mother Tongue is effective and aligned with the country's educational goals.

School Administrators. The study's findings may provide school administrators with an improved appreciation of the approach to implementing the MATATAG Curriculum utilizing Mother Tongue as a medium of teaching and learning in kindergarten to grade 3. It also offers opportunities for them to benchmark the teaching strategies that can effectively deliver the objectives of Mother Tongue-based Education. Further, the result may provide an avenue to re-assess the policy implementation of the MTB-MLE Curriculum, improving learners' learning experience and performance.

Parents. This study may help parents understand the policy of using their mother tongue as a mode of teaching and learning from kindergarten to grade 3 and be aware of the considerations they should undertake at home to support their children's studies.

Teacher Education Institutions. This study may enable higher education institutions offering Teacher Education to review their curriculum based on the findings and recommendations of this study.

Community Extension Services of Higher Education Institutions. This study may guide how Higher Education Institutions can maximize their contributions to advancing Mother Tongue-Based Multilingual Education (MTB-MLE) initiatives and may also inspire and commit them to community engagement efforts. The findings of this study may serve as a catalyst for positive societal impact through building partnerships with the primary education sector to promote quality education.

Future Researchers. The result may serve as a reference for future studies regarding Mother Tongue-based education in the country. This study may contribute to the literature on MTB-MLE. The result may serve as a reference for further improvements in pupils' curriculum, learning processes, and academic performance.

Definition of Terms

Important terms used in this study were defined conceptually and operationally for clarity and precision.

Knowledge Acquisition. Refers to acquiring, processing, understanding, and recalling information through several methods (Weisen, 2023).

In this study, "knowledge acquisition" is referred to the degree to which public and private elementary school pupils acquire new knowledge and skills related to the Mother Tongue-Based Multilingual Education (MTB-MLE) curriculum. This variable was measured using a standardized assessment adopted from (Manuel, 2022).

Effectiveness of MTB-MLE. Refers to the result of particular reviews/analyses that assess the quality of achieving a specific educational goal or the degree to which an institution is expected to fulfil specific requirements (UNESCO, 2007).

In this study, "Effectiveness of MTB-MLE" referred to the quality to which the Mother Tongue-Based Multilingual Education (MTB MLE) achieves its intended goals and objectives in teaching and learning Science and Mathematics subjects using the Mother Tongue. It measures how successful the implementation of the MTB MLE curriculum is in facilitating the acquisition of knowledge and skills among the learners in the study. This variable was measured using a researcher-made questionnaire.

Delimitation of the Study

This mixed-method study aimed to determine the level of learners' knowledge acquisition, the level of effectiveness of MTB-MLE curriculum implementation in public and private schools, and the factors that influence the effectiveness of MTB-MLE in promoting knowledge acquisition.

The study included three hundred forty-one (341) out of four hundred eighty learners from private elementary schools, three hundred eighty (380) out of fourteen thousand seven hundred thirty-five (14,735) learners from public schools, and sixty-six (66) out of one hundred twenty-one (121) teachers from private schools and seventy-nine (79) out of one thousand eight hundred eighty teachers from public schools, who were chosen randomly as participants. Two (2) teachers from private schools and seven (7) teachers from public schools, purposively selected due to their experience in private and public school settings, served as the participants in the focus group discussion.

The independent variable is the effectiveness of MTB-MLE Curriculum Implementation, while the dependent variable is the learners' knowledge acquisition.

Learners' knowledge acquisition level was measured using a standardized assessment tool adopted from (Manuel, 2022). The effectiveness of the Mother Tongue-Based Multilingual Education was measured using a researcher-made questionnaire.

A focus group discussion was conducted to determine the factors influencing the effectiveness of MTB-MLE curriculum implementation.

The data gathered were computer-processed using the Statistical Package for the Social Science (SPSS) software. Descriptive statistical tools such as mean and standard deviation. On the other hand, the study used t-test and Pearson r as inferential tests. The level of significance of inferential tests was set at a 0.05 alpha.

Finally, a thematic analysis was conducted to identify the factors influencing the effectiveness of MTB-MLE Curriculum implementation.

2. Review of Related Literature

Knowledge Acquisition and MTB-MLE

Knowledge acquisition is acquiring, processing, interpreting, and recalling information using several processes. It is often a study subject strongly related to cognition, memory, and how humans comprehend their surroundings. While no single theory has been extensively demonstrated or universally accepted, numerous knowledge acquisition theories share fundamental commonalities with the process. Knowledge acquisition typically details how people experience new information, store it in their brains, and recall it for later use (Wiesen, 2023).

The concept of acquiring knowledge is rooted in John Locke's philosophy, which characterized the human mind's initial state as a "blank slate" or "tabula rasa," implying that individuals are born devoid of knowledge and accumulate it through life experiences. Knowledge acquisition is the process of learning through various experiences and experiments. It encompasses comprehending, integrating, adjusting, and affirming knowledge to accomplish objectives such as developing concepts, clarifying thoughts, posing inquiries, grasping problems, and reaching conclusions (Kaba & Ramaiah, 2019). It commonly commences with receiving or acquiring fresh information, typically through visual, auditory, and tactile stimuli perceived by an individual's senses. For instance, upon encountering a dog for the first time, one receives visual input regarding its appearance. This knowledge acquisition may include recognizing that a dog typically possesses four legs, is coated in fur, and has a tail. Knowledge acquisition typically

progresses through encoding and comprehending information upon receiving information. This encoding phase enables an individual to construct a cognitive framework for a particular piece of information, often called a schema. For instance, in the case of a dog, the schema integrates received information to form a comprehensive understanding of what defines "dogness." When encountering a different animal, such as a kangaroo, individuals process the new information, recognize its disparity from the dog schema, and develop a new framework for this novel knowledge (Wiesen, 2023).

Subsequently, knowledge acquisition advances with the capacity to efficiently recall and modify stored information. Upon reencountering a dog, individuals can identify it as such by recollecting the schema for "dog" and confirming its alignment with that mental model. This process may induce cognitive dissonance when individuals encounter an object that fits within a particular schema but deviates from certain aspects of that model. For instance, upon first meeting a hairless dog, individuals may initially struggle to recognize it entirely as a dog. They must adjust their schema for "dog" with the newfound knowledge that dogs can be hairless. This ongoing process of knowledge acquisition typically persists throughout an individual's lifetime. However, it is often most intense during the formative years as individuals rapidly construct and refine schemata based on myriad pieces of information (Wiesen, 2023).

Meyer (2023) suggested that Protagoras' notion that "Man is the measure of all things" comprehends a person's knowledge. However, criticism of Protagoras emerged due to the perceived lack of privilege in his teachings, leading to an educational relativist paradox. The Enlightenment tradition attempted to reconcile this by differentiating between objective and subjective knowledge. Nevertheless, Sellars and Quine have contested this resolution. With the Enlightenment solution considered inadequate, an alternative approach is proposed, delving into the foundations of empiricism, the significance of language, and introducing concepts such as triggered hallucinations, cognitive evolutionary pressure, and cognitive empathetic resonance. Cognitive sympathetic resonance suggests that language serves as a generative force, elucidating the facilitation of our thoughts and actions. This perspective challenges the empiricist belief that ideas originate from external reality, suggesting that ideas are more fluid and rooted in an active post hoc process. The crux of the argument is that while facts exist and hold privilege, they are not inherently due to their given nature but rather because they serve as a prerequisite for meaningful discourse engagement.

Moreover, language and knowledge acquisition are the subject of several distinct theories. For example, behavioralists think language, like all other knowledge, abilities, and values, can be taught to infants through repetition, imitation, and habituation. BF. Skinner, the father of Operant Conditioning, admits that every individual has a brain but argues that it is unproductive to study internal systems and that the best way to understand behavior is to look at the causes of an action and its consequences (operant). He posited that children acquire language through reinforcement principles, both positive and negative, by forming associations between words and their meanings. This Theory is called imitation. Children learn to speak by copying the utterances heard around them and strengthening their responses through repetitions, corrections, and other reactions that adults provide (Giron et al., 2016).

Furthermore, from the behaviorist perspective, language is seen as a structured and consistent pattern, with development occurring through imitation and consistent practice, similar to the formation of habits. While the imitation theory acknowledges the influence of external factors on children's language development, it fails to account for why children continue to innovate and modify their utterances despite controlled exposure to the language. Constructivists propose an alternative perspective on

learning and language acquisition, revising the imitation theory to explain the relationship between cognition and language development (Giron et al., 2016).

On the other hand, Jean Piaget argued that children are active learners who construct meaning from their environment. He explained the interconnectedness of knowledge and language acquisition through qualitative changes in children's mental processes as they develop. He views children as active learners, constructing knowledge over time as they interact with their environment through four developmental stages (Giron et al., 2016 & Main, 2021).

The sensorimotor stage begins in infancy and lasts until language acquisition. Children actively construct an understanding of the world by physically interacting with the environment using various senses. They progressively learn the concept of being separated from the environment and the persistence of objects from the environment, whether or not they physically interact with them. The development that allows children to create mental pictures of things they perceive from the environment is called object permanence. (Main, 2021).

The second stage, known as the preoperational stage, typically begins around the age of two and lasts until approximately seven years old. During this stage, children have started to develop language skills but still struggle with concrete logic and may find it challenging to manipulate objects mentally. They tend to exhibit narcissistic tendencies, having difficulty understanding others' viewpoints. In this stage, children predominantly center knowledge development and language acquisition around pretend play, which constitutes a form of symbolic play.

Symbolic play involves children using objects to represent other objects, eventually progressing to symbolic function, where children can mentally understand, remember, and visualize objects without physically seeing them. Towards the end of this stage, children develop intuitive thinking, leading to an insatiable curiosity and an endless stream of questions as they seek to understand the world around them. However, concrete logical thinking still needs to improve their ability to organize their thoughts and articulate their ideas clearly (Giron et al., 2016).

The third stage, the concrete operational stage, follows the preoperational stage and typically occurs between the ages of seven and 12. Children acquire tangible logical thinking skills, such as inductive reasoning, during this stage. They start to solve problems logically, and their language acquisition shifts towards social matters. Egocentrism may resurface during this stage, manifested in adolescents' sense of personal uniqueness and invincibility. They also begin valuing justification and word choice (Giron et al., 2016).

The fourth and final stage is the formal operational stage, which spans from adolescence to adulthood. During this stage, individuals demonstrate knowledge development by logically using symbols related to abstract concepts. Individuals acquire hypothetical and deductive reasoning skills. In this stage, language becomes more abstract, and individuals learn to use it without relying on concrete representations (Giron et al., 2016).

Further, the constructivist perspective of language acquisition offers valuable insights into the connection between thought (cognition) and language acquisition. According to this view, children develop more sophisticated mental processes and become increasingly capable of acquiring and manipulating language to represent their ideas (Main, 2022).

Similarly, Lev Vygotsky asserted that children's speech plays a pivotal role in developing their thinking abilities. He introduced a sociocultural model of human development, particularly cognitive

development, aligned with Marxist ideologies emphasizing individual growth's social and cultural foundations. This approach is called social or cooperative learning (Giron et al., 2016).

Vygotsky's Theory underscores the influence of Culture on a child's cognitive development, including skills like reasoning and communication. According to this framework, adults facilitate children's mental growth within a society by involving them in meaningful and challenging activities. Vygotsky conversed that learning occurs through three distinct stages: cognitive, motoric, and sociocultural. Cognitive learning pertains to conceptual and ideational thinking; motoric learning involves practical tasks; and sociocultural learning entails interpersonal interactions (Main, 2022).

Indeed, Vygotsky's Theory postulates that each developmental stage builds upon its predecessors, and he believed that adults can learn from observing children. He also emphasized the significance of play in children's learning processes, considering it a form of sociocultural learning. While he acknowledged the active role of intrinsic development, he asserted that cultural development, including concepts, writings, and oral language, fosters the highest level of mental abilities and psychological functions. He suggested that a child's social interactions with more knowledgeable peers and adults can support the child's potential development in cognitive functions. He hypothesized that a child's psychological functions might only progress significantly with interpersonal instruction, as their mental processes rely solely on their discoveries (Main, 2022).

Additionally, Vygotsky's ideas fundamentally revolve around explaining children's development. Vygotsky based his theories on observations of children in Russia during the 1920s and 1930s, yet their relevance persists today. According to Vygotsky, children initially start as blank slates, learning primarily through observation and imitation. As they progress, they gradually form their thoughts and opinions, continuing to develop socially until reaching adulthood. Central to his Theory is the concept that children learn through observing and imitating adults. When a child witnesses someone else performing a task, they attempt to mimic the behavior. Through ongoing observation and imitation, the child begins to grasp the underlying concepts behind the behavior (Main, 2022).

The process referred to as internalization involves imitation and observation. Through internalization, individuals can pass knowledge on to one another. For instance, when someone instructs another on playing tennis, the learner will eventually become a tennis player. Vygotsky further maintained that our mode of communication with others shapes our learning process. He asserted that learning occurs through conversations with others and attentive listening to their discourse. Subsequently, individuals endeavor to apply the acquired knowledge to analogous scenarios in subsequent situations (Main, 2022).

Moreover, the most crucial contribution of Vygostsky's Theory is an emphasis on sociocultural learning. He elucidated the concept of the zone of proximal development (ZPD), which denotes the discrepancy between a learner's actual ability (AA) - tasks they can independently perform - and their potential ability (PA) - tasks they can accomplish with assistance or guidance (scaffolding). Vygotsky posited that learning occurs most effectively when individuals operate within their ZPD. With appropriate scaffolding, a child may engage with objects in their environment but could be able to acquire essential vocabulary necessary for future interactions and communication with others. He further believed that higher mental functioning usually exists in conversation and collaboration among individuals before it exists within the individual (Giron et al., 2016).

On the other hand, Chomsky's Universal Grammar theory contends that all humans are inherently equipped with the capacity for language acquisition from birth. The inherent knowledge of grammatical structures and rules facilitates this innate ability. Thus, his Theory underscores the significance of

natural knowledge in the acquisition and utilization of language. He postulated the existence of a built-in language faculty in humans, enabling them to acquire and comprehend language naturally (Giron et al., 2016).

Universal Grammar provides the foundation for language acquisition, serving as a blueprint for constructing grammatically correct sentences across different languages. Chomsky additionally introduced the concept of the Language Acquisition Device (LAD), a specialized language processing mechanism within the human brain. Researchers believe that the LAD houses the innate principles essential for language acquisition. It empowers children to navigate the complexities of language, interpret linguistic input, and construct grammatically correct sentences. Through exposure to language input, children can acquire and refine their linguistic abilities by utilizing the principles and parameters inherent in Universal Grammar (Main, 2023).

On the contrary, Cognitive Load refers to the volume of information that working memory capacity can effectively handle at any given moment. John Sweller, the proponent of the Cognitive Load Theory, explained that optimal learning occurs when the learning environment aligns with human cognitive capacity. Established theories concerning information processing and storage underpin the Cognitive Load Theory. These include the division of human memory into long-term memory and working memory, the notion that processing new information imposes a cognitive load on working memory, which can impact learning outcomes, and the storage of content knowledge in the form of schemas in long-term memory (Main, 2023).

In addition, Sweller contends that human memory is subject to constraints, necessitating instructional methods that steer clear of overwhelming it with activities that offer minimal learning benefits. When the human brain introduces information, it imposes a cognitive load, placing a processing burden on the brain to yield meaningful learning outcomes from the information. Educational psychology specialists assert that students rely on their working memory to retain fragments of information during instruction. This finite functional memory capacity is utilized by students when engaging with explicit classroom instruction (Main, 2023).

Despite its limited cognitive processing capacity, working memory and cognition play crucial roles in an individual's learning process. However, their effectiveness can diminish, particularly in complex instructional designs, where learners must exert more effort to process information. Learners' cognitive load reflects the mental activity the working memory takes to execute a specific learning task. Various factors can influence cognitive load in working memory and cognition. For instance, the greater the volume of information presented at once, the higher the likelihood that private and public school students will struggle to retain it. Consequently, it is essential to efficiently manage the mental workload of learners (Benjamin & Main, 2022).

Furthermore, educators can leverage the concept of cognitive load to enhance the learning and training processes of both private and public school students, thereby fostering meaningful learning outcomes. According to the cognitive load theory, when individuals engage in learning activities, their brains must exert more effort than usual. They must process information more rapidly and retain it for more extended periods. Consequently, individuals can only manage a limited number of tasks simultaneously. Attempting to learn excessive information at once can lead to cognitive overload. Cognitive overload occurs when individuals are inundated with information, resulting in feelings of overwhelm and stress. This stress can induce fatigue, irritability, and an inability to focus. Cognitive overload can lead students to forget essential details and perform poorly on tests (Benjamin & Main, 2022).

Accordingly, individuals acquire new knowledge or skills that they can apply. A lasting alteration occurs in the long-term memory when a person effectively transfers, encodes, and stores information. The Cognitive Load Theory elucidates how a person transfers information to long-term memory, and comprehending this process allows one to pinpoint minor adjustments that can enhance the speed and efficacy of learning new information. Students, educators, and families can employ cognitive load theory to establish environments conducive to more effective teaching, learning, and revision (Main, 2022).

Likewise, Kaba and Ramaiah (2019) reviewed concepts, theories, and knowledge acquisition and creation studies. They explored how knowledge acquisition and creation are measured, finding support for using various tools. The researchers discovered that individuals use sources like books, journals, the internet, experience, peers, and professional development to acquire knowledge.

Factors such as teaching, learning, research, staying informed, professional growth, academic achievement, and income levels identified the objectives of knowledge acquisition. They employed independent variables such as leadership, interpersonal relationships, trust, collaboration, sustainability, faculty engagement, SECI (Socialization, Externalization, Combination, Internalization), and student interactions to gauge knowledge creation.

Cheru and Singh (2022) investigated the role of cognitive processes in knowledge acquisition and its impact on academic practices. They discovered that employing technologically assisted, non-invasive methods to comprehend brain development and map cognitive functions can augment student learning and instructional techniques. By identifying domain-specific cognitive processes through factor analysis, they were able to bolster knowledge-related clusters, thereby assessing students' proficiency in different academic disciplines. For instance, enhancing critical thinking skills in science could be achieved by strengthening associated cognitive processes through engagement in arts, music, and kinesthetic activities, promoting neural synchronization.

In early childhood, knowledge acquisition relies heavily on sensory-motor integration, shaping attentional, perceptual, memory, language, and socialization systems. As development progresses into adolescence, higher-order cognitive and socio-emotional functions increasingly influence learning. Mental enrichment tailored to age-specific developmental capabilities and supplementary skill training can bolster individual cognitive skills, enhancing knowledge acquisition and organization. Establishing a conducive environment characterized by positive classroom interactions, supportive home environments, and socio-emotional relationships is imperative for experience-dependent plasticity in the learning process. Consequently, inappropriate classroom instruction not aligned with a child's level of maturation may precipitate behavioral issues (Cheru & Singh, 2022).

In the context of multilingual education, the International Bureau of Education (2023) states that the Multilingualism flagship adopts a bilingual approach to the first language/language of instruction. This approach recognizes that the language of instruction differs from the first language, aiming to improve the quality of learning, inclusion in education, and the achievement of SDG 4 of the 2030 Agenda. This approach understands that the language of instruction differs from the first language, aiming to improve the quality of learning, inclusion in education, and the achievement of SDG 4 of the 2030 Agenda.

For instance, many believe that contemporary African schools often act as repositories for African cultures rather than environments where diverse cultures intersect and mutually enrich each other. Therefore, proponents suggested incorporating local cultures, values, and indigenous knowledge into the curriculum, allowing learners deeply rooted in their cultures to engage with different cultures while acknowledging universal values and fostering local and global citizenship. This aspiration involves

recognizing the importance of African languages and advocating for multilingual education within the curricula (International Bureau of Education, 2023).

As detailed, eight out of ten African children embark on their educational journey in a language different from their mother tongue, spoken at home. This instance presents a significant barrier to effective learning, knowledge acquisition, and skill development, often resulting in exclusion and frustration, ultimately leading to learners dropping out of the education system. Beyond the cultural advantages, employing the mother language and local languages as the medium of instruction in education has proven to be one of the most effective approaches for expediting knowledge acquisition and skill development and improving overall learning outcomes. In response to the escalating demand for multilingual education, the International Bureau of Education (IBE) dedicates itself to harnessing UNESCO's 50 years of experience, lessons, and recommendations on mother tongue and multilingual education to assist countries that express interest (International Bureau of Education, 2023).

Additionally, proficiency in more than two languages enables individuals to communicate effectively in various personal and professional contexts. This thing occurs because a significant portion of knowledge often remains readily accessible only through specific languages, whether they are official or unofficial. Knowing an indigenous language is believed to grant access to a vast repository of wisdom, expertise, knowledge, and skills embedded within the speakers of these languages. Therefore, multilingualism is considered a significant resource. They can synthesize and express knowledge effectively when proficient in official and indigenous languages. Hence, it is crucial to incorporate indigenous languages into education to reap the benefits of synthesizing and articulating knowledge clearly. Multilingualism practices foster intellectual flexibility and creativity. Studies have shown that children raised in a supportive environment where they speak multiple languages from an early age tend to be more perceptive and intellectually flexible than those who speak only one language (Okal, 2014).

Furthermore, bilingual or multilingual students often demonstrate more vital academic abilities than their counterparts in monolingual schools. An assessment of mother tongue instruction in northwest Cameroon revealed that first-grade children taught in their mother tongue, Kom, exhibited significantly better performance across various subjects, including English and Mathematics, than those solely taught in L3 English (Walter & Chuo, 2011).

Moreover, multilingual education offers several benefits, including enhanced cognitive skills and memory improvement. Proficiency in multiple languages contributes to the enhancement of mental capacity. Children who speak more than one language typically possess more vital cognitive abilities, leading to academic and financial success beyond that of their monolingual peers. Multilingual individuals enjoy an advantage over monolinguals, who are better equipped to navigate diverse linguistic and cultural contexts. In addition, multilingual education aids in developing working memory, enabling learners to be more perceptive and attuned to their surroundings. Individuals engaging in bilingual education show lower levels of anxiety and fear, reducing the likelihood of developing mental health issues. Similarly, bilingual education opportunities promote brain development, improve student focus, and facilitate quicker task switching (Team Varthana, 2023).

Pflepsen (2015) also advocates for using children's first languages (L1) or familiar languages as mediums of instruction in the education sector, highlighting its effectiveness in facilitating language acquisition, reading development, and academic learning. She underscores its merits in promoting human rights, preserving language and culture, and being feasible and cost-effective. Furthermore, she enumerates the benefits of Mother Tongue-Based Multilingual Education (MTB-MLE), including

increased access to education, improved learning outcomes, child-centered learning, enhanced gender equity, accurate assessment of student learning, cost-effectiveness, and greater parental and community involvement in education, which validates and preserves children's language and Culture.

Similarly, Trudell (2016) noted that using the mother tongue in the classroom enhances classroom participation, reduces attrition rates, and increases family and community engagement in children's learning. She also emphasized that using the mother tongue as the medium of instruction enhances cognitive learning processes and underscores the importance of conducting learner-centered learning in a language the child speaks for effectiveness.

Nevertheless, Casinillo (2022) stated that using both the mother tongue and English in teaching Mathematics is a practical approach, as it aids learners in understanding concepts and contributes to acquiring mathematical competence. Zergani (2016) supported this by concluding that teaching the mother tongue alongside the second language facilitates the transfer of sounds and structures of the language more efficiently, allowing children to build upon their existing knowledge and understanding. He asserts that learners quickly transfer literacy strategies, sensory-motor skills, and coordination. As language development progresses, they easily share concepts understood in the first to the second language. He suggested that simultaneous exposure to the mother tongue and second language enhances linguistic and educational development, fostering a deeper understanding and the ability to compare, contrast, and use multiple linguistic systems. Moreover, success and proficiency in the mother tongue are strong predictors of success in the second language, with learners with a strong foundation in their first language performing better in second language exams and education.

However, poverty significantly impacts the process of knowledge acquisition. Children from impoverished backgrounds often lack necessities for their well-being, such as food, sanitation, and security (Steyn, 2017). The influence of socioeconomic status on educational outcomes is undeniable, as the stress and instability associated with poverty can profoundly affect a child's ability to learn and succeed in school. Furthermore, the physical learning environment at home may be suboptimal due to overcrowded living conditions, noise, and a lack of dedicated study space. The instability and stress of living in poverty can adversely affect a child's educational achievements (GGI Insights, 2024).

Public schools in economically disadvantaged areas may face higher student-teacher ratios, posing challenges for teachers to provide individualized attention and support. A lower student-teacher ratio typically allows for more personalized attention and support, enabling teachers to spend more time with each student and provide constructive feedback (Gourault, 2023). Conversely, private school students' average socioeconomic background is higher than public school students (OECD, 2014). As stated on the American Psychological Association website in 2017, children from low-SES households and communities develop academic skills slower than children from higher-SES groups. At age 15, private high school students scored significantly higher than public high school students on reading, mathematics, and science assessments (Frenette & Winnie Chan, 2015). Researchers found that learners of higher socioeconomic status fare better academically because they often have access to better educational resources, extracurricular activities, and educational opportunities. Munir et al. (2018) link these factors to improved academic performance, skill development, and increased motivation.

Another study suggests that private schools in the Philippines are outperforming expectations considering the income level and are surpassing public schools across all three domains: mathematics, science, and reading (Orbeta & Paqueo, 2022). Tufail and Nosheen (2023) attribute this trend to the higher level of parental involvement in the education of children attending private schools compared to

those in public schools. This involvement may include providing educational support at home, attending parent-teacher conferences, and encouraging reading and language-related activities. Early exposure to English could give learners the language skills they need to perform better on academic tests and excel in their studies (Malesińska, 2022). Mugumya et al. (2022) support this claim by stating that parents' involvement in children's education through providing basic needs and effective communication influences the children's academic performance.

Indeed, Li (2018) suggests that parenting behavior and educational support play crucial roles in cultivating children's learning habits and influencing academic performance. Additionally, access to supplementary learning resources, such as books, online academic platforms, and digital technology, can complement the curriculum and provide students with a more comprehensive understanding of the subject matter. The findings of Ayado et al. (2022) support this notion, indicating that students perceive the internet and gadgets as helpful in learning. Furthermore, the study concludes that students who utilize supplementary learning materials tend to achieve higher academic scores than those using conventional teaching methods.

Similarly, a home environment that values education and emphasizes language and learning development can positively impact a student's knowledge acquisition skills. Jain and Mohta (2019) supported this view in their study, stating that they found a positive relation between the home environment and the students' academic achievement. Students with highly involved parents had better academic performance and higher test scores in all the subjects (Naite,2021). Also, Khan et al. (2019) recommended that providing learners with a comfortable and conducive home learning space improves their learning. Motivated teachers contribute to creating a positive learning environment, fostering student engagement, and enhancing academic outcomes (Nahid et al., 2023). The impact of teachers' job morale on school effectiveness is evident, as indicated by various identified dimensions, including intrinsic motivation. All these dimensions collectively contribute to the success of the classroom (Khun-Inkeeree et al., 2022).

Effectiveness of MTB-MLE Curriculum Implementation

Mother-Tongue-Based Multilingual Education (MTB – MLE) refers to an educational approach where educators utilize the children's mother tongue as the medium of instruction (DepEd R-II, 2019). This approach encompasses formal and non-formal education settings, wherein learners engage with content using their mother tongue and additional languages. The aim is to establish a strong foundation in the learner's mother language, providing a conducive environment for effective learning (DepEd, 2013).

In the Philippines, MTB-MLE traces its origins back to 2009 when Secretary Jesli A. Lapuz issued Department Order No. 74, s of 2009, titled "Institutionalizing Mother Tongue-Based Multilingual Education (MLE)." This directive marked a departure from the longstanding bilingual education policy, which primarily focused on English and Filipino as the languages of instruction in primary education. Secretary Lapuz recognized the potential of using learners' mother tongues to enhance learning outcomes and promote inclusive education (Giron, 2016).

The DepEd Order mentioned above mandates Mother Tongue as the sole language of instruction from preschool to Grade 3. From the fourth grade onward, it introduced Filipino for all subjects except English, Math, and Science, where English remains the medium of instruction. Furthermore, the DepEd Order extended the use of Mother Tongue beyond the initial three years of elementary school. Teachers will teach Filipino and English as separate subjects in the early grades. They will use them as the

medium of instruction once students have gained proficiency in the two languages. These same languages will remain the primary languages of teaching in high school, with the mother tongue as an auxiliary and supplementary medium (Giron et al., 2016).

With Republic Act 10157 approved on January 20, 2012, or "An Act Institutionalizing the Kindergarten Education into the Basic Education System," Secretary Bro. Armin Luistro issued DepEd Order No. 21 s. 2012, entitled "Policies and Guidelines in the Universal Kindergarten Education Program". This order underscores the overarching principle of promoting inclusive education to reach all five-year-old children. It mandates that all teachers "shall use the mother tongue as MOI for developing the competencies for kindergarten learners." Thus, in the school year 2012-2013, schools employed twelve (12) Filipino languages as the language of learning for kindergarten up to grade three. In the subsequent year, they incorporated seven other languages as mediums of instruction. As of 2015, the Department of Education (DepEd) utilized a total of nineteen (19) languages, namely Pangasinense, Iloko, Kapampangan, Tagalog, Bikol, Cebuano, Hiligaynon, Waray, Tausug, Maguindanaoan, Maranao, Ybanag, Ivatan, Sambal, Aklanon, Kinaray-a, Yakan, and Surigaonon (Alcudia et al., 2016).

Several scholars' perspectives on additive bi/multilingual education align with the goals of MTB-MLE. These goals include: (1) developing lifelong learners proficient in their first language; (2) fostering active inquirers, critical and creative thinkers, problem solvers, and decision-makers; (3) nurturing and preserving learners' love and respect for their heritage; (4) facilitating learners' integration into national society; and (5) fostering unity among the multicultural and linguistically diverse Filipino populace (DepEd, 2013).

The implementation of MTB-MLE occurs in two (2) modes: as a learning/subject area and as a medium of instruction. The Mother Tongue (MT) as a subject focuses on developing beginning reading and fluency from Grades 1 to 3. The learner's Mother Tongue (L1) serves as the medium of instruction (MOI) in all domain/learning areas from kindergarten through Grade 3, except for Filipino (L2) and English (L3). They will continue to use L1 as the MOI in transitioning or bridging through Grade 3. In the first semester of Grade 1, they introduce L2 for oral fluency, while in the 2nd semester of Grade 1, they introduce reading and writing (Giron et al., 2016).

L2 is introduced for oral fluency in the first semester of Grade 1, while reading and writing are introduced in the 2nd semester. The four macro skills—listening, speaking, reading, and writing—will be continuously developed from Grades 2-6. Oral fluency will be introduced in the first semester of Grade 1 for L3, while reading and writing in L3 will commence in the first semester. The four (4) macro skills development begins in the second semester of Grade 2 and continues until Grade 6 (Alcudia et al., 2016).

According to any of the following models, the MOI utilizes MT as the MOI:(Model 1) Public schools instruct Kindergarten or Grade 1 in the children's MT. (Model 2) Schools where pupils speak three (3) or more MTs or variations of LF without approved orthography shall use the Lingua Franca in that area as the MOI. If the teacher can develop oral fluency, they may conduct special classes offering the children MT twice weekly. They shall bridge oral fluency skills to any LF and other languages prescribed in reading and writing development. When schools have trained teachers and developed learning resources with an approved orthography of the MT, they are encouraged to use the desired MT. In such situations, the School Head (SH) shall inform the Division Office (DO) so that the DO can provide technical assistance and evaluate learning resources to meet the national standards for learning resources (DepEd Order no. 16, s. 2012).

DepEd Curriculum guides for all grades and learning areas of the subjects provide a standard curriculum for all students in both public and private schools. DepEd allows the regions, divisions, and schools across the country to contextualize and localize the curriculum for better learning outcomes. Private schools are free to modify the K to 12 curriculum according to the vision, mission, and goals of the schools and the curricular needs of their students. There are two primary components of the Core Curriculum. These are the required domains/subjects and the standards—content standards and performance standards together with the essential competencies for all subjects from Kindergarten to Grade 12 (Giron et al., 2016).

DepED Region 2 (2016) prepared a memorandum containing guidelines related to the conformance of learners' language. The memorandum includes the following: Educators must group learners according to their language or Mother Tongue. The schools determine this through language mapping by conducting the Classroom-level Language Mapping Form. Should there be a more significant number of learners in other languages than the native language spoken by the school, classes can be organized catering to two languages without disregarding the needs of different learners (for big and medium schools). Further, the school determines the appropriate early language and literacy programs for the K to 3 foundational stages, including assessing the language used in instruction and assessment inside the classroom.

In the Philippines, there are two types of schools. Public schools are government-funded educational institutions managed by the Department of Education (DepEd). Private schools, on the other hand, are not government-funded and are governed by individuals or organizations (Atonibai, 2023). Regarding the curriculum of private and public schools, it is quite different. Government schools follow a standard curriculum, while private schools have a more pronounced space for innovation, creativity, flexibility, and cultural or ideological specialization—including religious education (Acidre, 2019).). In the Philippine settings, private schools teach their pupils to read in English in Grade 1. On the other hand, under the MTB-MLE applied in public schools, reading in English is only introduced in the second semester of Grade 2 (Albano Jr, 2021).

Another factor that differentiates the two is the administrative workload of the teachers. The chronically overworked state of public school teachers in the Philippines is well-known (David et al., 2019). Workload intensification, as a form of educational practice, decreases teachers' overall efficiency and efficacy inside the classroom (Tarraya, 2023). Owoh (2016) found a significant correlation between students' achievement and teacher effectiveness.

The study (Kachingwe & Nithyanantham, 2023) examined the factors affecting curriculum implementation in achieving high academic performance. Researchers found that factors such as lack of resources, lack of qualified teachers, poor student motivation, lack of school fees, poor curriculum implementation, poor teacher motivation, poor administrative leadership, and long-distance affected curriculum implementation in achieving high academic performance.

Longchasen (2023), on the other hand, found out that 1) the majority of the respondents confirmed the moderate implementation of the mother tongue based-multilingual education in private preschools; 2) the satisfactory level of skills of the teachers in using mother tongue-based-multilingual education were confirmed by most of the respondents; 3) a significant number of the respondents viewed that the factors that affect the implementation of mother tongue based-multilingual education are moderately severe; and 4) teachers affirmed their moderate use of the interventions to improve the implementation of mother tongue-based multilingual education compared to the never use views of the school heads.

Numerous educators witnessed the advantages of MTB-MLE, as noted by Parba (2018). Blacano's (2020) research provided a notable example of successful MTB-MLE implementation. The study underscored the importance of tailoring instructional materials to the local context, highlighting its significant impact on enhancing learners' academic performance. Specifically, Blacano's investigation focused on creating a storybook in Cebuano, Minasbate, and Filipino versions, demonstrating how this approach fostered literary appreciation, literacy, and cognitive development among students. Moreover, the study revealed that learners grasped the content more effectively when instructed in a familiar language. Consequently, Blacano strongly advocated for MTB instruction and emphasized the need to train teachers in crafting context-specific and culturally relevant MT storybooks.

Similarly, Englis and Boholano (2021) underscored their research's significance of contextualization and innovation in implementing the MTB-MLE program. They found that employing contextualized teaching methods using MTB instruction enabled students to comprehend lessons more efficiently, encouraging active participation in class discussions and enrichment activities. Additionally, innovative teaching approaches empowered teachers to explore new methods and content, ensuring optimal learning experiences, particularly in achieving fundamental mathematics skills. Teaching mathematics in the mother tongue enhanced students' retention skills and performance, ultimately proving effective and beneficial to their learning outcomes.

Ricablanca (2014) yielded similar results in her study on the effectiveness of mother tongue-based instruction in mathematics for Grade I pupils. The research revealed that pupils taught using mother tongue-based instruction outperformed those taught in English in post-tests and retention tests. She emphasized the desirability of adopting mother tongue instruction as it facilitates better and more accessible learning for students.

Furthermore, Mother Tongue Multilingual Education significantly enhanced student achievement by providing teaching and learning methods that are easily understood and closely related to students' lives (Darmini, 2021). Casinillo (2022), Falguera (2022), and Obod et al. (2019) agreed that using the mother tongue as the medium of instruction in teaching mathematics to Grade 1 pupils is effective. However, Casinillo (2022) suggested that employing both the mother tongue and English in preparing the subject proves effective, as some mathematical terms are challenging to understand when taught solely in the mother tongue. He recommended implementing an Intervention Plan in mathematics instruction to improve or maintain students' performance. This result underscores the importance of teachers' initiatives in addressing learners' needs to enhance their knowledge and competence in the subject, particularly considering the perceived difficulty of mathematics among students (Dela et al., 2023).

Mose and Kaschula (2019) assert that instruction in students' mother tongue facilitates optimal knowledge development. Therefore, proficiency in one's mother tongue facilitates the acquisition of second languages. Therefore, proficiency in one's mother tongue facilitates the acquisition of second languages. However, Medilo (2016) discovered in his study that educators observed limitations in teaching certain concepts in mathematics and the natural sciences through Mother Tongue-Based Multilingual Education (MTB-MLE). For instance, children may not utilize vernacular versions of numerical terms, and there may be mathematical and scientific concepts lacking equivalent terms in the vernacular language, posing challenges for translation efforts.

Furthermore, many students commonly perceive mathematics as challenging due to several factors. These include aversive teaching styles, difficulties in following instructions, struggles in comprehending the subject matter, and challenges in memorizing equations and problem-solving methods. As a result, a

significant correlation exists between students' perceptions of the subject's difficulty and their negative attitudes towards it (Gafoor & Kurrukan, 2015).

In the same manner, the findings of Trujillo (2020) showed that for three consecutive years of the MTB-MLE implementation, the academic performance of the pupils in various subjects using the mother tongue improved. It has positively affects pupils' cognitive, motor skills, and affective ability. On the same note, Santiago and Dagdag (2021) advocate for the effectiveness of MTB-MLE as an approach to enhance students' Science achievement, metacognitive skills, and learning processes. They argue that MTB-MLE can substantially improve students' metacognitive learning orientations.

Employing the mother tongue as the primary language of instruction in rural upper introductory classes significantly positively impacts mathematics achievement. It is, therefore, imperative for policymakers to take a second look at the language of instruction policy and make it flexible for teachers to use pupils' mother tongue in teaching and learning mathematics in rural upper primary classes to boost mathematics performance and build a stronger foundation of the subject in the pupils (Karikari et al., 2022).

In his study aiming to evaluate the impact of the Mother Tongue on teaching and learning basic science in primary schools, Ethe (2014) concluded that employing the Mother Tongue enhances pupils' academic performance compared to using English language instruction. However, he suggested the need for the development of effective teaching strategies in English, particularly for subjects like basic science, where specific formulas and concepts may lack equivalents in the Mother Tongue. Additionally, Ethe recommended promoting Mother Tongue usage, particularly in rural areas, as a viable approach for teaching and learning primary science.

On the contrary, Adriano et al. (2021) revealed in their study that while most teachers, parents, and students have a positive attitude toward implementing the MTB-MLE policy, teachers and parents still prefer using English as a medium of instruction. Although there is a positive perception of the Mother Tongue-Based Multilingual Education (MTB-MLE) policy, ensuring its full acceptance and practical implementation among teachers, parents, and students remains challenging. Convincing stakeholders of the benefits that the language policy brings to students' literacy and overall quality of education is crucial.

A study conducted in the African region (Nigeria) found that the mother tongue strategy in teaching is effective. The research revealed a notable disparity in students' academic performance using their mother tongue compared to those taught through conventional approaches, particularly in literacy and numeracy skills. Students exposed to mother tongue strategies demonstrated notably higher average scores in post-assessment literacy and numerical skills. This finding underscores the effectiveness of the mother tongue approach in bolstering students' proficiency in literacy and numeracy within primary schools in Osun state, irrespective of gender.

In the same way, the result of the study by Cabansag (2019) on the stakeholders' perspective on the implementation of MTB-MLE indicated four main benefits of MTB-MLE: expressing better ideas, building self-confidence, better retention, and promoting a friendly environment. Thus, the recommendation was to involve local stakeholders in the implementation of DepED Orders to contribute to the success of MTB-MLE. Accordingly, Yap-Dequiña and Oliva (2022) observed a more profound comprehension, heightened engagement, active exchange of thoughts and ideas, and enhanced confidence among learners attributable to using the mother tongue as the language of instruction. Similarly, Trujillo (2020) reported similar findings regarding the impact of mother-tongue instruction on learner participation and confidence.

Gaylo (2020) also discovered that using MTB-MLE increased students' ability to share knowledge, increased class interaction, boosted their curiosity, and enhanced their ability to learn faster because it simplified difficult lessons. It also motivated learners to attend classes, thereby decreasing absenteeism. Moreover, students gained a deeper understanding of the lesson, participated actively in class, freely expressed their ideas, increased and strengthened their self-confidence, and improved their academic ability (Aliab et al., 2018).

Many studies have proven that the MTB-MLE curriculum has had positive results. However, the implementation encountered some problems. For instance, Valerio's (2015) study revealed that one of the hindrances to effective curriculum implementation is the need for instructional resources transcribed in the mother tongue. In addition, Cabansag (2019) and Trujillo (2020) found that more instructional materials and mandatory compliance with the Department of Education (DepEd) Orders were needed to improve the implementation.

Additionally, the study of Namanya (2017) revealed that children taught in the mother tongue demonstrated a decline in English literacy level, confirming specific language acquisition theories and fears of some scholars. Teachers' resistance to the policy stems mainly from entrenched colonial attitudes, perceived linguistic complexity, and a lack of recognition of the practical value of local languages. Different from a mismatch in the students' language and the language of instruction, lack of equivalent local terms for some mathematics terms and haphazardly done teaching and learning materials are the challenges that impede teachers' effective implementation of the policy (Tenorio, 2022).

However, Villarta (2022) has demonstrated that the innovativeness of teachers in creating teaching and learning materials in MT effectively improves the learning performance of the learners.

For instance, Harahap (2022) proved that using a valid and practical MTB MLE model in English language learning like providing English Lesson Plans, teaching materials, teachers' and students' guidebooks, students' worksheets, and teaching media designed by the teachers were found useful and have benefited the learners from rural areas. Consequently, researchers found that students became more active in learning English, increased their vocabulary mastery, and responded positively to learning English in a remote learning environment.

Meanwhile, Apolonio (2022) concluded that there is a need to re-evaluate the MTB-MLE in the Philippines since many language acquisition theories stress learning English at an early stage, and teaching English is not the exclusive concern of the English teacher. Likewise, he highlighted the necessity of English proficiency for learners, citing the prevalence of written and online content in English and the predominant use of English in social media platforms. He advocates using the mother tongue as a supplementary or supportive language in teaching. He further explained that the exclusive use of students' mother tongue as the medium of instruction for all subjects in MTB-MLE in the Philippines (excluding English and Filipino) not only hinders but also impedes the development of students' English language proficiency. He also noted that it poses challenges for English teachers aiming to enhance students' English skills, as other instructors in the MTB-MLE program inadvertently teach using mother-tongue equivalents of English terms.

Consequently, the English language is relegated to being merely a subject in grade school, needing more significant application in other subject areas. This result corroborates the conclusions drawn by Williams et al. (2014) regarding one of the challenges encountered during implementation, particularly concerning classroom materials such as textbooks. They highlighted that the structure of the Mother Tongue utilized

in textbooks might need to align with the language acquired or employed by teachers and students in their specific locale. This variation in orthography can lead to confusion for both parties involved. Moreover, their study revealed that many children were unfamiliar with several aspects of mother tongue orthography, and some teachers admitted needing more support and training. Additionally, they observed that schools were accommodating migrant pupils whose dialects differed from the majority population in a given area.

While acknowledging the effectiveness of MTB-MLE, it is essential to emphasize that the mother tongue (MT) utilized should align with the contemporary language spoken and understood by the learners' community. Rather than relying on the MT of their ancestors, the focus should be on employing the language currently used within the community. This approach ensures that the MT utilized in schools reflects the learners' present-day linguistic landscape and cultural context. The goal of integrating MT into education should be to facilitate effective communication of ideas that are culturally relevant to the students rather than attempting to revive the past's outdated language and cultural practices. Teaching in a language easily understood by the learners, precisely their MT, is the best way to facilitate communication that eventually leads to successful learning (Santiago& Dagdag, 2021).

In the same way, Tonio and Ella (2019) addressed the challenges encountered when translating technical terms in MTB-MLE, particularly in subjects like Science and Mathematics. They identified several issues related to its implementation, including difficulties with translation, teachers' limited proficiency in the mother tongue, students' low proficiency in the mother tongue, the decline in English proficiency, and a lack of training for teachers in teaching the mother tongue. These difficulties highlight the complexity of effectively incorporating the mother tongue into education, especially in technical subjects. Thus, Gaylo (2020) stated that the limited vocabulary makes implementing MTB-MLE goals challenging, for students may need more language comprehension.

In that way, Abrea et al. (2020) say that MTB-MLE became a barrier instead of a bridge to learning concepts in English. As a result, teachers have found teaching mathematics and science challenging due to their pupils' limited English vocabulary, resulting in difficulties with spelling, reading comprehension, and solving word problems. Teachers commonly use translation to transition students from their mother tongue (L1) to English (L2) to address this issue. Experts recommend that proper training be provided to teachers to manage this transition process effectively, thereby improving the learning outcomes for students. This result aligns with the findings of Medilo's study (2016), as he emphasized that teachers need to prepare themselves regarding competencies and skills and ensure the provision of necessary resources from training to learning and instructional materials. The training provided to teachers by the national government needs to be improved, and the instructional materials available need to be improved to address the learning needs of the children.

Gempeso and Mendez's (2021) findings revealed discrepancies, incongruences, and insufficiencies in administering assessments aligning MT as a subject area. These challenges led to the learners' four macro skills underdevelopment and created a discrepancy between classroom implementation and language policy. Similarly, the adoption of MT as a medium of instruction encountered similar issues. Nevertheless, translation and code-switching between L1, L2, and L3 aided student comprehension and participation. As a result, stakeholders urged policymakers and teachers to conduct a thorough review of the policy and its implementation, recognizing its significant impact on the holistic development of students.

Another challenge in the implementation was the inability of newly hired teachers, who needed to gain pedagogical competence and were confronted with precocious students, to respond effectively during teachable moments (Monje et al., 2021). Furthermore, the COVID-19 pandemic has introduced additional factors impacting teaching and learning. Educational institutions have felt compelled to uphold their educational responsibilities to students while implementing new teaching delivery methods. However, transitioning to various remote learning approaches has posed a significant adjustment for educators and learners, particularly in mathematics, where traditional in-person instructions and hands-on exercises have long been the standard. The study highlights challenges associated with the effective delivery of mathematics instruction, including distractions stemming from non-teaching responsibilities, curricular modifications, alignment of instructional materials, and the need for parental/guardian and teacher orientation to remote learning platforms. The pandemic may not be the final disruption affecting the education system, underscoring an elevated level of challenges in mathematics teaching. Thus, there is an urgent need to readjust policies and procedures affecting environmental learning conditions such as distractions, family-work-life balance, communication technology, rationalization of non-academic duties, increased participation, and support of parents and guardians (Dela Cruz et al., 2023).

Overall, the literature consistently identifies two primary challenges in implementing mother tongue-based multilingual education (MTB-MLE): the lack of sufficient teacher training and the difficulty in creating suitable learning materials—however, supportive elements aid implementation, with significant contributions from external groups beyond government involvement. Notably, support from non-governmental organizations (NGOs), higher education institutions (HEIs), community members, teachers, and principals emerges as a crucial factor in facilitating the successful execution of MTB-MLE initiatives (Fillmore, 2014).

In the same sense, the MTB-MLE policy presents a dichotomy in its impact, capable of either accelerating or hindering learning depending on the context of its application. When utilized as a tool to grasp concepts, it has the potential to enhance comprehension and facilitate swifter learning. However, if taught in isolation as a separate subject, it may resemble the effects of learning a second language, leading to a more linear progression constrained by factors such as time limitations, availability of human and material resources, and the scope of activities.

Espada et al. (2017) assert that the current milieu deems the newly integrated archaic words irrelevant not because they are unused at home but because children find them too complex to use and their phonetic structure too difficult to pronounce and utilize in conversations. JD (2021) found another area for improvement during the transition years from Grade 3 to Grade 4, where learners face difficulty learning when the medium of instruction is already in English in some learning areas. While Steyn (2017) suggests that people propose simply doing away with it and changing the system, emphasizing the need to consider methods of making this transition more successful or smooth.

The Department of Education (DepEd) aimed to implement MTB in the early grades to address language barriers and facilitate smoother language acquisition. However, the stakeholders confirmed that the children, the parents, and even the teachers had experienced difficulty in learning due to the unfamiliar vocabulary used in the MTB textbooks, which even the parents and the teachers could hardly comprehend (Gonzales, 2018).

Monje et al. (2021) concluded that while numerous benefits are associated with implementing the MTB-MLE program, there are also significant drawbacks. Specifically, they noted that public schools in the Philippines must be adequately prepared and equipped to integrate the MTB-MLE system. Undeniably,

some teachers preferred using their mother tongue language as a medium of instruction in the mother tongue subject only since their class composition is not all native speakers of the region's lingua franca (Saavedra, 2019)

Albano (2023) stated that Cordillera schoolchildren learn better with English and Filipino than with L1 as a medium of instruction. The findings discussed by DepEd-Cordillera regional director Estela Cariño during the Senate Committee on Basic Education, arts, and Culture public hearing on the MTB-MLE revealed a decline in the quality of education, particularly in the Cordillera region. Director Cariño emphasized that this decline indicates broader challenges the country faces while implementing the MTB-MLE program.

Overall, stakeholders encountered challenges and discrepancies in the implementation of MTB-MLE, as their expectations needed to align with the actual execution of the program. There needed to be more communication between policymakers and implementers and more engagement with other stakeholders, such as parents. Consequently, a significant gap exists in bridging the mother tongue (MTB) and English, which is crucial for the children's future (Gonzales, 2018).

Curriculum implementation stands as a pivotal stage in curriculum development. It involves the practical enactment of the written curriculum outlined in syllabi, course of study, curricular guides, and subjects. This process facilitates learners in acquiring the planned knowledge, skills, and attitudes intended to enable them to function effectively in society (Bilabao et al., 2015).

Ornstein and Hunkins offer a perspective on curriculum implementation, describing it as the dynamic interplay between the planned curriculum and the individuals tasked with delivering it, particularly teachers. They outline key elements of curriculum implementation, including transitioning from an existing curriculum to a new or enhanced version, facilitating transformation in knowledge, actions, attitudes, or the individuals involved, modifying behavior through the adoption of novel strategies and resources, and ensuring that change efforts are realistically achievable (Bilbao et al., 2015).

Loucks and Lieberman define curriculum implementation as the practical application of a new educational practice within a school system, emphasizing its role in bringing about desired changes and improvements (Bilbao et al., 2015).

Bilbao et al. (2015) highlight the presence of two opposing forces within the educational landscape: the driving and restraining forces. When these forces are in equilibrium and balanced, the system remains in a status quo, resulting in no significant change. However, change will likely occur if the driving forces outweigh the restraining forces. Conversely, if the restraining forces dominate, change is prevented. This concept draws from Kurt Lewin's Force Field Theory, which posits that reducing restraining forces may be more effective in facilitating change than simply increasing driving forces. In essence, Lewin suggests that altering the conditions that inhibit change is critical to successful curriculum change and implementation.

Ideally, curriculum implementation involves development, participation, and support. Firstly, it should be developmental, meaning that it fosters the growth of multiple perspectives, promotes integration, encourages autonomous learning, cultivates openness and trust, and recognizes and reinforces teachers' strengths. Additionally, there should be ample support for teachers as they embark on new tasks, encouraging reflection on their experiences and providing opportunities for growth and challenge (Bilbao et al., 2015).

Ultimately, educational leaders are crucial in cultivating a positive school culture and fostering collaboration among teachers to share best practices and align with common goals. Furthermore, leaders

need to establish a supportive environment that offers constructive feedback and encourages open communication to facilitate the professional development of staff members (Dinsdale, 2017).

Peer support, guidance from principals, and engagement with external stakeholders are vital factors contributing to the success of curriculum implementation. When teachers collaborate, exchange ideas, address challenges, develop innovative materials, and acknowledge achievements, the likelihood of successful implementation significantly increases (Bilbao et al., 2015).

With regards to leadership style, school leaders should be equity-oriented to develop deep knowledge about the ethnicities, languages, cultures, religions, and living circumstances of students' families and use that knowledge to align the school's priorities with the best interests of their students' families and the wider community (Leithwood, K, 2021). Also, tailored professional development programs focusing on transformational leadership behaviors can further enhance management empowerment, ultimately fostering a positive work environment and driving teacher effectiveness and student learning outcomes (Kilag et al., 2023).

Correspondingly, teachers' professional development is also vital to the success of the curriculum implementation, for it contributes to learners' academic performance (Osei-Owusu (2022). Updating teachers' knowledge in pedagogy and subject matter is tantamount to improving students' achievement. This result suggests that elevating the quality of the teaching workforce corresponds to enhancements in student outcomes (Olubunmi et al., 2023).

Curriculum Review

Educational institutions in the Philippines fall into two main categories. Public schools receive government funding and are overseen by the Department of Education (DepEd), while private schools operate independently under the management of individuals or organizations (Atonibai, 2023). These two types of schools diverge significantly in their curriculum approaches. While public schools adhere to a standardized curriculum, private schools enjoy greater autonomy, fostering innovation, creativity, flexibility, and cultural or ideological specialization, which may include religious education (Acidre, 2019).

DepEd Curriculum guides for all grades and learning areas of the subjects also provide a standard curriculum for all students in both public and private schools. DepEd allows the regions, divisions, and schools across the country to contextualize and localize the curriculum for better learning outcomes. Due to its autonomy, private schools are free to modify the K to 12 curriculum according to the schools' vision, mission, and goals and the curricular needs of their students (Giron et al., 2016). Thus, there is a notable difference in carrying out English language instruction. Private schools typically begin teaching English reading skills in Grade 1, while public schools, following the MTB-MLE (Mother Tongue-Based Multilingual Education) approach, introduce English reading in the second semester of Grade 2 (Albano Jr, 2021).

Curriculum evaluation is defined in various ways by curricularists. Ornstein and Hunkin describe it as a process to gather data to determine whether the entire curriculum or a textbook should be accepted, changed, or eliminated. McNeil focuses on answering questions about whether planned learning opportunities, programs, courses, and activities produce the desired results and how the curriculum can be improved. Gay views curriculum evaluation as identifying weaknesses, strengths, and problems encountered during implementation to enhance curriculum development and assess the effectiveness of allocated finances. Finally, Olivia defines curriculum evaluation as delineating, obtaining, and providing

helpful information to judge alternatives to modify or eliminate the curriculum (Bilbao et al., 2015).

Curriculum evaluation serves several purposes. Firstly, it identifies the strengths and weaknesses of an existing curriculum, serving as the foundation for subsequent planning, design, or implementation efforts. Secondly, it assesses whether the designed or implemented curriculum can achieve the desired outcomes. Thirdly, it determines if the results meet or exceed established standards, thus indicating success. Lastly, it provides essential information for teachers, school managers, and curriculum specialists to make policy recommendations to enhance learning outcomes (Bilbao et al., 2015).

Conducting curriculum evaluation involves several steps and considerations. Firstly, it is crucial to identify the primary audience, including curriculum program sponsors, managers, administrators, school heads, participants (such as teachers and students), content specialists, and other stakeholders. Secondly, stakeholders must identify critical issues or problems, considering expected outcomes, the implementation process, and available resources. Thirdly, stakeholders must identify data sources, including teachers, students, parents, curriculum developers, existing documents, available records, and evaluation studies. Then, stakeholders should determine techniques for collecting data, which may involve standardized tests, informal assessments, student work samples, interviews, participant observations, checklists, and anecdotal records. Fifthly, stakeholders should identify established standards and criteria, considering guidelines set by agencies such as DepEd, CHED, and professional organizations. Then, stakeholders should choose techniques for data analysis, such as content analysis, process analysis, statistics, comparison, and evaluation.

After conducting data analysis, stakeholders should prepare an evaluation report, which they can present in written, oral, progress, descriptive graphic, evaluative, and judgmental formats. The report should include a list of recommendations based on the findings. Lastly, stakeholders should prepare display modes, including case studies, test score summaries, testimonials, multimedia representations, productive displays, and technical reports (Bilbao et al., 2015).

Since implementing the Philippine K-12 Basic Education Curriculum, the Assessment Curriculum and Technology-Based Research Center (ACTRC) has conducted a review. The review is addressing alignment both within and across the curriculum. ACTRC (n.d.) examines the intended curriculum, the curriculum implemented in classrooms, the curriculum tested by national assessments, and the curriculum attained and retained by students as they complete various curriculum stages. It has identified trends and lessons learned within the interrelated themes of assessment, curriculum, and technology. From these trends, the Centre has made some recommendations that help steer its direction and contributions to the future of Philippine education.

Furthermore, there is a noticeable shift away from relying solely on personal experiences for educational decision-making. Instead, stakeholders emphasize utilizing evidence-based data derived from comprehensive assessment and research. The Centre has recognized that reporting student proficiency goes beyond mere grades or scores; instead, it focuses on the learner's ability to demonstrate specific skills outlined in a profile of increasing competence with precise descriptors. Educators, administrators, and policymakers are better equipped to make informed teaching and learning strategy decisions by incorporating learning progressions (ACTRC, 2020).

To promote evidence-based decisions, ACTRC recommends strengthening teachers' knowledge and competency in using proper assessment methods and learning progressions. There is a need to give equal emphasis and importance to formative and summative assessments. Expertly-trained teachers allow better alignment between assessment, curriculum, and instruction. The Centre also sees value in using

the results of large-scale assessments for system monitoring and providing diagnostic feedback. It has also seen value in using the results of large-scale assessments not only for system monitoring but also for providing diagnostic feedback. ACTRC recognizes the limitations of a crowded curriculum. While the world's ability to gain and spread knowledge is exponentially growing, the competence of teachers to cover the curriculum and students to engage with it still needs to be improved. This result places the structure at an incompatible disadvantage (ACTRC, 2023).

The Philippines is currently experiencing a similar hurdle. Additionally, prerequisite concepts or skills are necessary to achieve expected learning competencies. The curriculum also tends to have a higher cognitive demand; the difficulty level increased due to greater emphasis on cognitively demanding competencies. The pace required by such a curriculum and the need for access to learning materials limits students' possibilities to learn. While there is no singular solution to this problem, ACTRC has made some recommendations to help resolve it based on its research on curriculum review, science curriculum, and micro-certification, among others. The Centre recommends that ongoing refinements in the K to 12 curriculum require revising the sequence, appropriating the cognitive demand of learning competencies and associated grade-level standards, and expressing the target clearly for universal understanding.

ACTRC also supports programs that capitalize on the most helpful factors in enabling teachers to implement the curriculum effectively. These include conducting LAC sessions as a regular feature of teachers' in-school professional development and empowering school leaders through various training sessions. Making necessary changes in non-teaching activities would also allow them to focus and spend time improving curriculum implementation and assessment practice ACTRC, 2020).

After conducting a thorough empirical search and research, the Department of Education (DepEd) Caraga made an evidence-based presentation during the recent Caraga Regional Development Council (RDC) full council meeting in Surigao City. The presentation stated that Filipino learners have performed poorly in national and international assessments in recent years. A World Bank study in 2021 highlighted a concerning finding: over 90% of Filipino learners aged 10 struggled to comprehend age-appropriate text. Additionally, in Caraga, the 2018 National Achievement Test (NAT) results indicated that only 36.9 percent and 43.61 percent of elementary and secondary learners achieved a Mean Percentage Score (MPS) of at least 66-85 percent, indicating progress toward mastery. Among the contributing factors to these results was the overload of subjects and lessons in the previous kindergarten to grade 10 curriculum. Consequently, the Department of Education (DepEd) was prompted to revise the curriculum to address these issues (Escuadro, 2023).

Synthesis

Delving into the intricate relationship between knowledge acquisition and multilingual education reveals a captivating interplay of factors. The fusion of social context, cognitive developmental stages, sociocultural influences, innate language capacities, and cognitive load forms a rich tapestry that shapes how individuals acquire and process information. Acknowledging these interconnected elements becomes the compass guiding effective educational practices, offering invaluable support to students on their journey of acquiring, comprehending, and utilizing knowledge across diverse linguistic and cultural landscapes.

Mother Tongue-Based Multilingual Education (MTB-MLE) has exhibited positive outcomes. However, concerns include a potential decline in English proficiency, limited teaching resources, resistance from

teachers and parents, translation difficulties, standardization issues across diverse languages, cultural sensitivity challenges, and transition difficulties when shifting to other mediums of instruction. While the implementation of MTB-MLE varies across contexts, addressing these challenges requires continuous research, policy adjustments, and capacity-building initiatives to optimize the benefits of multilingual education and mitigate potential negative results. Viewing these challenges as opportunities for improvement underscores the importance of refining MTB-MLE strategies for inclusive and practical education.

In essence, the significance of studying both knowledge acquisition and the effectiveness of MTB-MLE lies in their combined power to enhance educational strategies. This comprehensive exploration provides a roadmap for educators and policymakers, enabling them to craft inclusive and culturally relevant curricula. Through this lens, education becomes a dynamic journey that optimizes knowledge acquisition, fostering a profound understanding of how language shapes and enriches the acquisition and application of knowledge within diverse linguistic and cultural contexts.

In the context of curriculum implementation and review, understanding the intricate dynamics of knowledge acquisition and the effectiveness of MTB-MLE is paramount. Curriculum implementation involves translating the theoretical underpinnings of effective educational practices, including MTB-MLE strategies, into actionable plans within the classroom. This process requires careful consideration of teacher training, resource allocation, cultural sensitivity, and alignment with learning objectives.

Moreover, curriculum review serves as a mechanism for evaluating the effectiveness of existing educational approaches, including MTB-MLE, in achieving desired learning outcomes. Through systematic evaluation and data analysis, educators and policymakers can identify strengths, weaknesses, and areas for improvement in curriculum design and implementation. This iterative process ensures that educational practices remain responsive to evolving student needs, societal demands, and educational research findings.

Stakeholders can foster inclusive and culturally relevant educational environments by integrating insights from knowledge acquisition theories and MTB-MLE effectiveness studies into curriculum implementation and review processes. This holistic approach enables educators to leverage students' linguistic and cultural backgrounds as assets in their learning journey, promoting deeper engagement, enhanced comprehension, and meaningful knowledge application across diverse educational settings.

3. Research Design and Methodology

Purpose of the Study and Research Design

The study sought to determine the level of learners' knowledge acquisition, determine the level of effectiveness of MTB-MLE in public and private schools, and identify the factors that influence the effectiveness of MTB-MLE in promoting knowledge acquisition.

This study employed a mixed-methods approach using a triangulation design. According to George (2021), mixed-method research combines quantitative and qualitative elements to answer research questions. Unlike a stand-alone quantitative or qualitative study, mixed methods help attain a complete picture, integrating both methods' benefits. In addition, Creswell defines mixed-method research as an approach to inquiry involving collecting both quantitative and qualitative data, combining the two forms of data, and using distinct designs that may include philosophical assumptions and theoretical frameworks. The core assumption of this form of inquiry is that combining qualitative and quantitative

approaches provides a complete understanding of a research problem compared to either approach alone (Kharbach, 2023).

Using a mixed methods approach in studying learners' knowledge acquisition and the effectiveness of Mother Tongue-Based Multilingual Education (MTB-MLE) in private and public schools offers a holistic understanding of the educational landscape.

Quantitatively, assessment tests in Science, English, and Mathematics were conducted to measure learners' knowledge acquisition. Survey research was also conducted to measure the perception of the effectiveness of MTB-MLE implementation among private and public school teachers. The data on knowledge acquisition and effectiveness of MTB-MLE implementation in private and public schools were correlated to determine if there were significant relationships. Correlational research is a type of non-experimental research in which the researcher measures two variables and assesses the statistical relationship (i.e., the correlation) between them with little or no effort to control extraneous variables. The purpose of using correlations in research is to determine which variables are connected (Creswell, 2018).

Focus Group Discussion was used to triangulate the data gathered. It involves gathering people from similar backgrounds or experiences to discuss a specific topic of interest. It is a form of qualitative research where questions are asked about their perceptions, attitudes, beliefs, opinions, or ideas. This research method encourages discussion with other participants. It generally involves interviewing a group of usually 8 to 12 people. It is led by a moderator (interviewer) in a loosely structures discussion of various topics of interest (Krueger, 2014).

By integrating qualitative methods such as focus group discussion with quantitative methods like surveys and tests, researchers can capture both the depth and breadth of teachers' experiences and learners' performance on the MTB-MLE Curriculum. Triangulating the findings from multiple sources enhances the credibility and reliability of the research outcomes. Additionally, qualitative methods allow for a nuanced exploration of contextual factors influencing MTB-MLE implementation, while quantitative methods provide numerical data to assess learning outcomes. This combined approach enables researchers to generate practical recommendations tailored to the specific needs and challenges identified in each school setting. Ultimately, employing a mixed methods approach facilitates informed decision-making and the enhancement of MTB-MLE programs to better serve learners in both private and public schools.

The independent variables were the knowledge acquisition of pupils in private and public schools, while the dependent variables were the effectiveness of the MTB-MLE Curriculum in private and public schools.

The statistical tools used in this study were Mean, Standard deviation, t-test, and Pearson r.

Methods

Participants. The participants of this study were three hundred forty-one (341) out of four hundred eighty learners from private elementary schools, three hundred-eighty (380) out of fourteen thousand seven hundred thirty-five (14, 735) learners from public schools, and sixty-six (66) out of one hundred twenty-one (121) teachers from private schools and seventy-nine (79) out of one thousand eight hundred eighty-eight teachers from public school who were randomly chosen served as the participants of the study. For the focus group discussion, two (2) teachers from private schools and seven (7) teachers from

public schools were purposively chosen due to their experience in both private and public school settings served as the participants.

The sample size was determined using the Slovin formula with a .05 margin of error. Slovin formula was used to calculate the minimum sample size needed to estimate a statistic based on an acceptable margin of error (Zach, 2023). Further, stratified random sampling was used to identify the participants.

Table 1: Profile of the Respondents

Profile	**f**	**%**
Sex		
Male	17	2.4
Female	128	18.3
School		
Public	79	11.3
Private	66	9.4
School Location		
Rural	73	10.4
Urban	72	10.3
School Classification		
Central School	38	5.4
Barangay School	17	2.4
Integrated School	24	3.4
Sectarian School	36	5.1
Non-Sectarian School	30	4.3
Position		
No response	66	45.5
Teacher I	24	3.4
Teacher II	13	1.9
Teacher III	37	5.3
MT I	4	0.6
MT II	1	0.1
Educational Attainment		
Bachelor	121	17.3
Master's	21	3
Doctorate	3	0.4
No. of years of Teaching		
No response	1	0.7
1-5 yrs	46	6.6
6-10 yrs	30	4.3
11-15 yrs	16	2.3
more than 15 yrs	52	7.4
No response	556	79.3
Grade 1	35	5

Grades 1,2,3	7	1
Grades 1,2,3,4	8	1.1
Grades 1,2	1	0.1
Grades 1,2,4	1	0.1
Grades 1,3	3	0.4
Grade 2	25	3.6
Grades 2,3	1	0.1
Grades 2,3,4	6	0.9
Grades 2,4	1	0.1
Grade 3	25	3.6
Grades 3,4	2	0.3
Grade 4	30	4.3
Subjects Taught		
No response	1	0.7
MT	6	0.9
MT,Sci	4	0.5
MT,Sci, Math,Eng	17	2.4
MT, Sci, Math, Eng, Others	1	0.1
MT,Sci, Math, Others	1	0.1
MT,Sci,Eng	2	0.3
MT, Math	2	0.3
MT, Math,Eng	42	6
MT, Math,Eng, Others	3	0.4
MT,Eng	2	0.3
MT,Eng, Others	1	0.1
Sci	9	1.3
Sci, Math	3	0.4
Sci. Math,Eng	5	0.7
Sci, Math,Eng, Others	7	1
Sci,Eng	4	0.6
Sci, Others	2	0.3
Math	3	0.4
Math,Eng	2	0.3
Math,Eng, Others	2	0.3
Eng	8	1.1
Eng, Others	4	0.6
Others	14	2
Medium of instruction used in the subject taught		
MT	37	5.3
MT,Eng	33	4.7
MT,Eng,Fil	40	5.7
MT,Fil	1	0.1

Eng	18	2.6
Eng,Fil	12	1.7
Fil	4	0.6
Number of days of Training in MTB-MLE		
None	71	10.1
1-2 days	14	2
3-4 days	22	3.1
5-6 days	21	3
7-14 days	10	1.4
15 days & more	7	1
Total	145	20.7

Data Gathering Instruments

Several instruments were used to gather the data needed for the study. These were the Knowledge Acquisition Assessment Test in Science, Mathematics, and English, the questionnaire on the Effectiveness of the MTB MLE Curriculum Implementation, and FGD Guide Questions. Together with these instruments, a Personal Data Sheet was used to gather the personal and professional characteristics of the teacher respondents.

Knowledge Acquisition Tests. These are 40-item objective assessment tests for each subject. Science, Mathematics, and English originally served as diagnostic tests derived from MELC using TOS adapted from Manuel (2022). These tests were used to gather the data on learners' knowledge acquisition.

The scores obtained by the respondents in the Knowledge Acquisition Tests were interpreted using the arbitrary scale given below:

Scale	**Description**
32.01-40.00	Knowledge Acquisition is very high
24.01-32.00	Knowledge Acquisition is high
16.01-24.00	Knowledge Acquisition is moderate
8.01-16.00	Knowledge Acquisition is low
0.00-8.00	Knowledge Acquisition is very low

Before using the instrument to gather the data, it was subjected to face validation by a panel composed of 5 members. Their suggestions and recommendations were incorporated into the revision of the instrument. After face validation, the instruments were pilot-tested on 30 Grade IV learners who were not included as the respondents. The results of the pilot testing per subject area were tabulated and subjected to item analysis.

Item analysis evaluates the pilot test data, including item difficulty, discrimination, and reliability (University of Washington, 2017). Items that fell outside the general acceptability guidelines for difficulty and discrimination or negative item discrimination were revised or rejected to ensure the reliability and validity of the exam.

Profile Data Sheet (PDS). Profile Data Sheet needed for the study was gathered using a researcher-made survey-questionnaire form to gather the information on the teacher's sex, type of school, school location, school classification, position, educational attainment, number of years in teaching, grade level taught, subjects taught, medium of instruction used in the subject taught and number of days training in MTB MLE.

Effectiveness of the MTB MLE Curriculum Implementation Questionnaire. This is a 38-item, researcher-made questionnaire to determine the perceived effectiveness of the MTB-MLE Curriculum Implementation as assessed by the teacher respondents. The questions included are aligned with the goals and objective of the MTB-MLE program as stipulated in the DepED Orders and Policy Guidelines (DepEd Order No. 74 (2009), DepEd order no. 16. Series of 2012, DepEd order no. 28. Series of 2013).
Before using the instrument, it was subjected to face validation composed of 5 members. Their suggestions and recommendations were incorporated into the revision of the instrument. Once face validated, the instrument was pilot-tested on 30 public elementary school teachers who were not included as study participants. The result was computer-processed and subjected to statistical computation. Cronbach alpha was used to assess the internal consistency or reliability of the questionnaire. Cronbach's alpha measures internal consistency reliability, indicating how closely related a set of items are as a group. The value of Cronbach's alpha ranges from 0 to 1. A higher alpha value indicates greater internal consistency among the items. Typically, a Cronbach's alpha of 0.7 or higher is considered acceptable for research purposes, although higher values are desirable, indicating more substantial internal consistency (Frost, 2024).
Results showed a Cronbach's alpha of .992, suggesting an extremely high internal consistency level among the items measured. This indicates that the items measured are highly correlated with each other, suggesting that they are measuring the same underlying construct. With 38 items, a Cronbach's alpha of .992 is exceptionally high and indicates that the items are very reliable in measuring the construct they were designed to measure. It also suggests that the items consistently measure the same underlying concept or trait with little error.
The instrument was responded to by the following:

Scale	Description
4	Very Effective
3	Somewhat Effective
2	Somewhat Ineffective
1	Very Ineffective

The scores obtained by the respondents in the effectiveness of MTB-MLE Curriculum implementation were interpreted using the arbitrary scale given below:

Scale	Description
32.01-40.00	Effectiveness is very high
24.01-32.00	Effectiveness is high
16.01-24.00	Effectiveness is moderate
8.01-16.00	Effectiveness is low
0.00-8.00	Effectiveness is very low

FGD Guide questions. This is a 15-item guide question used to determine teachers' observations, perceptions, opinions, and experiences regarding the effectiveness of implementing the MTB-MLE Curriculum. The data was recorded and transcribed and used to triangulate data gathered on the knowledge acquisition of learners and survey the effectiveness of MTB-MLE Curriculum implementation among teachers.

Data Gathering Procedures

The study was conducted during the second semester of the academic year 2022-2023. The initial step in

the procedure was securing necessary permission from the Division Superintendents of Roxas City Schools Division and Capiz Schools Division and the School Principals of each target public and private school. After permission was granted, the researcher gave an orientation for clarification and instructions. Then, the data gathering instruments such as the Knowledge Acquisition Assessment Tests in Science, Mathematics, and English subjects. Simultaneously, the teacher participants also answered the researcher-made survey questionnaire on the effectiveness of MTB-MLE Curriculum implementation.

Data gathered were tabulated, analyzed, and interpreted using Statistical Package for Social Science Software (SPSS). Results were treated with utmost confidentiality as stipulated in the confidentiality statement of the study information sheet.

For the qualitative technique, focus group discussion (FGD) was conducted to gather teachers' perceptions and factors affecting the effectiveness of MTB-MLE implementation. After securing confirmation from the target teacher participants, the FGD was conducted on August 12, 2023, at Bread Basket function hall, Pueblo de Panay. Two (2) private school teachers and seven (7) public school teachers were the discussants of the FGD. The researcher gave an introduction and orientation for clarification. Participants were informed that the FGD was recorded for data transcription. After the transcription, the data gathered was used to confirm or contrast with the quantitative data, resulting in triangulation.

Statistical Data Analysis Procedure

The gathered data were subjected to computer-processing using the Statistical Package for Social Science (SPSS) as follows:

Mean. This test described the knowledge acquisition and effectiveness of MTB-MLE Curriculum implementation.

Standard deviation. This test described the homogeneity and heterogeneity of the variables mentioned above.

T-test for independent samples. This test was used to determine the significant difference between the knowledge acquisition of learners and the effectiveness of MTB-MLE Curriculum implementation.

Pearson r. Set at .05 alpha of significance, this test was used to determine the significance of the relationships between knowledge acquisition and the effectiveness of MTB MLE curriculum implementation.

4. Results and Discussions

Knowledge Acquisition in Private School

Table 2 shows that private school learners' average English score is 26.21. The mean score is “high” (M=24.09, SD=5.59). This score suggests that, on average, students have performed well in English. In Science, the average score of learners is 24.60. The mean score is “high” (M=24.60, SD=6.47), indicating that the learners perform well in Science. In Mathematics, however, the average score of learners is 21.44. The mean score is described as “moderate” (M= 21.44, SD= 5.59), suggesting a moderate level of performance in Math.

Overall, the average knowledge acquisition score of learners in private schools is 24.09, with a mean score described as “high” (M=24.09, SD=5.59), indicating a generally high level of knowledge

acquisition across all subjects. In addition, the learners' scores exhibit variability in all subjects and the overall knowledge acquisition, with standard deviations ranging from 5.59 to 7.01.

Table 2: Mean and Standard Deviation of Knowledge Acquisition of Private Schools as an Entire Group and in Terms of English, Science, and Mathematics

School		English IV	Science IV	Math IV	Entire Knowledge Acquisition
Private (N=321)	Mean	26.21	24.60	21.44	24.09
	Description	High	High	Moderate	High
	SD	7.01	6.47	6.31	5.59

Scale of Means: 32.01-40.00 Very High; 24.01-32.00 High; 16.01-24.00 Moderate; 8.01-16.00 Low; 0.00-8.00 Very Low

The descriptive analysis implies that learners in private schools have a strong mastery of foundational knowledge, skills, and concepts in Science and English subjects. Mathematics represents an average performance, implying a level of competency that falls within the middle range compared to Science and English. This result conveys that learners have developed critical thinking, analytical reasoning, and problem-solving skills in Science. Similarly, learners demonstrate effective English communication, comprehension, and interpretation abilities. However, the average performance may reflect the inherent difficulty of Mathematics. Learners might not have mastered the skills and competency or have difficulty in numerical operations, problem-solving and logical reasoning, measurement and data, and interpreting abstract concepts in Mathematics. Overall knowledge acquisition suggests that learners perform well across all subjects, which indicates a positive general academic proficiency of learners in private school settings.

The strong mastery of foundational knowledge, skills, and concepts in Science and English subjects among learners in private schools can be attributed to several factors. Firstly, private schools often have smaller class sizes, better teacher-student ratios, and more resources than public schools, allowing for more personalized attention and higher-quality instruction. Additionally, private school teachers are committed to academic excellence, employing innovative teaching methods and tailored learning strategies to address the various requirements of students. This dedication to effective pedagogy fosters deeper comprehension and mastery of Science and English concepts among learners.

Another factor is that learners in private schools are mostly from families with higher socioeconomic backgrounds and may often have greater access to educational resources, such as books, technology, the Internet, private tutoring, and language enrichment programs, which help facilitate a more comprehensive learning experience. This access can contribute to a more thorough and enriched English language learning experience across subjects.

Moreover, private schools' implementation of the MTB-MLE Curriculum uses English as a medium of instruction. Using English as a language of teaching in private schools could be linked to good student achievement in Science and English topics. Private schools frequently value English language competence as part of their curriculum. This emphasis on English language development guarantees that students have good reading, writing, listening, and speaking abilities, which are required for success in

different disciplines. Proficiency in English enables students to access diverse educational resources, such as textbooks, scientific journals, and literary works, frequently available in English. This access to resources allows students to delve deeply into subject matter, comprehend complicated concepts, and successfully explain their ideas.

Furthermore, using English as the primary language of teaching in private schools creates an atmosphere in which students are motivated to interact, work together, and critically evaluate information in the language during science experiments and English language arts exercises. Furthermore, private schools frequently attract academically driven students and families who prioritize education and see English proficiency as a means to academic and professional achievement. As a result, private school students who are fluent in English are better prepared to achieve academically in both Science and English topics, resulting in good performance in these areas.

However, when it comes to Mathematics, the average performance suggests a level of competency within the middle range. This result may be due to the inherent difficulty of Mathematics, which often requires abstract reasoning, logical thinking, and problem-solving skills. Unlike Science and English, where learners may find more opportunities for hands-on learning and language-based activities, Mathematics can be perceived as challenging due to its emphasis on numerical manipulation and mathematical reasoning. Some learners may find Mathematics challenging compared to English and Science. It often deals with abstract concepts and symbols, which may be difficult for students who prefer concrete and tangible examples.

Furthermore, mistakes in Mathematical calculations can lead to incorrect answers, and the need for accuracy can add to the perceived difficulty. Further, there is often a single correct answer or a specific problem-solving method. This limited room for interpretation can make it more challenging than subjects like English, where understanding and expression can vary.

A participant from private schools mentioned during the FGD that most of their learners are fluent in English, as most have English as their first or dominant language. In that sense, they supposed that teaching in Mother Tongue (Hiligaynon) is no longer necessary for private school learners since they can read, comprehend, and speak English well.

Participant No.9: "Most of our learners speak English fluently. As in most of them, ila na first language is English. So amo na gani no, if ang iya purpose is maging bridge sya to learn L2 which is English daw no need na tani sini sang MTB. Kay naga hambal na ya ang mga bata kag readers na sila sa English. When it comes to comprehension mayad naman ya maam ang mga bata kay English has become natural to them."("Most of our learners are fluent in speaking English. In fact, for most of them, English is their first language. If the purpose is to serve as a bridge for them to learn their second language, English, there might not be a need for Mother Tongue-Based Multilingual Education (MTB). Because the children are already speaking and reading in English. When it comes to comprehension, the children are good because English has become natural to them.")

Moreover, they also mentioned that they find it easy to facilitate the learning process when using English as a medium of instruction since learners can easily understand the discussion.

Participant No.9 "Pero syempre kay amon na MOI is English hupos na ya sa mga bata mag intindi sang lesson kay English speaking naman sila. Mahatag ka instruction hupos lang sa ila mag follow. Kung baga wala naya language barrier when teaching and learning kay fluent sila sa English. Kis a daog pa gani kami nga mga teacher… grabe na ila mga English terms. Magdiscuss kami sa Science easy lag sa ila mag catch up and maka comprehend sang discussion."(But, since our MOI is English, the children

quickly understand the lessons because they are English speakers. We discuss in English, Science, and Math; it is easy for them to catch up and comprehend the discussion).

The teacher participants also confirmed that learners find mathematics challenging since it requires various problem-solving techniques to arrive at the correct answer. Therefore, learners must carefully analyze the problem to get the correct answer.

Participant No.9: "Amo lang gd na abi ang problem sa Math kay budlay sya nga subject kay may solving. So they have to be careful guid…"(The problem with Math is that it is difficult because it involves problem-solving. So they have to be very careful...").

These findings empirically support previous research showing that students taught in English showed significant progress in their English proficiency (Namanya, 2017). That is why English is still the preferred mode of instruction by teachers and parents to focus more on teaching in English (Martin, 2018 & Adriano et al., 2021). Moreover, according to Panezai (2023), instruction in familiar languages increases the confidence level of the students, thus encouraging participation inside the classroom without any hesitation. Therefore, using the English language in private school teaching and learning contributed to learners' higher performance in English and Science subjects. It is easy for teachers and students to teach or learn English because they already use those languages at home and school (Tonio & Ella,2019). This notion is also in consonance with the Cognitive Load Theory that emphasizes the importance of minimizing cognitive load through clear and straightforward language as the medium of instruction alleviates the burden on learners, ultimately enhancing their comprehension and retention of information (Sweller, 2011; Main, 2023).

In the same way, Science performance is highly affected by students' reading comprehension, which is essential for Science achievement and improves the relationship between the language characteristics of the written (Cruz Neri et al., 2019). On the other hand, Dela Cruz and Hernandez (2023) stated that Mathematics is perceived as a generally complex subject area. Most students consider it a complex subject due to its aversive teaching style, difficulty in following instructions, difficulty understanding the subject, and difficulty remembering its equations and ways to solve problems. Thus, there is a strong association between learners' beliefs regarding the difficulty of the subject and their dislike of Math (Gafoor & Kurrukan, 2015).

In line with this, another study conducted by Langoban (2020) states that some students experiencing difficulty in Math tend to associate the causes with the teachers, mentioning the pace of teaching, strategies, and methods used by the teacher, and the teachers' sensitivity.

Moreover, parenting behavior and educational support for their children could cultivate children's learning habits and affect academic performance (Li, 2018). A home environment that values education and emphasizes language and learning development can positively impact a student's knowledge acquisition skills. In their study, Jain and Mohta (2019) stated that a positive relationship was found between the home environment and the student's academic achievement, supporting this notion. Pupils with parents interested in their education performed better academically and scored higher on tests across all subject areas (Naite,2021). Khan et al. (2019) recommended that providing learners with a comfortable and conducive home learning space improves their learning. Finally, Munir et al. (2018) link socioeconomic status to improved academic performance, development of skills, and increased motivation, highlighting the significant influence of socioeconomic factors on educational outcomes.

Knowledge Acquisition in Public Schools

As indicated in Table 3, the average score of public school learners in English is 19.12. The mean score is "moderate" (M=19.12, SD=8.60). This score shows a moderate level of performance in English. In Science, the average score of learners is 18.57, with a mean score described as "moderate" (M=18.15, SD=8.69), which also suggests a moderate level of performance in Science. The average Math score of learners is 17.81. The mean score is also described as "moderate" (M=17.81, SD=7.18), indicating a moderate performance level in Mathematics.

The overall knowledge acquisition of learners in public schools is 18.50, with a mean score described as "moderate" (M=18.50, SD=6.96), suggesting a moderate level of overall knowledge acquisition across all subjects. Public school learners exhibit variability for all subjects and the overall knowledge acquisition, with standard deviations ranging from 6.96 to 8.69. The standard deviations suggest variability in scores, with a higher variability in English and Science. This variability may indicate a broader range of performance levels among students in public schools, especially in English and Science.

Table 3: Mean and Standard Deviation of Knowledge Acquisition of Public Schools as an Entire Group and in Terms of English, Science, and Mathematics

School		English IV	Science IV	Math IV	Entire Knowledge Acquisition
Public (N=380)	Mean	19.12	18.57	17.81	18.50
	Description	Moderate	Moderate	Moderate	Moderate
	SD	8.60	8.69	7.18	6.96

Scale of Means: 32.01-40.00 Very High; 24.01-32.00 High; 16.01-24.00 Moderate; 8.01-16.00 Low; 0.00-8.00 Very Low

The result suggests a baseline understanding of academic proficiency in public schools indicating that public school learners have average mastery of foundational knowledge, skills, and concepts in Science, English, and Mathematics. Similarly, the average knowledge acquisition score shows a consistent performance across all subjects. Public school learners, on average, are achieving a similar moderate level of knowledge acquisition in each subject.

The curriculum implementation approach, the learner's socioeconomic status, and the learning environment may have affected this result. For instance, the practice of implementing MTB-MLE in public schools is to use the Mother Tongue (Hiligaynon) as a medium of instruction for Science and Mathematics from Kinder to Grade 3. The shift to English as a medium of instruction in Grade 4 may require learners to adapt to a new language for academic tasks, potentially impacting their performance. Each subject, including English, Science, and Mathematics, has its subject-specific vocabulary. For example, a Grade 4 student who was used to learning Science in Hiligaynon had to suddenly switch to English, which may lead to a temporary dip in their academic performance.

In the same manner, the socio-economic status of learners in public schools may have contributed to moderate knowledge acquisition of learners in English, Science, and Math. Learners from lower socio-economic backgrounds may have limited access to educational resources such as books, technology, and extracurricular learning opportunities, which can hinder their academic progress. Economic constraints

might also lead to less stable home environments and limited parental involvement or support in their education. Additionally, public schools in lower socio-economic areas may face challenges like larger class sizes and insufficient funding for advanced educational programs and materials. These factors collectively create an environment where students might not receive the same level of personalized attention and support, ultimately impacting their performance in key subjects like English, Science, and Math.

Furthermore, the learning environment in public schools may also contribute to moderate performance in Science, Math, and English. In this case, overcrowded classrooms may limit the amount of individual attention each student receives, making it challenging for teachers to address diverse learning needs effectively. Besides, public schools in underfunded areas might struggle with maintaining a safe and supportive atmosphere, impacting student focus and motivation. All these factors combined create a learning environment that may not fully support or inspire students, leading to moderate performance in critical subjects like Science, Math, and English.

The teacher participants from public schools shared the challenges faced by students as they transition through different grade levels in a multilingual environment. Participant No. 6 highlighted the significant adjustment required when students reach Grade 4, where the medium of instruction shifts predominantly to English, posing difficulties particularly in grasping complex terms in different areas of discipline. This observation aligns with the experiences shared by Participant No. 5, who underscores the challenges in Math when students must translate numerical concepts into words, a task complicated by their unfamiliarity with certain terminologies.

Participant No. 6: “Pag abot tuod sa Grade 4 ya ina gina hambal namon mabudlayan gid ni ang Grade 4. Grabe gid nga pag adjust syempre English na nga daan sila mo. Gani ang manug grade one naman ang mabudlayan. Pero kung ara na guid man sila Ma’am naka adjust na sila okay na ang one to three. Didto nman ya ang Grade four galalain nman sila. Kay taga grade maam ga budlay nga ga budlay ang mga term nga gina gamit. Like sa mga parts of speech guid.”("When they reach Grade 4, we always say that it will really be challenging for them. It's a big adjustment because they have to start using English. As the child enters in Grade 1 they find it challenging but they gradually adjust until Grade 3. However, once they reach Grade 4, they find themselves struggling again, since they will be encountering difficult terms as they move up to another grade level, just like in parts of speech.")

Participant No. 5: “Kay ang tanan abi maam nga medium of instruction sa grade 1 grade 2 and grade 3 Hiligaynon except English and Filipino. Ang sa Math gd akon na kwanan(nabudlayan) kay diba may ara sa Math nga isulat mo ang numbers sa words. Kay diba may ara sina tinaga. Isulat sa tinaga. Ma’am ano ang tinaga? Bisan sa MTB nang ang noun, likga. Ayawan man kami sina M’aam una una.” ("Because the medium of instruction in Grade 1 to 3 is Hiligaynon, except for English and Filipino. What I find difficult is in Math because there are parts where you have to write the numbers in words. Because there are words for those numbers. “Isulat sa tinaga.” Ma'am, what is “tinaga”? Even in MTB, the noun is 'likga'. We're not familiar with that, Ma'am, at first.")

The experiences and observation shared by the teacher participants is supported by a teacher from Region XI, stating that when learners reach intermediate grades, they will have possibilities for another language struggle. This usually occurred during the transition period from Grade 3 to Grade 4 when the medium of instruction is already in English in some study areas (JD, 2021). Thus, Steyn (2017), noted that more consideration is needed to make the transition more successful or smooth.

Moreover, according to the Language Acquisition Theories of Noam Chomsky and BF Skinner, language proficiency and development are guided by the choice of a medium aligned with the linguistic capabilities of the learners (Main, 2023). Therefore, there should be a thoughtful selection of instructional design since language impacts teaching and learning (Giron et al. (2016).

In addition, MTB-MLE aimed to bridge language difficulty in lower grades. However, many stakeholders confirmed that the children, the parents, and even the teachers had experienced difficulty in teaching and learning due to the unfamiliar vocabulary used in the MTB textbooks, which even the parents and the teachers could hardly comprehend (Gonzales, 2018).

On the other hand, most of the learners enrolled in public schools belong to low-income families. Poverty affects education in various ways. Children from impoverished backgrounds often lack the basic needs for their well-being, such as food, sanitation, security, and the like; thus may affect their acquisition of knowledge (Steyn, 2017).

The influence of socioeconomic status on educational outcomes is apparent. Families in economically disadvantaged communities may struggle to provide their children with essential educational resources, such as textbooks, learning materials, and access to technology. The lack of these resources can significantly hinder the learners' ability to engage effectively with their studies, impacting academic performance. The stress and instability often accompanying poverty can profoundly affect a child's ability to learn and succeed in school (GGI insights, 2024). Understanding and addressing these resource gaps is crucial for improving academic performance in these communities.

Moreover, the physical learning environment at home may be sub-optimal due to factors such as overcrowded living conditions, noise, and lack of a dedicated study space. Unstable home situations and the stress that comes with poverty might negatively affect a child's academic performance (GGI Insights, 2024). A challenging home environment can make it difficult for learners to focus on their studies and may contribute to moderate academic performance.

Further, public schools in economically disadvantaged areas may experience higher student-teacher ratios, making it challenging for teachers to provide individualized attention and support. Typically, when there are fewer students per teacher, there may be more potential for personal attention and support. A lower student-teacher ratio means the teacher may be able to spend more time with each student, providing constructive feedback (Gourault, 2023). Larger class sizes can affect the quality of instruction and hinder students' ability to grasp complex concepts.

Effectiveness of MTB-MLE Curriculum Implementation in Private Schools

Table 4 presents the average effectiveness score for MTB-MLE curriculum implementation, rated by private school teachers as 2.72. The mean score is "moderate" (M=2.72, SD=0.78), indicating moderate effectiveness. The standard deviation is 0.78, which suggests low variability in the perceived opinions or assessments of the effectiveness of MTB-MLE among respondents in the private setting.

The "moderate" overall rating of the effectiveness of MTB-MLE Implementation in private schools suggests a middle-ground assessment of how well the MTB-MLE approach is being executed in private schools.

Table 4: Mean and Standard Deviation of Effectiveness of MTB-MLE Curriculum Implementation in Private Schools

Private	Mean	Description	SD
Effectiveness of MTB-MLE	2.72	Moderate	0.78

Scale of Means: 32.01-40.00 Very High; 24.01-32.00 High; 16.01-24.00 Moderate; 8.01-16.00 Low; 0.00-8.00 Very Low

The descriptive analysis of the effectiveness of the MTB-MLE (Mother Tongue-Based Multilingual Education) curriculum implementation among private school teachers indicates that, on average, private school teachers perceive the MTB-MLE curriculum as moderately effective. This outcome suggests room for improvement, but it is not deemed ineffective. The result also indicates a relatively consistent opinion among private school teachers regarding the effectiveness of MTB-MLE. The low variability suggests a shared perception, with teachers generally aligning in their assessments.

A moderate rating implies that while there may be some positive aspects of implementation, there are also likely areas that could be improved or challenges that need to be addressed. This description could also mean that there is a mix of strengths and weaknesses in implementing MTB-MLE in private schools. Some aspects of the program may work well, while others may require attention and improvement. This result further suggests that despite the independence given to private schools, which allows them to use MTB (Hiligaynon) as a learning area/subject only instead of a medium of instruction, the implementation still needs to be exempted from challenges and limitations.

The result is in congruence with the statement of Participant 8, who pointed out that learners and teachers have difficulty understanding the terms used in the MTB subject. She also mentioned that parents complain about MTB and consider learning more challenging than other subjects.

Participant No. 8: “I am actually a teacher of that subject. So far sa akon na observe, nabudlayan gid ang mga bata. Mostly be sa amon learners mga 95 percent gid English speaking. Indi sila kaintindi or nabudlayan sila maghambal using mother tongue... maski ang gamiton pa abi is ang conversational Hiligaynon, ang iban indi gd ya kaintindi. How much more using MT sa module nga madalom… indi kabalo ang mga bata kay pareho man sa public school teachers no, damo gid mga terms na indi man namon maintindihan as teachers. So what happen is nabudlayan kami… kag wala man namon gid gina pilit ang bata na magsuper use gid sang MT kay gaka trauma sila. ("I am actually a teacher of that subject. So far from what I've observed, the children are really struggling. Mostly because in our learners, about 95 percent are English-speaking. They don't understand or have difficulty speaking using their mother tongue... even if we use conversational Hiligaynon, some still don't understand. How much more using MT in modules... the children don't know because just like public school teachers, there are many terms that we as teachers don't understand either. So what happens is we struggle... and we don't force the children to use MT excessively because they get traumatized.”) …ang gwa damo sang mga ginikanan nga gareklamo kay mas mabudlay pa ang MTB kaysa sa iban na subjects.”(...many parents complain because MTB is more difficult than other subjects.")

The same difficulties were found by Espada et al. (2017), which states that when it is taught as a subject in isolation, it can take the shape of a second language, affecting a sense of linearity because learning is taught within the limits of time, human and material resources and activities. The current milieu finds the newly integrated archaic words irrelevant, not just because they are not used at home but because children find them too complex to use and their phonetic structure too complex to pronounce and use for conversations.

Thus, Santiago and Dagdag (2021) suggest that the MT in teaching and learning to be employed should be the contemporary language of the learners and not the MT of their ancestors. It should be the language currently understood and spoken by the community where the learners belong, and it does not

necessarily entail the use of terminologies of yesterday's generations. First, the purpose of using MT in school should be to facilitate the communication of ideas sensitive to the learners' prevailing cultures, not to bring back the exact language and cultures of the past. Teaching in a language easily understood by learners, precisely their MT, is the best way to facilitate communication, eventually leading to successful learning.

Considerably, these difficulties experienced by the learners and teachers can be attributed to the limited availability of MTB learning resources and limited training opportunities for private school teachers. This statement is in congruence with the study of Lartec et al. (2014), which stated that some problems teachers encounter in implementing mother-tongue-based instruction include the absence of books written in the mother tongue, lack of vocabulary and teacher training.

That being the case, support from peers, principals, and external stakeholders will contribute to the success of the implementation. When teachers share ideas, work together, solve problems, create new materials, and celebrate success, it is more likely that the curriculum implementation will be successful (Bilbao et al., 2015).

Descriptive Data Analysis on the Effectiveness of MTB-MLE Curriculum Implementation in Public Schools

As shown in Table 5, the mean effectiveness score of 3.33 suggests that, on average, respondents rated the effectiveness of MTB-MLE implementation in public schools as moderate. The mean score (M=3.33, SD=0.60), indicates a middle-ground perception of the curriculum implementation effectiveness.

The standard deviation of 0.60 suggests that individual responses varied moderately around the mean. In summary, the descriptive analysis suggests that the effectiveness of MTB-MLE in public schools is moderate on average, with low variability in individual perceptions.

Table 5: Mean and Standard Deviation of Effectiveness of MTB-MLE Curriculum Implementation in Public Schools

Public	Mean	Description	SD
Effectiveness of MTB-MLE	3.33	Moderate	0.60

Scale of Means: 32.01-40.00 Very High; 24.01-32.00 High; 16.01-24.00 Moderate; 8.01-16.00 Low; 0.00-8.00 Very Low

The descriptive analysis of the effectiveness of the Mother Tongue-Based Multilingual Education (MTB-MLE) curriculum implementation in public schools implies that the respondents perceive the MTB-MLE implementation in public schools as moderately effective. This outcome denotes a middle-ground assessment of how well the curriculum is being executed in public schools. Moreover, the low variability in the standard deviation indicates a relatively consistent opinion among respondents regarding the effectiveness of MTB-MLE in public schools. This result implies that implementing MTB-MLE in public schools has provided specific difficulties for learners and teachers, thus limiting the effective implementation of MTB-MLE.

The difficulties of learners and teachers in implementing the MTB-MLE Curriculum may be due to the diverse dominant language used, limited localized teaching and learning materials, and inadequate training for teachers. The diverse language background of learners influenced by the places where their roots came from and their exposure to social media, where learners are more exposed to the English

language, may have contributed to the difficulty of having one language (Hiligaynon) as MOI for the classroom.

The result is supported by the FGD participants, who stated that some challenges were encountered when using Hiligaynon as MOI. Since some learners speak English dominantly, they must translate some terms or explain ideas in English. Sometimes, they have to translate into three languages (Filipino, English, and Hiligaynon-Community language). Another challenge mentioned is the variability of Hiligaynon present in the province. Each town has its variety of Hiligaynon terms, which may differ from other towns in the province, thus posing a challenge to understanding each other.

Participant No. 1: “Mostly my mga words sila nga gina pamangkot then gina hatag ko man maam ang English terms sina. Ga bridge ko maam. Ang Hilligaynon word gina translate ko sa Filipino and then ang English.” ("Mostly, they have words that they ask about, and then I also provide the English terms, ma'am. I bridge them. The Hiligaynon word, I translate it to Filipino, and then in English.")

Participant No. 4: “That is why we need to translate gd ya sang words. Tatlo gd na ka languages ang ginagamit namon. So even Filipino ma'am. As simple as iniwasto ni, kulayan, Sir what is kulayan? Sir ano ni ang du-agan. So mabalik nman kami sa Hiiligaynon. So mabalik nman kami sa English what is kulayan? What is du-agan?” ("That is why we need to translate the words. We use three languages. So even in Filipino, ma'am. As simple as 'iniwasto ni' or 'kulayan,' 'Sir, what is kulayan?' 'Sir, what is du-agan?' So we go back to Hiligaynon. Then we go back to English, 'What is kulayan?' 'What is du-agan?'")

Participant No. 7: “…translate gid man ya natun kay may mga kabataan gid ya nga indi kaintindi… ang uti kag kuring. Sa language guid man sang second district grabe ang variancy sa mga languages kay per municipal. okay okay lang gani gawa dri sa first district pero sa second district gid ya grabe. may ara sila na ila language pareho na sa Iloilo may ara man na sa Aklan, bale halo na Akeanon like sa Sapian. May part sang Sapian na Akeanon na ya kay lapit sa Aklan.” ("...we have to translate because there are children who do not understand... the cat and the dog. The language in the second district significantly varies because it is per municipality. It is okay here in the first district, but in the second district, it is intense. They have their language like in Iloilo, and some are from Aklan, a mix of Akeanon like in Sapian. There is a part of Sapian that's Akeanon because it is close to Aklan.")

Participant No. 4: “Like sa AP ma'am ang writer for example taga Iloilo lain naman ya nga mga hiligaynon word nga gina gamit nila. Lain naman ya ang ginagamit sa Iloilo, lain man di ya sa aton. Like ‘nagatangis’ sa aton ‘nagahibi’ sa Iloilo. ‘Natuyo’ sa Iloilo, ‘napilaw’ sa aton sa Capiz or Roxas City. … honestly sa part ko being a teacher when I was teaching Grade 2, mabudlay sa part ko it's because ang akon man ya nga first language ya is not purely Hiligaynon.” ("In AP, ma'am, the writer, for example, is from Iloilo, so they use different Hiligaynon words. The words they use in Iloilo are different from ours. Like 'nagatangis' here, 'nagahibi' in Iloilo. 'Natuyo' in Iloilo, 'napilaw' in Capiz or Roxas City. Honestly, for me as a teacher when I was teaching Grade 2, it was difficult for me because my first language is not purely Hiligaynon.")

Participant No. 5: “Pero ari ka na d sa city gamhon sa inyo. Ari ka pa lang gani sa City lain lain na gani. Lighot, linghot. Syempre lain lain ang gnhalinan. Ang iro - ido. Hay ang hilamon diri abi ya daw mang hilamon ka. “gina ubra sya ya.. sa Iloilo pangalan sang tanom.” ("But even within the city, there are variations. 'Lighot,' 'linghot.' Of course, they come from different origins. 'Ang iro - ido.' 'Hilamon' here refers to pull weeds, in Iloilo it refers to grass.")

These statements are similar to the findings of Abrea et al. (2020), which state that teachers perceive MTB-MLE as a barrier instead of a bridge to learning concepts in English. Thus, this program had to deal with linguistic diversity in the classroom, which challenges the primary model of implementation that assumes that a child is exposed to only one MT rather than possibly several (Monje et al., 2019).

Moreover, the participants believe more localized teaching and learning materials are needed to implement MTB-MLE in public schools. They highlighted some challenges related to limited teaching and learning resources. As described by some participants, misalignment in module content and the need for teachers to create their resources due to a lack of adequate materials, as mentioned by various respondents, showcased gaps in the availability of instructional materials. Delays in the delivery of books and materials further impacted the timely implementation of the curriculum.

Participant No. 7: "…kag ang ara sa worksheet indi man tanan aton nga dialect." Ang AP gani nga worksheet ang laban na gina gamit ang sa Bacolod or Negros kay syempre ang writer taga didto man. ("...and not all dialects are represented in the AP worksheet." The AP worksheets often used are from Bacolod or Negros because the writer is from that area.")

Participant No. 1: Somehow may ara nga ma contextualize namon ang mga materials kag ang mga modules. They are providing story books. And the teacher's initiative to provide worksheets. Ang worksheets sang Grades 1 to 3 sila gid na ya ga ulubra. Kay kung ma base lang sa ginahatag nila nga materials mabudlay gid. Kay amo na gani maam iba ang nag ubra so mina ga ubra gid ang grades 1 to 3 sang mga worksheets para ma contextualized."(Somehow, we can contextualize the materials and modules. They provide storybooks, and the teachers take the initiative to provide worksheets. The teachers prepare the worksheets for Grades 1 to 3. Because if we base it on the materials they provide, it is challenging since the ones who made it are from another province, so the teachers of Grades 1 to 3 work on the worksheets to contextualize them.")

Participant No. 6: "Tani wala na lang sila nag provide modules. tani worksheet na lang or workbook para at least magamit gid bala." ("It would have been better if they did not provide modules. They should have provided worksheets or workbooks instead.")

Participant No. 2: "…ang books or ang module kami na lang ga mato mato ya…" ("We have to make book or modules ourselves.")

Participant No. 3: "Matapos na kami klase amo pa lang ma abot ang books ya. Or may ma abot man na libro pero layo layo sa curriculum guide. Wala ga align sa curriculum. So wala ka gid ya may itudlo. Ma mato mato ka gd… kanugon sang kwarta sang gobyerno." ("We are almost finished with our class when the books arrive. Sometimes, a book arrives but is not aligned with the curriculum guide. It does not align with the curriculum, so we have nothing to teach. We have to make adjustments. What a waste of government funds.")

Participant No. 5: "So amo na naga create na manlang kami kag gapangeta sang resources. Create kami sang worksheets nga among gid ya kag activity sheets." ("We are the ones creating and looking for resources. We make our own worksheets and activity sheets.")

Furthermore, participants indicated that more training, adequate time, and material distribution delays significantly impacted effective implementation. Inconsistencies in the duration and quality of teacher training were also mentioned, with the availability of training depending on budget allocations.

Participant No. 4: "Training? Depende kung may budget maam eh… pero sang una pila manlang to ka days.. 5 days… one week.. kag indi man tanan naka attend sa training.." ("Training? It depends if there

is a budget ma'am... but initially, it was only for a few days... 5 days... one week... and not everyone was able to attend the training...")

Participant No. 6: Daw 1 week before sang klase man lang ato maam... dasig dasig lang gani. Maklase na kami pagka Lunes ga training pa lang kami. Ulihi pa na nag abot ang materials nila." ("It's like just one week before classes... it's so rushed. We're already starting our classes on Monday, and we're still in training. Their materials arrived late too.")

These issues are similar to the factors revealed in the study of Trujillo (2020) that unveiled the teacher's perceptions of the feasibility of classroom implementation of MTB. These include a lack of instructional materials in the teaching mother tongue, a need for translated terms, and a lack of programmed training. This is also congruent with the findings of Gempeso (2017), saying that the most significant challenges are the scarcity of learning materials and MT books, which are supposed to help sustain the hope and enthusiasm of the learners to understand and unleash their learning potential.

Difference Knowledge Acquisition Between Private and Public Schools

Table 6 illustrates the independent t-test that compares the knowledge acquisition between public and private schools in English, Science, Math, and entire knowledge acquisition. In detail, the mean difference between public (M = 19.12) and private (M = 26.21) schools in English is statistically significant (t=11.826*, Sig=0.000). Also, there is a significant difference in Science IV scores between public (M = 18.57) and private (M = 24.60) schools (10.266*, Sig=0.000). The difference in Math IV scores between public (M = 17.81) and private (M = 21.44) schools is also statistically significant (t=7.045*, Sig=0.000). Moreover, in terms of the entire knowledge acquisition, there is a statistically significant difference in overall knowledge acquisition between public (M = 18.50) and private (M = 24.09) schools (t= 11.575*, Sig=0.000). Therefore, the null hypothesis is rejected since the p-value obtained for all the variables studied is 0.000, which is less than .05. Thus, there are significant differences in knowledge acquisition between public and private schools in English, Science, Math, and overall knowledge acquisition.

Table 6: Independent t-test Results of English IV, Science IV, Math IV, and Entire Knowledge Acquisition between Private and Public Schools

Knowledge Acquisition	School	N	Mean	SD	t	df	Sig
English IV	Public	380	19.12	8.60	11.826*	699	0.000
	Private	321	26.21	7.01			
Science IV	Public	380	18.57	8.69	10.266*	699	0.000
	Private	321	24.60	6.47			
Math IV	Public	380	17.81	7.18	7.045*	699	0.000
	Private	321	21.44	6.31			
Entire Knowledge Acquisition	Public	380	18.50	6.96	11.575*	699	0.000
	Private	321	24.09	5.59			

* p<0.05 significant @5% alpha level

The result implies that the statistically significant difference between the knowledge acquisition of learners in Science, English, and Mathematics is in favor of private schools. Private schools may have employed more effective teaching methods, utilized better resources, or had more innovative and motivated teachers. In addition, the curriculum in private schools might be more rigorous or better aligned with learners' needs. It is also essential to note that the overall knowledge acquisition of learners in public and private schools may be influenced by socioeconomic background, parental involvement, and early exposure to English. These factors, combined with the programs and facilities in private schools, may contribute to a higher mean score of knowledge acquisition observed in private schools.

Further, the significance of this result lies in the difference in the implementation approach of the MTB-MLE curriculum in private and public schools. Private schools, for instance, use English as a medium of instruction in all subjects except Filipino and Araling Panlipunan from Grades one to three. This approach may have provided a clear advantage to private school learners as they performed better than in public schools. Their mastery of the English language contributes to better comprehension and understanding of the new concepts discussed in English when they reached Grade 4 and as they proceed to higher grades.

Moreover, this result relates to the observation of teachers that learners in public schools are having difficulty in language transition as they move from Grade 3 to Grade 4, as mentioned in the focus group discussion. Participants highlighted potential shock or confusion among students when introduced to specific English terminologies, impeding effective communication and learning. As noted, the confusion observed in Grade 4 students may raise concerns about potential disruptions in the learning process. The challenges in teaching purist vocabulary, spelling rules, and using certain words in different languages highlighted the difficulty in adjusting to the learning materials. Also, the tendency to forget traditional words as learners progress to higher grades indicates potential challenges in sustaining the implementation.

Participant No. 3: "May mga times nga ma confuse kaya kay lain man imo paghangop sa picture sa laragway, gali kay lain gd ya ang name gid ya bala. Pareho sang apple... ang name sina sa hiligaynon is mansanas pero ang pagkakilala sang bata gid ya ya is apple so ila ihambal apple. Hay may choices, A, M, P. so ang pilion sang bata is A kay para sa iya apple na ya. Ayawan ka ka explain… mansanas dapat, hay gina pilit mo ang bata na mansanas dapat, hay sa iya mother tongue apple ya so na confuse tapat ang bata." ("There are times when it gets confusing because your understanding of the picture in the illustration may be different, as the name might be different. Like 'apple'... the name in Hiligaynon is 'mansanas,' but the child knows it as 'apple,' so they say 'apple.' There are choices, A, M, P. so the child chooses A because for them, it's 'apple.' It's hard to explain... it should be 'mansanas,' but you're trying to force the child to say 'mansanas' when in their mother tongue, it's 'apple,' so the child gets confused.")

Participant No. 7: "Kag ang nakita ko pagid sa amon sa Grade 4 nga isa sa impact no kag nagkaroon sang confusion ang bata between Filipino and Hiligaynon. For example, pag ginpasulat mo ang bata sang sentence in Filipino gina combine niya ya sang Filipino kag hiligaynon, for example, "lumipad ang pispis" ya and that should be ibon. So confused nasa kung nagalakot na sya hiligaynon." ("And what I observed in our Grade 4 as one of the impacts is that the children are experiencing confusion between Filipino and Hiligaynon. For example, when you ask them to write a sentence in Filipino, they mix Filipino and Hiligaynon, 'lumipad ang pispis,' where it should be 'ibon.' So, they get confused when they switch to Hiligaynon.")

Participant No. 4: “Kag ano pagid bala sa spelling bala, ang sa MTB tig bato tas sa Filipino ya tig baybay pag abot sa English ya sentence na." ("And also, there is a challenge with spelling. In MTB, it is phonetic, but in Filipino, it is based on spelling. When it comes to English sentences, it is a different approach altogether.")

Participant No. 6: “Spelling na, matigbato kita ha? “Matigbato" spelling ina sya ma'am. Pagabot naman sa Filipino, Pagbaybay kita ha, 1-10 Filipino naman kita ha? Daw ginaano ko na lang sa ila, pag abot sa English, spelling naman kita ha?” ("Spelling is another challenge, isn't it? 'Matigbato' is how it is spelled. Then, when it comes to Filipino, we focus on spelling too; from 1 to 10, we spell in Filipino, right? It is like I am coaching them along, and when it comes to English, we focus on spelling again.")

Participant No. 5: Especially sa Math namon gid. Diba mag isip kita ya nagamon kita isa, duha, tatlo… onse, doce. Pero pag abot ya sa Math ang onse isa ka napulo kag isa, napulo kag duha, ang isa ka gatos, pulo ka napulo. Amo sina maam mag isip. Amo na maam amon na budlayan sa Math gid. Kay ang aton abi maam nga medium of instruction sa Grade 1-3 Hiligaynon except English and Filipino” (Especially in our Math lessons, right? We are used to counting isa, duwa, tatlo... once, doce. But when it comes to Math (in Hiligaygnon), ‘napulo kag isa, napulo kag duha, ang isa ka gatos, pulo ka napulo. That is how we count (in Hiligaynon). That's why, ma'am, Math is really challenging for us. Because our medium of instruction from Grade 1-3 is Hiligaynon, except for English and Filipino.)

The result and the statements of the participants align with the statement of Medilo (2016). He noted that there are limitations in teaching certain concepts in mathematics and the natural sciences through Mother Tongue-Based Multilingual Education (MTB-MLE). For instance, children may not utilize vernacular versions of numerical terms, and there may be mathematical and scientific concepts lacking equivalent terms in the vernacular language, posing challenges for translation efforts.

It is crucial to note that most private school learners come from families with higher socioeconomic backgrounds. This aligns with the findings of the OECD (2014), which stated that the average socioeconomic background of private school students is higher than that of public school students. Furthermore, the American Psychological Association website in 2017 highlighted that children from low-SES households and communities develop academic skills slower than children from higher-SES groups. For example, private high school students outperformed public high school students in reading, mathematics, and science examinations (Frenette & Winnie Chan, 2015).

Additionally, Orbeta and Paqueo (2022) claimed that Philippine private schools perform better than public schools. This result validates all three domains– mathematics, Science, and reading. Another factor that relates to the result is the crucial role of parents. Parents of children from private schools were more involved in their children's education than those in public schools (Tufail & Nosheen, 2023). This involvement may include providing educational support at home, attending parent-teacher conferences, and encouraging reading and language-related activities. The impact of parental involvement cannot be overstated, as it has been shown to contribute to a child's academic success significantly. Early exposure to English could give learners the language skills they need to perform better in academic tests and excel in their studies (Malesińska, 2022). In the Philippine settings, private schools teach their pupils to read in English in Grade 1. In contrast, the MTB-MLE used in public schools only introduces English reading in the second semester of Grade 2 (Albano Jr, 2021).

Learners' reading comprehension gaps caused low English, Math, and Science achievement levels. This means many low-performing learners cannot comprehend Math and Science word problems written in English (Albano, 2021).

Difference in the Effectiveness of MTB-MLE Curriculum Implementation between Private and Public Schools

Table 7 shows the independent T-test that compares the effectiveness of MTB-MLE Curriculum implementation between private and public schools. As reflected, there is a significant difference in the effectiveness of the implementation between private and public schools (t=5.342, Sig=.000). The mean efficacy is lower in private schools (M=2.72) compared to public schools (M=3.33). Therefore, the null hypothesis is rejected since the p-value obtained is 0.000, which is less than .05.

This result suggests that public schools, on average, have a higher perceived effectiveness of MTB-MLE curriculum implementation than private schools in terms of the aims of the MTB-MLE Curriculum. The magnitude of the difference between the means (2.72 & 3.33) is high, which suggests a more significant difference favoring the public schools.

Table 7: Independent T-test Results of Effectiveness of MTB-MLE Curriculum Implementation Between Private and Public Schools

Effectiveness of MTB-MLE	N	Mean	SD	t	df	Sig
Private	66	2.72	0.78	5.342*	143	0.000
Public	79	3.33	0.60			

* p<0.05 significant @5% alpha level

The significant difference favoring the public schools may have far-reaching implications. It could be interpreted as private schools facing challenges or being perceived as less effective in implementing the MTB-MLE curriculum than public schools. This result may be brought about by the dissimilarity in the curriculum implementation by each type of school. Private schools opted to use the Mother Tongue as a subject and English as a medium of instruction from Grade 1 across disciplines except Filipino and AP. These findings call for a closer examination of the factors influencing the effectiveness of the MTB-MLE curriculum in different school settings.

On the contrary, public schools are obligated to adhere to Republic Act 10533, which emphasizes the delivery of primary education in languages comprehensible to the learners, recognizing the pivotal role of language in shaping the formative years of students. Teachers in public schools are required to demonstrate initiative and exert additional effort to ensure the effective implementation of the MTB-MLE curriculum (DepEd Region 2, 2019). This commitment, coupled with the direct oversight and support from the Department of Education (DepEd) over public schools, may contribute marginally higher effectiveness in implementing MTB-MLE than private schools.

Moreover, the statement of the public school teacher participants during the FGD may support the claim. They have pointed out the positive effect of MTB-MLE on learners in terms of their ability to express themselves using the local language. This instance is attributed to a slightly higher effectiveness of MTB-MLE implementation in a public school setting. In this sense, various discussants also emphasized that learners became more participative, confident, and talkative when using MTB (Hiligaynon), contributing to a more engaging classroom environment.

Participant No. 3: “Siguro maam ang pinaka una is because sa paggamit sang MTB (Hiligaynon) maka express mayad maam ang mga kabataan. Mahambal nila ang kung ano ang ila gina isip kag ma share.” ("Perhaps, ma'am, the primary reason is that through the use of Mother Tongue-Based (Hiligaynon),

children can express themselves more effectively. They can articulate what they are thinking and share it with others.")

Participant No. 2: “Naging mas participative ang mga bata. Even ang mga grade one kay maka share na sila sang ila mga ideas in group.” ("The children have become more participative. Even the Grade One students are now able to share their ideas within the group.")

Participant No. 6: "Wala sila hoya hoya ma ka express, kay kung English nahoya sila maghambal.” ("They are no longer hesitant to express themselves When using English, they used to feel hesitant.")

Participant No 5: “Naging confident sila maghalambal.” ("They have become more confident in speaking.")

Participant No. 1: “Naging talkative ang mga bata sa classroom.” ("The children have become more talkative in the classroom.")

Participant No. 7: “Sa mga group activity dati kung sin o lang ya ang alam alam gid kag mayad sa English amo lang na ng mayad, pero sa MTB (Hiligaynon) halos tanan ga join, gapaindisanay sang mga ideas kung ano ang maayo nga ubrahon.” ("Before, during group activities, only those who were proficient and confident in English would actively participate, but with the use of MTB (Hiligaynon), almost everyone joins in, sharing and discussing ideas on what to do take.")

On the contrary, the teacher participants from private schools may seem to agree with the result that MTB-MLE is found to be less effective in private schools. They admitted during the FGD that even the teachers do not support the MTB-MLE since most of their learners speak English dominantly. They observed so much difficulty on the part of the learners in grasping the discussion. Also, their learners needed to be more interested in attending the MT subject or doing MT activities.

Participant No. 8: “Daw wala man ako may nakita na strength man regarding the implementation of the MTB MLE Curriculum sa amon sa private school. Kay even ang mga teachers ga reklamo man sang MTB. Kung baga, sayang lang ang time nga gin a lot sa iya.” (In terms of strength, I haven't seen any strengths in the implementation of the MTB MLE Curriculum in our private school. Even the teachers complain about MTB. In a way, the time allocated to it is just a waste.)

“So far sa akon na observe, nabudlayan gid ang mga bata. Mostly be sa amon learners or mga 95 percent gid English speaking. Indi sila ka intindi or nabudlayan sila maghambal using mother tongue.. maski ang gamiton pa abi is ang conversational Hiligaynon, ang iban indi gd ya kaintindi. How much more using MT sa module nga madalom.” (So far, in my observation, the children are struggling. Most of our learners, around 95 percent, are English speakers. They either don't understand or find it difficult to speak using the mother tongue, even in conversational Hiligaynon. Some don't understand at all. How much more using MT in a module that is pure.)

“So what happen is nabudlayan kami.. kag wala man namon gid gina pilit ang bata na magsuper use gid sang MT kay gaka trauma sila.. may ara nga indi na sila magsulod sa klase, or indi na mag ubra sang mga activities sa MT na time.” (So, what happens is that we find it difficult, and we don't force the children to use MT because they get traumatized. Some refuse to attend class or participate in MT activities.)

Participant No. 9: “Daw pareho gd kami maam experience ni maam sa amon school. Wala man ako may Makita nga benefit kay mas nagging burden sya on the part bsang mga kabataan kag even sa amon na teachers. Even maam sa support sa language development maam, daw wala man sya may nabulig. Most of our learners are fluent in speaking English. As in most of them, ila na first language is English. So amo na gani no, if ang iya purpose is maging bridge sya to learn L2 which is English daw no need na

tani sini sang MTB. Kay naga hambal na ya ang mga bata kag readers na sila sa English." (It seems like we have the same experience in our school. I have not seen any benefits because it becomes a burden for the learners and teachers. Even supporting language development has yet to help. Most of our learners are fluent in speaking English. Most of them use English as their dominant language. So, if the purpose is to be a bridge to learning L2, which is English, MTB is unnecessary.

Such statements note that MTB is less likely to be prioritized by private schools, contributing to moderately lower effectiveness than public schools. Thus, the significant differences in the implementation between private and public schools may be explained by the idea that private schools have found MTB less critical since they have less need for their learners to speak English, as evident in the participant's statement. Another factor that may be linked to the result is the flexibility the DepED gives to private schools. Acidre (2019) states that public schools adhere to a standardized curriculum, while private schools enjoy greater autonomy, fostering innovation, creativity, flexibility, and cultural or ideological specialization, which may include religious education.

On the other hand, many studies have stated the positive contribution of MTB-MLE to public schools. First, Cabansag (2019) indicated four main benefits of MTB-MLE: expressing better ideas, building self-confidence, better retention, and promoting a friendly environment. Second, Yap-Dequiña and Oliva (2022) observed a more profound comprehension, heightened engagement, active exchange of thoughts and ideas, and enhanced confidence among learners attributable to using the mother tongue as the language of instruction. Similarly, Trujillo (2020) reported the same findings regarding the impact of mother-tongue instruction on learner participation and confidence. Gaylo (2020) also discovered that using MTB-MLE increased students' ability to share knowledge, increased class interaction, boosted their curiosity, and enhanced their ability to learn faster because it simplified difficult lessons. It also motivated learners to attend classes, thereby decreasing absenteeism. Moreover, students gained a deeper understanding of the lesson, participated actively in class, freely expressed their ideas, increased and strengthened their self-confidence, and improved their academic ability (Aliab et al., 2018).

Relationship Among the Knowledge Acquisition Across Subjects and Entire Knowledge Acquisition Between Private and Public Schools

Table 8 presents the Pearson correlation coefficients (r) for knowledge acquisition in English IV, Science IV, Mathematics IV, and overall knowledge acquisition between private and public schools. The correlation coefficient for English IV between private and public schools is 0.005, with a significance level of 0.924. Science IV's correlation coefficient is -0.022, with a significance level of 0.698. For Mathematics IV, the correlation coefficient is -0.048, with a significance level of 0.389. When looking at the entire knowledge acquisition across all subjects, the correlation coefficient is -0.066, with a significance level of 0.239. Overall, the data indicates no significant correlation between the knowledge acquisition in English IV, Science IV, Mathematics IV, or overall knowledge acquisition between private and public schools. Therefore, the null hypothesis (H0) is not rejected since the p-value obtained from all studied variables is more than .05.

Table 8: Pearson r of Knowledge Acquisition in English IV, Science IV, Mathematics IV and Entire Knowledge Acquisition Between Private and Public Schools

Variables	r	Sig
English IV Private and Public	0.005^{ns}	0.924

Science IV Private and Public	(-)0.022^{ns}	0.698
Math IV Private and Public	(-)0.048^{ns}	0.389
Entire Knowledge Acquisition Private and Public	(-)0.066^{ns}	0.239
* p<0.05 significant @5% alpha level		

This finding suggest that the choice of school type does not significantly influence the level of knowledge acquisition in English, Science, Mathematics, or overall. The lack of statistical significance implies that other factors beyond school type may substantially impact students' knowledge acquisition outcomes in the specified subjects.

Further, the results of the knowledge acquisition of public schools are not technically related to the results of the knowledge acquisition of private schools and vice versa because these two operate independently.

Several factors affecting knowledge acquisition in public schools, which might not be directly related to those in private schools, include disparities in funding, resources, and class sizes. Public schools often operate with limited budgets, resulting in fewer educational materials, outdated technology, and larger class sizes, which can impede personalized instruction and student engagement. Additionally, public schools may have faced challenges such as a higher student-to-teacher ratio, less flexibility in curriculum design, and more diverse student populations with varying needs, including language barriers and socio-economic challenges. Conversely, private schools typically benefit from better stakeholder's support, smaller class sizes, and more autonomy in curricular decisions, which can foster a more tailored and resource-rich educational environment. These differences highlight how the unique operational contexts of public and private schools can influence their respective knowledge acquisition outcomes, which means that the knowledge acquisition in public school is not directly dependent to the knowledge acquisition of private school vice-versa.

The participants' responses from public and private schools confirm the differences in the approach to implementing MTB-MLE. As stated, public schools use MTB-Hiligaynon as a Learning area and as a mode of instruction in subjects other than English and Filipino from Grade 1 to Grade 3. At the same time, private school teacher participants explained that they only use MTB as a subject and English in subjects other than Filipino.

Participant No. 5: "Kay ang sa amon abi (public school) maam nga medium of instruction sa Grade 1, Grade 2 and Grade 3 Hiligaynon except English and Filipino." (In our school, the medium of instruction for Grade 1, Grade 2, and Grade 3 is primarily Hiligaynon, except for English and Filipino.")

Participant No. 8: "Sa amon maam (private school) because subject lang si MTB, English man gihapon ang medium of instruction namon when it comes to other subjects."("For us, ma'am, since MTB is just a subject, English remains the medium of instruction in other subjects.")

Private and public schools have different funding sources and different managing individuals or organizations. Public schools are government-funded educational institutions managed by the Department of Education (DepEd). Private schools, on the other hand, are not government-funded and are managed by individuals or organizations (Atonibai, 2023).

There is an entirely different curriculum for private and public schools. Government schools follow a standard curriculum, while private schools have a more pronounced space for innovation, creativity, flexibility, and cultural or ideological specialization—including religious education (Acidre, 2019).

Another factor that may support the negative relationship of the learners' knowledge acquisition between the two types of schools is the difference in the teachers' administrative workloads. Public school teachers were found to be chronically overworked compared to private schools (David et al., 2019). Workload intensification, as a form of educational practice, is found to have decreased teachers' overall efficiency and efficacy inside the classroom (Tarraya, 2023). Teacher effectiveness has been demonstrated to have a substantial correlation with student accomplishment. (Owoh, 2016).
Individual effort is a powerful determinant of academic success regardless of the type of school. Students who are motivated, disciplined, and engaged in their studies perform well in private or public schools.

Relationship on the Effectiveness of MTB-MLE Curriculum Implementation Between Private and Public Schools

The inferential analysis, presented in Table 9, focuses on the Pearson correlation coefficient (r) that examine potential relationships between the effectiveness of MTB-MLE (Mother Tongue-Based Multilingual Education) curriculum implementation and the type of school (private or public). The obtained results reveal a correlation coefficient of(-)0.033 with a significance level (Sig) of 0.790, indicating no statistically significant correlation between the effectiveness of MTB-MLE implementation and the school type at a 5% significance level. The "ns" notation in the significance column denotes that the observed correlation is not statistically significant. Therefore, the null hypothesis (H0) is not rejected since the p-value 0.790 obtained is more than .05.

Table 9: Pearson r of Effectiveness of MTB-MLE Curriculum Implementation between Private and Public Schools

Variables	r	Sig
Effectiveness of MTB-MLE Between Private and Public	-)0.033^{ns}	0.790
* p<0.05 significant @5% alpha level		

The finding suggests that the type of school does not significantly influence the perceived effectiveness of MTB-MLE curriculum implementation in private and public schools.
The lack of statistical significance suggests that other factors play a more influential role in determining the success of MTB-MLE implementation in diverse educational settings. For instance, this result may be attributed to factors such as differences in the implementation approach of the MTB-MLE Curriculum, the differences in the community's cultural and linguistic context, and resource disparities.
Private and public schools adopt different approaches to implementing the MTB-MLE curriculum. The differences in the implementation mode may also result in variations in teacher training, instructional methods, curriculum materials, and support systems, leading to differing learning outcomes and effectiveness. This non-uniformity in approach led to different perceptions of effectiveness. The approach of private school may be based on the perception that the use of Hiligaynon as a medium of instruction might be less effective since the majority of the learners are adept at English and the use of Hiligaynon will affect the learner's comprehension of the concepts and might further cause confusion.

Another factor that may note no relationship between the effectiveness of implementing MTB-MLE between private and public schools is the difference in the cultural and linguistic context of the community being served by the two types of schools. Public schools often serve a more diverse student population in terms of cultural backgrounds, languages spoken at home, and socioeconomic status. At the same time, private schools may have a more homogeneous student body, with students predominantly coming from similar cultural and linguistic backgrounds with a common dominant language, English. This idea may lead to differing approaches and strategies for teaching and learning.

Moreover, resource disparities between private and public schools may also contribute to the lack of a relationship between the effectiveness of the implementation. Private schools generally have more financial resources due to tuition fees, donations, and other private funding sources. These resources allow private schools to invest in better educational materials, advanced technology, and well-maintained facilities. Consequently, private schools may choose to implement the MTB-MLE Curriculum using Mother Tongue as a subject only, utilizing their resources to supplement their core curriculum without disrupting their established medium of instruction, which is often English.

On the other hand, public schools, which rely heavily on limited government funding, face significant resource constraints. These constraints manifest in overcrowded classrooms, outdated and insufficient educational materials, and a lack of access to advanced technology. Despite these limitations, public schools are mandated to implement MTB-MLE as a subject and medium of instruction in early grades.

The stark contrast in how MTB-MLE is implemented in public and private schools—private schools implementing it as a subject only while public schools use it as both a subject and medium of instruction—can be attributed to these resource disparities. Private schools have the flexibility and resources to tailor their curriculum offerings without fully integrating MTB-MLE into all aspects of instruction. In contrast, public schools must adhere to national educational policies that mandate the broader use of MTB-MLE.

These disparities in resource availability and curriculum implementation approach create a complex educational landscape where the impact of MTB-MLE cannot be uniformly measured. The lack of significant differences in effectiveness between public and private schools in implementing the MTB-MLE curriculum might stem from these resource disparities. While private schools can optimize their limited implementation, public schools need more support to meet broader mandates. This results in an uneven playing field, where the true potential of MTB-MLE is not fully realized in either setting, leading to no significant relationship in the effectiveness of its implementation across the different types of schools. Addressing these disparities requires targeted funding, teacher training, and support to ensure that all schools can effectively implement MTB-MLE and provide quality education to their students, regardless of their financial resources.

The teacher participants in the FGD expressed differing views and experiences when asked about the impact of MTB-MLE. Participants from public schools mentioned the positive and negative effects of implementing MTB-MLE on learners. Some noted that it has become helpful since it made learners understand the lesson easily. It has also helped them develop confidence in speaking and expressing themselves in class.

Participant No. 1. “Ang impact naman ma'am (sang MTB-MLE) for me sa akon na grade three learners very helpful sia maam sya maam kay ngaa? dali nila maintindihan ang lessons. (For me, the impact of MTB-MLE on my Grade Three learners is beneficial. Why? They quickly understand the lessons)

Kay kun mostly mag gamit kami English man indi man nila maintindihan. So i-transalate man namon gihapon sa Hiligaynon para madali nila maintindihan kag syempre may time limit man kami daan mag klase. So kun mag English man kami da indi man nila ma ano (ma-intindihan) so madugayan kami explain. Pay kun MTB ang gamiton madali lang nila maintindihan. It is easier for them to understand. Pero may mga students kami nga English speaking. So need namon nga mag ano kami... mag bridging.(I do it always or most of the time because if we mostly use English, they won't understand. So, we still translate to Hiligaynon for them to easily understand, and of course, we have a time limit for our classes. If we use English, they won't understand, so it takes us longer to explain. But if we use MTB, they can easily understand. It is easier for them to understand. However, we have students who speak English. So, we need to bridge the gap.)

Participant No. 3: “Paghinambal naton maam nga sa impact, halimbawa sa kun Hiligaynon mas maka intindi ang mga bata, mas maka interpret sila kun ano gd ila gusto nga ihambal.. maka express gd sila..” (Speaking of impact, for example, in Hiligaynon, the children understand more, interpret what they want to say, and express themselves more.)

At the same time, private school teacher participants stated that they are less likely to experience the things shared by their public school counterparts since they are implementing MTB as a subject only and not as a medium of instruction. Further, they cannot see the value of having MTB as a subject since learners are disinterested and need help with the MT subject. Even the teachers and parents need to know the relevance of MTB in the learning process since most learners are adept at the English language.

Participant No. 8. (private school): “Sa amon maam (private school) because subject lang si MT, English man gihapon ang medium of instruction namon when it comes to other subjects.” “(In our case, ma'am, because MT is just a subject, our medium of instruction is still English when it comes to other subjects.)”

“Ang ano lang siguro maam ang strength is that our MOI is still English. So we don’t get to experience ang mga na mention nila maam kag sir sa public school.” (The only strength is that our MOI is still English. So we do not experience what ma'am and sir mentioned in public schools.)

“wala naman other benefit kay daw mas nag dugang pa gani sa academic burden sang mga bata. Ang gwa damo sang mga ginikanan nga gareklamo kay mas mabudlay pa ang MTB kaysa sa iban na subjects. Pareho sila sang Filipino. Nabudlayan ang mga bata.”(There are no other benefits because it seems to add to the academic burden of the children. Many parents complain that MTB is more difficult than other subjects, like Filipino. The children find it difficult.)

Participant No. 9: “Wala man ako may Makita nga benefit kay mas nagging burden sya on the part bsang mga kabataan kag even sa amon na teachers. Even ma'am sa support sa language development maam, daw wala man sya may nabulig. Most of our learners are fluent in speaking English. As in most of them, ila na first language is English. So amo na gani no, if ang iya purpose is maging bridge sya to learn L2 which is English daw no need na tani sini sang MTB. Kay naga hambal na ya ang mga bata kag readers na sila sa English. When it comes to comprehension mayad nman ya maam ang mga bata kay English has become natural to them. Amo na ina gani ang ila ya nga first language- ang English. So why do we have to go back pa ya sa MTB diba? Ara nag d nga learners are speaking the target language, which is English, which will benefit them later on in life gid ya. Diba, into globalization na kita."(I have not seen any benefits because it becomes more of a burden for the youth and teachers. Even, ma'am, it has not helped in supporting language development. Most of our learners are fluent in speaking English.

For most of them, English is their first language. So, if the purpose is to be a bridge to learning L2, which is English, MTB is unnecessary. Because the children are already speaking and reading in English, when it comes to comprehension, ma'am, they are good because English has become natural. That is why their first language is English. So why do we have to go back to MTB? Learners already speak the target language, English, which will benefit them later in life. Right? We are already in globalization.)

Further, private school teacher participants highlighted that most or 95 percent of their learners predominantly speak English, and some struggled with their mother tongue. In contrast, public schools cater to learners with different language backgrounds, with learners having varied dominant languages.

Participant No. 8: "Mostly be sa amon learners (private school) or mga 95 percent gid English speaking. Indi sila ka intindi or nabudlayan sila maghambal using mother tongue.. maski ang gamiton pa abi is ang conversational Hiligaynon, ang iban indi gd ya kaintindi." (Most of our learners, around 95 percent, are English speakers. They either don't understand or find it difficult to speak using the mother tongue, even in conversational Hiligaynon.)

Participant No. 9: "Most of our learners speak English fluently. As in most of them, ila na first language is English." (Most of our learners are fluent in speaking English, as English is their first language for most of them.)

Participant No. 3: "Sa akon nga mga estudyante daw kalabanan gid ya maam English Speaking.. gamay lang dira ang naga ano sa gid sa hiligaynon. So kun mag lesson kami maam halo-halo amon na language. So kun mag lesson kami maam halo-halo amon na language. kay tungod gani inang ma perdi gd bala maam sa imo na leksyon. Halimbawa magklase ka ga hiligaynon ka.. hay ang mga English speaking to ya maam indi ka intindi. so mahimo mo na lang tatlo ka language imo nagamit kay may ara nga English speaking may tagalog man, may hiligaynon man. Makapoy lang man sa amon maam nga part. (In my case, most of them are English speakers, and only a few understand Hiligaynon. So, when we teach, we mix various languages. Because of that, sometimes it's challenging for us.

Participant No. 5: "Sa isa ko ka section may Cebuano pa ko.. gani ga tagalog ka ga English. ga hiligaynon."(In one of my sections, I had a student who spoke Cebuano. They spoke in Tagalog and English, and also in Hiligaynon.)

Participant No. 4: "Tatlo gd na ka languages ang ginagamit namon. So even Filipino ma'am. As simple as iniwasto no kulayan. Sir, what is kulayan? So amo na du-agan. So mabalik nman kami sa Hiiligaynon. So mabalik nman kami sa English what is Kulayan? What is du-agan?"(We use three languages (inside the classroom). So, even in Filipino, ma'am, as simple as "iniwasto," what is "kulayan," sir? That is the scenario during class, ma'am. We have to use more than three languages to cater to the language needs of pupils. Then we go back to Hiligaynon and then back to English; what is "Kulayan"? What is "du-agan"?)

This result, as discussed by the participants, is in line with the study of Williams (2014), who stated that many children were unfamiliar with several aspects of mother tongue orthography. Additionally, they observed that schools were accommodating pupils whose dialects differed from the majority population in a given area.

Public schools, which receive government funding and are overseen by the Department of Education (DepEd), and private schools operate independently under the management of individuals or organizations (Atonibai, 2023). These two types of schools diverge significantly in their curriculum approaches. While public schools adhere to a standardized curriculum, private schools enjoy greater

autonomy, fostering innovation, creativity, flexibility, and cultural or ideological specialization, which may include religious education (Acidre, 2019). Private schools are free to modify the K to 12 curriculum according to the vision, mission, and goals of the schools and the curricular needs of their students (Giron et al., 2016).

Relationship of Knowledge Acquisition and Effectiveness of MTB-MLE Curriculum Implementation

Table 10 presents the inferential analysis using Pearson correlation coefficients to explore potential relationships between knowledge acquisition and the effectiveness of MTB-MLE (Mother Tongue-Based Multilingual Education) curriculum implementation. The obtained results revealed a correlation coefficient (r) of (-)0.118 with a significance level (Sig) of 0.158. Statistical significance is not found for the observed correlation at the 5% alpha level, as indicated by the "ns" notation in the significance column. Therefore, the null hypothesis (H0) is not rejected since the p-value 0.158 obtained is more than .05.

Table 10: Pearson r of Knowledge Acquisition and Effectiveness of MTB-MLE Curriculum Implementation

Variables	r	Sig
Knowledge Acquisition and Effectiveness of MTB-MLE	(-)0.118^{ns}	0.158
* p<0.05 significant @5% alpha level		

The research findings suggest a lack of statistical significance in the relationships between knowledge acquisition and the effectiveness of MTB-MLE curriculum implementation, suggesting that the MTB-MLE curriculum implementation does not influence learners' knowledge acquisition. This result further implies that more than simply implementing the MTB-MLE (Mother Tongue-Based Multilingual Education) curriculum, regardless of its perceived effectiveness, may be required to significantly impact students' learning outcomes in Science, Mathematics, and English. While the MTB-MLE curriculum aims to improve learning by using students' first language as the medium of instruction or as a subject, this approach alone does not guarantee improved academic performance.

This may mean that several other factors, each with its unique influence, may have contributed to learners' knowledge acquisition. These factors often interact intricately, and their impact may vary across educational contexts. Potential factors include teachers' motivation and dedication, school leadership, teachers' professional development, parents' involvement, and access to additional learning resources. Understanding and navigating this complex web of influences is a crucial challenge for educators, curriculum developers, policymakers, and researchers in education.

Teachers' motivation and dedication play a pivotal role in learners' knowledge acquisition, often transcending the limitations of curriculum implementation. Passionate and dedicated teachers provide an exciting and engaging learning atmosphere that piques students' interest and enthusiasm. Their dedication can lead to innovative teaching methods and personalized attention, which cater to students' diverse learning needs and styles. Motivated teachers are more likely to invest extra time and effort into their teaching, providing additional resources, support, and encouragement that help students grasp complex concepts more effectively. This contagious passion encourages pupils to develop a love of studying and a desire for academic success. Thus, regardless of the constraints or structure of the

curriculum, the intrinsic motivation and dedication of teachers significantly enhance the overall learning experience and outcomes for students.

School leadership profoundly impacts learners' knowledge acquisition independent of curriculum effectiveness by shaping a positive school culture, ensuring professional development for teachers, and efficiently allocating resources. Leaders who foster a supportive and collaborative environment set high expectations for students and staff, driving academic performance. Providing emotional and social support removes learning barriers, enhancing student engagement and focus. Influential leaders also maintain strong community connections, bringing additional resources and real-world learning opportunities into the school. Regularly monitoring and evaluating teaching practices allow for data-driven improvements that benefit student outcomes. Encouraging innovation in teaching methods further creates a dynamic learning environment, promoting more profound understanding and engagement. School leaders can significantly enhance students' academic success through these comprehensive strategies, irrespective of the curriculum's inherent effectiveness.

Teachers' professional development significantly influences learners' knowledge acquisition, regardless of the specifics of curriculum implementation. When teachers continually advance their professional skills, they bring updated knowledge, innovative teaching strategies, and best practices into the classroom. This ongoing professional growth ensures that they are well-equipped to address diverse learning styles and adapt to the unique needs of each student. Moreover, professionally developed teachers are better at creating a dynamic and interactive learning environment, utilizing various instructional tools and technologies that enhance student engagement and understanding. Their ability to critically reflect on and refine their teaching methods fosters a more effective and responsive educational experience. Consequently, even within the constraints of a set curriculum, teachers' professional caliber can substantially elevate instruction quality and positively impact students' academic achievements and overall learning outcomes.

The impact of parents' involvement in education on students' knowledge acquisition is significant, regardless of curriculum effectiveness. When parents engage in their children's education, they reinforce the value of learning, which motivates students to take their studies seriously. This involvement includes helping with homework, attending school events, maintaining open communication with teachers, and strengthening the home-school connection. Parents help build their children's confidence and resilience in facing academic challenges by setting high expectations and encouraging them. Furthermore, parents who actively participate in their child's learning process can identify and address individual needs, offering personalized support that complements formal education. Such engagement ensures that students receive continuous reinforcement and enrichment, contributing to their overall academic success beyond the effectiveness of the implemented curriculum.

Additional learning resources profoundly impact learners' knowledge acquisition, irrespective of curriculum implementation. These resources, which include books, digital tools, educational games, multimedia content, and supplementary materials, provide diverse avenues for students to explore and understand concepts beyond the standard curriculum. They cater to different visual, auditory, or kinesthetic learning styles, enabling students to grasp complex ideas more effectively. When students are forced to gather, evaluate, and synthesize knowledge from various sources, accessing a wide range of resources promotes autonomous learning, critical thinking, and problem-solving abilities. Moreover, these resources frequently provide practical, real-world applications with interactive components that increase the relevance and engagement of learning. As a result, the availability of additional learning

resources can significantly enhance students' educational experience and improve their academic performance, regardless of the curriculum's limitations.

The teachers' responses during the FGD may support the claims stated above. The participants said that they have to translate terms or do language bridging to cater to the diverse linguistic needs of learners. Also, they share their strategies, including being resourceful and innovative in contextualizing materials in teaching to make the pupils learn despite challenges. This reflects their dedication to imparting knowledge and improving their learner's skills.

Participant No. 1: I have to translate it kay indi sila kaintindi sang some Hiligaynon word.Para ma learn man nila ang english matter and Filipino matter. So gina ubra ko na always or most of the time. Kay kun mostly mag gamit kami English man indi man nila maintindihan. So i-transalate man namon gihapon sa Hiligaynon para madali nila maintindihan kag syempre may time limit man kami daan mag klase. So kun mag English man kami da indi man nila ma ano so madugayan kami explain. Pay kun MTB ang gamiton madali lang nila maintindihan. It is easier for them to understand. Pero may mga students kami nga English speaking. So need namon nga mag ano kami... mag bridging. (I have to translate because they don't understand some Hiligaynon words. So that they can learn both English and Filipino. I do it always or most of the time because if we mostly use English, they won't understand. So, we still translate to Hiligaynon for them to easily understand, and of course, we have a time limit for our classes. If we use English, they won't understand, so it takes us longer to explain. But if we use MTB, they can easily understand. It is easier for them to understand. However, we have students who speak English. So, we need to bridge the gap.)

Participant No. 3: Kami dabi maam diba pag hinambal naton nga MTB - first language. Ang amon dabi sa subong ini nang last namon na school year tungod sinang mga sa facebook, sa youtube ang mga bata daw ang ila nga naging first language amo ang english. Sa akon nga mga estudyante daw kalabanan gid ya maam English Speaking. Gamay lang dira ang naga hiligaynon. So kun mag lesson kami maam halo-halo amon na language. Kay tungod gani inang ma perdi gd bala maam sa imo na leksyon. Halimbawa magklase ka ga hiligaynon ka. Hay ang mga English speaking to ya maam indi ka intindi. So mahimo mo na lang tatlo ka language imo nagamit kay may ara nga English speaking may tagalog man, may hiligaynon man.(For us, ma'am, when we say MTB as the first language. In our case this last school year, because of things on Facebook, on YouTube, the children's first language seems to be English. For my students, most of them are English speakers, and only a few understand Hiligaynon. So, when we teach, we mix various languages. Because of that, sometimes it's challenging for us. But speaking of impact, for example, in Hiligaynon, the children understand more, interpret what they want to say, and express themselves more. But when it comes to English speakers, it's like putting extra effort to make them understand the topic you're pointing out. They can interact, but it's like dividing your class in half.)

Participant No. 4: The problem is so for example kung may 45 kami ka estudyante siguro mga daw half gd sina public school so usually ang ila nga first language is the mother tongue (Hiligaynon). So amo to hambal ni maam Ermie nabudlayan sila. Even sang first quarter I have these kids. So ang gina ubra ko ga write ko sang words then translate in English. So every day ina maam nga gina ubra ko during our enhancement of the major class so 10-10 words gid ina. So pag abot naman sa mga english speaking namon nga mga estudyante. Write ka English words, ano ang translation sa Filipino, ano ang translation sa Hiligaynon. As in amu ina kabudlay even ano maam ang pag use sang Filipino. That is why we need to translate gd ya sang words correctly. Tatlo gd na ka languages ang ginagamit namon. ("The problem is, for example, if we have 45 students, probably about half of them come from public schools, so

usually their first language is the mother tongue (Hiligaynon). So, as Ma'am Ermie said, they struggle. During the first quarter, I have these kids. I write words and then translate them into English. So every day, Ma'am, I do that during our enhancement of the major class—10 words each day. So, regarding our English-speaking students, I write English words and translate them into Filipino and Hiligaynon. That is how difficult it is, even when using Filipino. That is why we need to translate the words correctly. We use three languages.

Participant No. 6: Sa amon pagd ya ang problem sa grade one kay ang assessment is sa sounding lang ya maam sang letter. Indi sa reading gd. Gani kami na lang ya nga teacher ya ang gabakas ya nga makabasa gid ya ang bata. Kay syempre kalohoya to ya nga makadto sa grade 2 indi pa ya kabalo magbasa ang bata. (Our problem in grade one is that the assessment is only for the sounding of letters, not actual reading. We, as teachers, have to make an effort for the child to learn to read. Otherwise, when they reach grade 2, they still can't read.)

Participant No.5: So amo na naga create na manlang kami kag gapangeta sang resources. Create kami sang worksheets nga among gid ya kag activity sheets. (So, we end up creating and looking for resources ourselves. We make our own worksheets and activity sheets.)

Participant No.1: Somehow may ara nga ma contextualize namon ang mga materials. ang mga modules. The DepEd is providing story books. Moreover, the teacher's initiative is to provide worksheets. Ang worksheets sang Grades 1 to 3 sila gid na ya ga ulubra. Kay kung ma base lang sa ginahatag nila nga materials mabudlay gid. Subong gahatag man sila sang mga videos like ang ABC Plus. They train teachers in Hiligaynon to make stories. They also provide a storybook with pictures, no words, and other resource pages. Sini lang ina gin launch sang 2021. But still ara man sya gihapon para ma sustain. (Somehow, we can contextualize the materials and the modules. The DepEd provides storybooks, and teachers take the initiative to create worksheets. The teachers themselves make the worksheets for Grades 1 to 3. It would be challenging to rely only on the materials provided. Now, they are also providing videos like those from ABC Plus. They train teachers in Hiligaynon to make stories. They also give the storybooks pictures, no words, and other resources. This was launched only in 2021. However, it is still ongoing to ensure sustainability.)

The significance of teachers' motivation and dedication cannot be overstated in influencing learner performance. As stated, motivated teachers contribute to creating a positive learning environment, fostering student engagement, and enhancing academic outcomes (Nahid et al., 2023). The impact of teachers' job morale on school effectiveness is evident, as indicated by various identified dimensions, including intrinsic motivation. All these dimensions collectively contribute to the success of the classroom (Khun-Inkeeree et al., 2022). This notion entails that even when the perception of curriculum implementation is moderate, highly motivated and dedicated teachers can inspire and propel learners toward excellence.

Similarly, strong leadership within the school, including effective management and teacher support, can contribute to a positive learning environment. Leaders who develop a positive school culture encourage collaboration between teachers to ensure that best practices are shared and that teachers work toward a common goal. In addition to collaboration, leaders must create a supportive environment that provides feedback and promotes open communication to develop staff members (Dinsdale, 2017).

For instance, equity-oriented leaders develop deep knowledge about the ethnicities, languages, cultures, religions, and living circumstances of students' families and use that knowledge to align the school's priorities with the best interests of their students' families and the wider community (Leithwood, K,

2021). Tailored professional development programs focusing on transformational leadership behaviors can further enhance management empowerment, ultimately fostering a positive work environment and driving teacher effectiveness and student learning outcomes (Kilag et al., 2023).

School leaders who prioritize student success may implement additional interventions to enhance learning outcomes. Continued professional development opportunities can empower educators to enhance their instructional capabilities, adapt to evolving teaching methodologies, and effectively address challenges presented by the curriculum.

Findings from a study conducted by Osei-Owusu and Benedict (2022) indicated a positive correlation between professional development and learners' academic performance. According to the study, professional development accounted for approximately eight percent (8%) of the variations observed in academic performance. Consequently, the researcher concluded that engaging in professional development contributes to advancements in students' academic performance by enhancing teachers' professional knowledge. This result aligns with the outcomes of a study by Olubunmi Kayode Ayanwoye (2023), which demonstrated that updating teachers' knowledge in pedagogy and subject matter is tantamount to improving students' achievement. This further suggests that elevating the quality of the teaching workforce corresponds to enhancements in student outcomes.

Equally, the active involvement of parents in their child's education can compensate for shortcomings in curriculum implementation. Supportive home environments, including resources and encouragement, contribute significantly to academic success. This result is supported by the study of Lara & Saracostti(2019), which showed differences in academic achievement scores between the parent involvement profiles, where high and medium-involved parents had children with higher academic achievement than low-involved parents. This is similar to the study of Mugumya et al. (2022), which reveals that parents' involvement in children's education through providing basic needs and effective communication significantly influences the children's academic performance.

Ultimately, access to additional learning resources, such as books, online academic platforms, and digital technology, can complement the curriculum and provide students with a more comprehensive understanding of the subject matter. The findings of the study of Ayado et al. (2022) concluded that the students believed that the Internet and other technological aids were very helpful in learning. It also concluded that the student's academic performance using supplementary learning materials had a more significant score than those using conventional teaching methods. This proves that when schools are provided with needed resources like books and technology, it can lead to a more enriching and equitable learning experience for students, empowering them to reach their full potential and succeed academically.

Factors Affecting the Implementation of MTB-MLE Curriculum

Table 11 presents the factors affecting the implementation of Mother Tongue-Based Multilingual Education (MTB-MLE) curriculum. The factors are categorized into enabling factors and hindering factors, which influence the successful implementation of the curriculum in the private and public schools.

Enabling Factors. The focus group discussions (FGD) revealed several key factors that contribute to the effectiveness of Mother Tongue-Based Multilingual Education (MTB-MLE) Curriculum implementation. The FGD results revealed a tapestry of enabling factors that collectively contribute to the effectiveness of MTB-MLE. It includes awareness of learners' language backgrounds, teachers'

multilingual adaptability, relevant teaching resources, teacher commitment, teachers' knowledge of the curriculum, positive curriculum influence, and parental involvement to form a comprehensive framework that supports the success of Mother Tongue-Based Multilingual Education.

These factors, discussed by various participants, encompass a holistic understanding of the teaching and learning environment, highlighting the collaborative efforts of educators, learners, and parents. These insights validate the current practices and provide a roadmap for further refinement and improvement in MTB-MLE implementation.

Table 11: Factors Affecting the Implementation of MTB-MLE Curriculum

Enabling Factors	Hindering Factors
1. Awareness of learners' language backgrounds	1. Learners' and Teachers' Diverse Language Backgrounds
2. Teacher's Ability to Apply Multilingual Approach/Bridge Languages	2. Learner's Inadaptability to Language Transition
3. Relevant teaching and learning resources	3. Non-Translatable Technical Concepts and Terminologies
4. Teacher's Initiative and Commitment	4. Difficulty of Parents to Follow-Up Lessons and Homework
5. Teacher's knowledge of the objective of MTB-MLE Curriculum	5. Perceived Lack of Practicability and Benefits
6. Positive Influence of the Curriculum on Learners' Performance	6. Limited Teaching and Learning Resources
7. Parental Support and Involvement	7. Limited Teachers' Training and Capability Building
	8. Pandemic Related Factors

1. Awareness of Learner's Language Background

The FGD participants emphasized recognizing and understanding learners' language backgrounds. One discussant underscored the impact of using the mother tongue (English) as the first language, considering students' exposure to English through social media.

Participant No. 3: "Kami dabi maam… diba pag hinambal naton nga MTB, first language? Ang amon dabi sa subong, ining last namon na school year tungod sinang mga sa facebook, sa youtube ang mga bata daw ang ila nga naging first language amo na ang English. Sa akon nga mga estudyante daw kalabanan gid ya maam English speaking… gamay lang dira ang naga hambal guid sang Hiligaynon." (We believe, ma'am, that when we talk about MTB, it refers to the first language, right? However, in our experience this past school year, it seems like the children's first language has become English because of those on Facebook and YouTube. Most of my students speak English, but only a few speak Hiligaynon.)

However, another discussant who was familiar with the MTB-MLE curriculum emphasized the ease with which Grade 3 learners comprehend lessons taught in their mother tongue (Hiligaynon). This

instance was supported by another discussant who stated that using the mother tongue (MTB) as the mode of instruction in Grade 3 has a positive impact. It was cited that using local languages is more accessible for students than using Tagalog or English. Further, it was also mentioned that using MTB improves understanding, making it easier for the pupils to comprehend the lesson. These statements reinforce the idea that the MTB-MLE curriculum effectively enhances comprehension.

Participant No. 1: "for me sa akon na Grade 3 learners very helpful sya maam kay ngaa? dali nila maintindihan ang lessons... Kung MTB (Hiligaynon) ang gamiton madali lang nila maintindihan. It is easier for them to understand." (It is beneficial for my Grade 3 learners, ma'am, because they can easily understand the lessons when MTB (Hiligaynon) is used.)

Participant No.3: Ang amon dabi sa subong ini nang last namon na school year tungod sinang mga sa facebook, sa youtube ang mga bata daw ang ila nga naging first language amo ang english. Sa akon nga mga estudyante daw kalabanan gid ya maam English Speaking.. gamay lang dira ang naga ano sa gid sa hiligaynon. So kun mag lesson kami maam halo-halo amon na language. kay tungod gani inang ma perdi gd bala maam sa imo na leksyon. Halimbawa magklase ka ga hiligaynon ka.. hay ang mga English speaking to ya maam indi ka intindi. so mahimo mo na lang tatlo ka language imo nagamit kay may ara nga English speaking may tagalog man, may hiligaynon man. Makapoy lang man sa amon maam nga part. Pero paghinambal naman naton maam nga sa impact, halimbawa sa kun Hiligaynon mas maka intindi ang mga bata, mas maka interpret sila kun ano gd ila gusto nga ihambal.. maka express gd sila.. pero kun mina nman kun may english speaking ka nman daw kun baga ma ano ka gd sang effort mo nga mapa intindi mo sa mga bata nga ina sa ang gina point mo nga topic.(Based on observation last school year children seem to have adopted English as their first language because of their exposure to Facebook, Youtube and others. In my case, most of my students are English speaking, and only a few are really fluent in Hiligaynon. So when we have lessons, we mix languages. Because, you know, you risk losing your students if you stick to one language. For example, if you teach in Hiligaynon, the English-speaking students won't understand. So you end up using three languages: English, Tagalog, and Hiligaynon. It's really exhausting for us, ma'am.

Using Hiligaynon, the children understand better, they can interpret what they really want to say, they can really express themselves. But on the other hand, if you're using English, you have to put in a lot more effort to make the children understand the topic you're pointing out."

Considering the classroom experiences of these key informants, it can be observed that the language used by the learners is varied and not primarily Hiligaynon. Thus, it is essential to understand that teachers need to be aware of the language background of each of their students to ensure that learners are able to effectively acquire the knowledge and competencies relevant to the subject.

2. Teacher's Ability to Apply Multilingual Approach/Bridge Languages

The adaptability and multilingual skills of teachers emerged as a critical theme. Discussant described the dynamic multilingual approach, conducting lessons in various languages (Hiligaynon, English, Tagalog) to facilitate better communication among students with varying language backgrounds. The discussant also highlighted the practice of bridging between Hiligaynon, Filipino, and English, ensuring students' understanding. Moreover, the need to translate Hiligaynon words into Filipino and English showcased the adaptability of the language, which contributed to students' language acquisition. One discussant also noted the successful adaptation of English-speaking students to the use of the mother tongue, further emphasizing the role of MTB as a bridge language, especially for learners struggling with English terms.

Participant No. 1: “I have to translate it kay indi sila kaintindi sang some Hiligaynon word.Para ma learn man nila ang English and Filipino terms. So gina ubra ko na always or most of the time. Kay kun mostly mag gamit kami English man indi man nila maintindihan. So i-transalate man namon gihapon sa Hiligaynon para madali nila maintindihan kag syempre may time limit man kami daan mag klase.” (I have to translate because pupils do not understand some Hiligaynon words, and some need to learn English and Filipino terms. I do it consistently or most of the time. Sometimes, when we use English as MOI, there are also instances that they can't comprehend. So I have to translate to Hiligaynon so they can easily understand (of course, we also have a time limit for our classes).

Participant No. 3: “Pero kun na used na sila kay syempre sa kada adlaw na gina balik balik mo ina nga lesson, ang mga words na identify na nila. Nakakaintindi na sila. amo na gani hambal namon nga sila nga English speaking ga adjust sila.”(But once they get used to it because of course, when you repeat the same lesson every day, they start to recognize the words. They understand already. That's why we say that even though they are English-speaking, they adjust).

3. Relevant Teaching and Learning Resources

The emphasis on relevant teaching and learning resources was a recurring theme. Participants emphasized the importance of providing learning materials based on students' capacity or level, fostering a personalized learning experience. They acknowledged the effectiveness of contextualizing materials, conducting reading assessments, and providing storybooks, highlighting the positive impact of contextualization on the local context. The provision of resources, including laptops and training by external organizations, was considered instrumental in creating an enriched learning environment. Various respondents stressed the need to strengthen the contextualization of MTB content, making it relevant to the local community to enhance understanding.

Participant No.1: "Somehow may ara nga ma contextualize namon ang mga materials kag ang mga modules. They provide storybooks, and the teachers take the initiative to provide worksheets. Ang worksheets sang Grades 1 to 3 sila gid na ya ga ulubra. Kay kung ma base lang sa ginahatag nila nga materials mabudlay gid. Kay amo na gani maam iba ang nag ubra so mina ga ubra gid ang grades 1 to 3 sang mga worksheets para ma contextualized.”(Somehow, we can contextualize the materials and modules. They provide storybooks, and the teacher's initiative is to provide worksheets. The worksheets for Grades 1 to 3 are practical. Because if we base it on the materials they provide, it is challenging. That is why, ma'am, others have worked on it, so Grades 1 to 3 have been diligently working on worksheets to contextualize them.)

Participant No. 7: Dapat kung amo ni nga style sang implementation nag prepare ya sang module nga contextualized. Like per municipality gid ya kay syempre lain-lain man kita version sang Hiligaynon. Kag kung ano gid ya ang gina gamit sa community amo gid na ya ang gamiton. Indi nga ang mga madalom nga indi na maintindihan sang katigulangan amo na ya aton gina gamit sa module… (The implementation style should have prepared contextualized modules. Like, per municipality, because, of course, we have different versions of Hiligaynon. Moreover, whatever is being used in the community should be the one utilized. Not the purist ones that even the elderly cannot understand; those are what we use in the module...) ….Ang gamiton sa content is kung ano gid ang ara sa context sang community. Like sa AP… kun tani, we discuss man ya sa aton local community. Mag ubra sang map ang mga example ang ara gd sa actual…” (The content used is whatever is present in the community context, like

in AP. Ideally, we discuss topics related to our local community, and we create maps with examples that are present.)

4. Teacher's Initiative and Commitment

The commitment of teachers to the MTB-MLE curriculum emerged as a pivotal factor. Discussants expressed their adaptability to the curriculum despite initial challenges, demonstrating a willingness to guide students through the transition. One respondent detailed the active creation of worksheets by Grades 1 to 3 teachers, showcasing initiative in tailoring the learning experience. They also highlighted the availability of remedial programs, providing additional support and addressing the needs of slow learners as part of a systematic remediation strategy.

Participant No.1: "…and the initiative of the teacher to provide worksheets. Ang worksheets sang Grades 1 to 3 sila gid na ya ga ulubra… Kay amo na gani maam iba ang nag ubra so mina ga ubra gid ang grades 1 to 3 sang mga worksheets para ma contextualized." (and the initiative of teachers to provide worksheets. The worksheets for Grades 1 to 3 are indeed practical... Because since someone else (with a different version of Hiligaynon)did the module, the Grades 1 to 3 really worked on the worksheets themselves to contextualize them.)

Participant No. 4: "If ma identify na slow ang bata amo na dason ang basis nga ma remedial sya… Even sang first quarter I have these kids so ang gina ubra ko ga write ko sang words and then translate it in English. So every day ina maam nga gina ubra ko during our enhancement of the major class so 10-10 words gid ina."(If a child is identified as slow, that becomes the basis for them to receive remedial support. Even during the first quarter, I had these kids (who need remedial), so what I did was write down words and then translate them into English. So, ma'am, I did that every day during our enhancement in the primary class; I gave them ten words each day.)

Participant No.3: "…Additional time after class, like, for example, last time kay half day lang kami sa school because of the classroom problem. We ask learners if they need i-remediate to return in the afternoon."(Additional time after class, for example, last time, because we only had half a day at school due to classroom issues. We asked learners who needed remediation to return in the afternoon.)

5. Teacher's knowledge of the objective of MTB-MLE Curriculum

Teacher's awareness of the objectives of the MTB-MLE curriculum played a crucial role. Participants discussed integrating the local language into daily activities, emphasizing cultural and linguistic integration for a holistic learning experience. They acknowledged the curriculum's goal of preserving the local language and culture, suggesting the injection of literature into the MTB–MLE curriculum to enhance the cultural aspect of learning. The participants recognized the cultural basis of MTB-MLE, particularly its incorporation into the SocSci (Social Science) subject, as beneficial in preserving traditions. Overall, stakeholders' recognition of the importance of MTB in preserving language and traditions, especially in the face of potential language loss, highlighted a shared commitment to the cultural goals of the curriculum.

Participant No. 7: "…kay ma'am ang goal lang sina sang MTB kay ang hambal nila para ipreserve kunu ang aton nga language kay kita nga ulihi tubo ang halimbawa ini ang mga hiligaynon pag madula na ining mga una nga tawo wala na kunu ini madula na kunu ini nga language muna bala nga gina preserve pa…" (Because, ma'am, it was said that the goal of MTB is to preserve our language because it will eventually die out; if, for example, our older people disappear, purist Hiligaynon will disappear too.

6. Positive Influence of the Curriculum on Learners' Performance

The positive influence of the MTB-MLE curriculum on learner performance was evident from the responses. Participants described the positive impact on language skills, emphasizing the practice of writing words and their translations in Hiligaynon, Filipino, and English to enhance vocabulary and language comprehension. Discussants also noted students' increased expressiveness in their mother tongue as they progressed through grades, particularly in oral communication. Various respondents emphasized transforming students into more participative, confident, and talkative individuals when using MTB (Hiligaynon), contributing to a more engaging classroom environment.

Participant No.3: "Siguro maam ang pinaka una is because sa paggamit sang MTB (Hiligaynon) maka express mayad maam ang mga kabataan. Mahambal nila ang kung ano ang ila gina isip kag ma share." (Perhaps, ma'am, the foremost reason is that through the use of MTB (Hiligaynon), the children can express themselves well. They can articulate their thoughts and share them.)

Participant No.2: "Naging mas participative ang mga bata. Even ang mga grade one kay maka share na sila sang ila mga ideas in group."(The children became more participative. Even the grade one pupils now share their ideas in groups.)

Participant No.6: "Wala sila hoya hoya mka express, kay kung English nahoya sila maghambal." (They are open to expressing themselves (using Hiligaynon) because if it is in English, they become hesitant to speak.)

Participant No.5: "Naging confident sila maghalambal."(They became confident in expressing themselves).

Participant No.1: "Naging talkative ang mga bata sa classroom." (They became talkative inside the class)

Participant No.7: "Sa mga group activity dati kung sin o lang ya ang alam alam gid kag mayad sa English amo lang na ng mayad, pero sa MTB (Hiligaynon) halos tanan ga join, gapaindisanay sang mga ideas kung ano ang maayo nga ubrahon."

(In group activities before, only those proficient and fluent in English participated actively, but in MTB (Hiligaynon), almost everyone joined in, exchanging ideas on what should be done.)

7. Parental Support and Involvement

Participants recognized the crucial role of parents in supporting their children's learning within the MTB-MLE curriculum. The emphasis was placed on parents assisting with assignments and actively engaging with their children to ensure a smooth transition. This recognition of parental involvement underlines the importance of a collaborative approach, where educators and parents play integral roles in students' learning journeys.

Participant No.6: "…pero depende gid ya ma'am sila parents ya kay dapat ang parents gid ang maano (reinforce) sa ila. …dapat ikaw ya nga parents may obligasyon man sa pagtuon sa anak mo dapat ara gid na ya. Dapat utidtiran gid sila ya…" ("...but it really depends, ma'am, on the parents because the parents should be the ones to reinforce it to them. ...you as parents should also have an obligation to guide your child in their studies, that should really be there. They should be closely monitored...")

Hindering Factors. The findings from the focus group discussions (FGD) on hindering factors in the effectiveness of Mother Tongue-Based Multilingual Education (MTB-MLE) paint a complex picture, highlighting challenges arising from diverse language backgrounds, learner inadaptability to language transition, non-translatable technical concepts, difficulty of parents to follow-Up lessons and homework,

perceived lack of practicability and benefits, limited teaching and learning resources, limited teacher's training, and pandemic related issues.

1. Learners' and Teachers' Diverse Language Backgrounds

The FGD participants highlighted the inherent challenge posed by learners' and teachers' diverse language backgrounds. Respondents noted the necessity of translating Hiligaynon words to English to aid understanding, revealing a challenge in using English directly as a medium of instruction. They also emphasized the difficulties in translating between languages, especially when students come from regions with different primary languages. The use of different dialects and variations within the same language, as observed, further added to the need for more clarity, hindering effective communication.

Participant No.1: "Mostly my mga words sila nga gina pamangkot then gina hatag ko man maam ang English terms sina. Ga bridge ko maam. Ang Hilligaynon word gina translate ko sa Filipino and then ang English."("Most of the time, they ask questions about specific words, and I also provide the English terms, ma'am. I bridge it. I translate the Hiligaynon word into Filipino and then into English.")

Participant No.4: "That is why we need to translate gd ya sang words. Tatlo gd na ka languages ang ginagamit namon. So even Filipino ma'am. As simple as iniwasto ni, kulayan, Sir what is kulayan? Sir ano ni ang du-agan. So mabalik nman kami sa Hiiligaynon. So mabalik nman kami sa English what is kulayan? What is du-agan?" ("That is why we need to translate the words. We use three languages. Even in Filipino, ma'am. As simple as 'iniwasto ni' (corrected by), 'kulayan' (color), 'Sir, what is kulayan?' 'Sir, what is du-agan?' So we go back to Hiligaynon. Then we go back to English, 'What is kulayan? What is du-agan?")

Participant No.7: "…translate gid man ya natun kay may mga kabataan gid ya nga indi kaintindi… ang uti kag kuring. Sa language guid man sang second district grabe ang variance sa mga languages kay per municipal. Okay okay lang gani gawa dri sa first district pero sa second district gid ya grabe. may ara sila na ila language pareho na sa Iloilo may ara man na sa Aklan, bale halo na Akeanon like sa Sapian. May part sang Sapian na Akeanon na ya kay lapit sa Aklan." ("We need to translate because there are children who do not understand... 'uti' (cat) and 'kuring' (dog). In terms of language, in the second district, there is much variance in languages because it's per municipality. It is okay here in the first district, but in the second district, it is intense. They have their own language; some are like in Iloilo, some are in Aklan, and it's a mix like in Saipan. There's a part of Sapian that's Akeanon because it's close to Aklan.")

Participant No.4: "Like sa AP ma'am ang writer for example taga Iloilo lain naman ya nga mga hiligaynon word nga gina gamit nila. Lain naman ya ang ginagamit sa Iloilo, lain man di ya sa aton. Like "nagatangis" sa aton nagahibi sa Iloilo. Natuyo sa Iloilo, napilaw sa aton sa Capiz or Roxas City. … honestly sa part ko being a teacher when I was teaching Grade 2, mabudlay sa part ko it's because ang akon man ya nga first language ya is not purely Hiligaynon." (In AP, ma'am, the writer, is from Iloilo, so they use different Hiligaynon words. What they use in Iloilo is different from ours. Like "nagatangis" here is "nagahibi" in Iloilo. "Natuyo" in Iloilo, "napilaw" in Capiz or Roxas City. Honestly, when I was teaching Grade 2, it's difficult for me to understand and teach in MTB because my first language is not purely Hiligaynon.)

Participant No.5: "Pero ari ka na d sa city gamhon sa inyo. Ari ka pa lang gani sa City lain lain na gani. Lighot, linghot. Syempre lain lain ang gnhalinan. Ang iro - ido. Hay ang hilamon diri abi ya daw mang hilamon ka. "gina ubra sya ya.. sa Iloilo pangalan sang tanom."(But here in the city, the terms are

different. Even just here in Roxas City, the Hiligaynon terms vary. For example, "Lighot," "linghot." Of course, they have different origins. "Ang iro" is "ido." Oh, “grass” is "hilamon." "Here in Roxas it means the act of taking the weeds from the garden... In Iloilo pangalan “hilamon” refers to weeds.")

2. Learner’s Inadaptability to Language Transition

The adaptability of learners in language transition emerged as a significant hindrance. Discussants highlighted potential shock or confusion among students when introduced to specific English terminologies, impeding effective communication and learning. As noted by the respondents, the confusion observed in Grade 4 students raised concerns about potential disruptions in the learning process. The challenges in teaching purist vocabulary, spelling rules, and the usage of certain words in different languages, as discussed by various respondents, highlighted the difficulty the learners face in adjusting to the learning material. The tendency to forget purist, traditional words as students progress to higher grades further indicated potential challenges in sustained implementation.

Participant No.3: My mga times na ma confuse kaya kay lain man imo paghangop sa picture sa laragway, gali kay lain gd ya ang name gid ya bala. Pareho sang apple... ang name sina sa hiligaynon is mansanas pero ang pagkakilala sang bata gid ya ya is apple so ila ihambal apple. Hay may choices, A, M, P. so ang pilion sang bata is A kay para sa iya apple na ya. Ayawan ka ka explain… mansanas dapat, hay gina pilit mo ang bata na mansanas dapat, hay sa iya mother tongue apple ya so na confuse tapat ang bata.” (There are times when it can be confusing because your understanding of the picture in the image is different from the actual name. Like "apple"... its name in Hiligaynon is "mansanas" but the child's recognition is "apple" so they say "apple." Now, there are choices, A, M, P. so the child chooses A because for them, it's "apple." You wouldn't know how to explain... it should be "mansanas," but you're insisting on "mansanas," but in their mother tongue, it's "apple," so the child gets confused.)

Participant No.4: “Kag ang nakita ko pagid sa amon sa Grade 4 nga isa sa impact no kag nagkaroon sang confusion ang bata between Filipino and Hiligaynon. For example, pag ginpasulat mo ang bata sang sentence in Filipino gina combine niya ya sang Filipino kag hiligaynon, for example, lumipad ang pispis ya and that should be ibon. So confused nasa kung nagalakot na sya hiligaynon.” (What I observed with our Grade 4 class is that they get confused between Filipino and Hiligaynon. For example, when you ask a child to write a sentence in Filipino, they combine it with Hiligaynon, for instance, "lumipad ang pispis" and that should be "ibon.")

Participant No.6: “Spelling na, matigbato kita ha? Matigbato spelling ina sya ma'am. Pagabot naman sa Filipino, Pagbaybay kita ha, 1-10 Filipino naman kita ha? Daw ginaano ko na lang sa ila, pag abot sa spelling, English naman kita ha?” (Spelling is matigbato in Hiligaynon. In Filipino it is called pagbaybay. So I gave them 1-10 spelling words in each subject.)

Participant No.5: Especially sa Math namon gid. Diba mag isip kita ya nagamon kita isa, duha, tatlo… onse, doce. Pero pag abot ya sa Math ang onse isa ka napulo kag isa, napulo kag duha, ang isa ka gatos, duwa ka napulo kag tatlo. Amo sina maam mag isip. Amo na maam amon na budlayan sa Math gid. Kay ang aton abi maam nga medium of instruction sa Grade 1-3 Hiligaynon except English and Filipino. (Especially in our Math lessons. You know, we're used to counting like one, two, three... eleven, twelve. But when it comes to Math, eleven is ten plus one, twelve is ten plus two, one hundred is two tens plus three. That's how we think, ma'am. That's what makes Math really challenging for us. Because our supposed medium of instruction from Grade 1-3 is Hiligaynon except for English and Filipino.)

3. Non-Translatable Technical Concepts and Terminologies

The lack of direct translations for technical concepts and terminologies, particularly in Mathematics, was identified as a significant hindrance. Discussants pointed out the challenge of teaching Mathematics in Hiligaynon due to the complexity of spelling out numbers, showcasing the difficulty in implementing the curriculum effectively. The variations in color terminology and the lack of a specific language imposition, as highlighted by various respondents, added to the complexity, making it challenging to teach specific subjects effectively.

Participant No.4: "For example sa mathematics, wala sang mga direct nga words nga magamit nimu for Hiligaynon. So, mas dali maintindihan sang mga bata ang "addition, subtraction, multiplication, division" kaysa sa "pamu-ad ikaw...bahinbahin etc." budlay maam ang pag implement. Ang Multiplication pamu-ad ang division bahinbahin… Bisan sa AP maam ang mga words nga gina gamit.. ang mga "wiswis". Even ang teacher indi ka intindi. …Sang una ga pinamangkot pa ako ya. maam ano na ang bantang bantang na bala sa PE. Bisan subong sir...mag check ko test papers.. kundi sa ila sa grade 3 may mga bantang bantang..Gapinamangkot pa ako ya.. maam ano na ang bantang explain anay sa akon." ("For example, in mathematics, there are no direct words that you can use in Hiligaynon. So, it's easier for the children to understand "addition, subtraction, multiplication, division" than "pamu-ad ikaw...bahinbahin etc." It's difficult to implement, ma'am. Multiplication is "pamu-ad," division is "bahinbahin"... Even in AP, ma'am, the words used... the "wiswis." Even the teacher doesn't understand. ...Before, I used to ask. Ma'am, what's the equivalent of bantang bantang in PE. Even now... when I check test papers... if it's in their Grade 3 papers, there are bantang bantang... I still ask... ma'am, what's the bantang explain to me.")

Participant No.5: Especially sa Math namon gid. Diba mag isip kita ya nagamon kita isa, duha, tatlo… onse, doce. Pero pag abot ya sa Math ang onse isa ka napulo kag isa, napulo kag duha… Amo sina maam mag isip. Amo na maam amon na budlayan sa Math gid. Kay ang aton abi maam nga medium of instruction sa Grade 1-3 Hiligaynon except English and Filipino." (Especially in our Math. We use to count one, two, three… eleven, twelve. But when it comes to MTB Math, eleven is napulo kag isa (ten and one), twelve is napulo kag duha (ten and two)... That's what makes MTB Math difficult for us. Because our supposed medium of instruction in Grades 1-3 is Hiligaynon (pure) except English and Filipino subjects.)

Participant No.4: "…the usual man lang ya nga ara sa community, kay sila gina ano ang color, coloran pero kung MTB kaya du-agan, du-agan tapos ang yellow ya ma'am dalag, Pero ang iban nga color ya ma'am Filipino man ang term. ang ano ang yellow lang gid ya ang dalag, ang orange, dalandan pero Filipino man na ya." (The usual thing in the community is they call it "color, coloran" but in MTB, it's "du-agan, du-agan" then yellow is "dalag". But for some colors, ma'am, the term is Filipino. For example, yellow is "dalag", orange is "dalandan".)

Participant No.2: Sa amon dabi maam ang nabudlayan namon nga subject is ang sa Math gid ya maam. Halimbawa, bisan sa numbers na lang gd, may ara kamo na nga gina pa spell namon ang kada name sang number. example ang "zero" s, i, r,o.. gina pa memorize gid na ya maam hasta gd ya sa 100. Kay diba pag abot sa grade two kag grade three gina pa spell na sang ngalan, example ang twenty- duwa ka napulo. so daw palawig pa bala maam. samantala kun sa English one, two, three. Kung sa English mo sa itudlo, isa lang ka adlaw makuha na sang bata…Like kung sa Kwarta na P 125 and 50 cents. Isa ka gatos kag duwa ka napulo kag lima kag lima ka napulo na sentimos. Mina lawig lawig gid ya." (For us, ma'am, the subject we find most difficult is Math. For example, even with numbers alone, we have to

spell out each name of the number. For instance, "zero" is spelled s, i, r, o... and we really have to memorize that up to 100. Because when it comes to grade two and grade three, you have to spell out the names, for example, twenty - duwa ka napulo. And it is quite longer in MTB. Whereas in English, one, two, three. If you teach it in English, a child can grasp it in just one day... Like if it's in money, P 125 and 50 cents. That's "isa ka gatos kag duwa ka napulo kag lima kag lima ka napulo na sentimos". It really takes a long time.)

4. Difficulty of Parents to Follow-Up Lessons and Homework

The participants acknowledged the hindrance posed by a lack of parental support and recognized that some parents may struggle to assist their children, affecting students' performance. They further noted that MTB-MLE might add to students' academic burden, with some parents expressing dissatisfaction and finding it more challenging than other subjects.

Participant No.8: May ara man mga bata nga na amazed makabalo sang Hiligaynon lalo na ang numbers na bala maam, pero syempre nabudlayan gid sila kay malawig, wala naman other benefit kay daw mas nag dugang pa gani sa academic burden sang mga bata. Ang gwa damo sang mga ginikanan nga gareklamo kay mas mabudlay pa ang MTB kaysa sa iban na subjects. Pareho sila sang Filipino. Nabudlayan ang mga bata." (There are children who are amazed to learn Hiligaynon, especially the numbers, ma'am, but of course, they really struggle because it takes a long time, and there's no other benefit because it seems to add to the academic burden of the children. Many parents complain because MTB is even more difficult than other subjects. Like Filipino, they find it hard. The children struggle.)

Participant No.2: Dugay dugay matapos ila task, e-chat ka dason sang nanay ma'am ano ni sa ang ano ma'am hu. Dugang pagid sa kabudlay, mareply ka pa gid. Kapin pagid kung ila first language is English. Depende man dason sa background sang parent.. lalo na ang mga parents nga millennials. Indi gid ya sila ka relate sang mga terms na ginagamit sa Hiligaynon. Ga ugtas kami kag sila man… ano pa ayhan ang bata." (It takes a long time for them to finish their tasks, and then you will receive a message from the mother asking what this means, ma'am. It adds to the difficulty, and you still have to reply. It is even more challenging if their first language is English. It also depends on the parents' background, especially millennials. They really cannot relate to the terms used in Hiligaynon. We are both struggling. I wonder about the child.)

Participant No.1: Budlayan gid sila ya maam sang Hiligaynon.. maski gani mamangkot pa sila sa mga katigulangan.. indi man kabalo sang iban na terms. (They really struggle with Hiligaynon, ma'am... sometimes they even have to ask the elders... they don't know some terms either.)

5. Perceived Lack of Practicability and Benefits

The perceived lack of practicability and benefits of MTB-MLE emerged as a common concern among discussants. Respondents stated limited observed benefits in academics or language proficiency, suggesting that MTB-MLE might be more effective as a subject rather than a medium of instruction. The challenges in implementation, cited by discussants, questioned the relevance and practical applications of MTB-MLE in real-life situations, particularly in a predominantly English-speaking environment.

Participant No.8: …wala naman other benefit kay daw mas nag dugang pa gani sa academic burden sang mga bata. (There is no other benefit because it adds more to the academic burden of the children.)

Participant No.9: Wala man ako may makita nga benefit kay mas naging burden sya on the part sang mga kabataan kag even sa amon na teachers. Even Ma'am sa support sa language development, daw

wala man sya may nabulig. Most of our learners are fluent in speaking English. As in most of them ila na first language is English. So amo na gani no, if ang iya purpose is maging bridge sya to learn L2 which is English daw no need na tani sini sang MTB(Hiligaynon). Kay naga hambal naya ang mga bata kag readers na sila sa English. When it comes to comprehension mayad nman ya maam ang mga bata kay English has become natural to them. Amo na ina gani ang ila ya nga first language ang English. So why do we have to go back pa ya sa MTB diba? Ara na guid nga learners are speaking the target language which is English which will benefit them later on in life gid ya. Diba, into globalization na kita?"

(I have not seen any benefit because it burdened the children and our teachers. Even, Ma'am, supporting language development has yet to help. Most of our learners are fluent in speaking English. As in most cases, English is their first language. Isn't it unnecessary for MTB (Hiligaynon) if its purpose is to be a bridge to learning L2, which is English? Because the children are already speaking and reading in English. When it comes to comprehension, the children are proficient because English has become natural to them. That is why English has become their first language. So why do we have to revert to MTB? Learners already speak the target language, English, which will benefit them later in life. Isn't it that we are already into globalization?)

Participant No.7: "Actually ok gid sya ya, pero in practical sense abi nga gamiton sang bata sa outside na niya nga pang adlaw adlaw indi na sya ya practical, mahambal ang bata ya nga "manang pabakla ako danay… tapos na pulo kag isa akon kabilog" nano ina ya?" (Actually, it's good, but in a practical sense, using it in the child's everyday life outside (school) it is no longer practical. The child might say, "Manang, can I buy something… You would say "napulo kag isa kabilog" (eleven pieces) It is irrelevant.)

6. Limited Teaching and Learning Resources

Respondents highlighted challenges related to limited teaching and learning resources. As described by some respondents, misalignment in module content and the need for teachers to create their own resources due to a lack of adequate contextualized and localized materials, as mentioned by various respondents, showcased gaps in the availability of instructional materials. Delays in the delivery of books and materials further impacted the timely implementation of the curriculum.

Participant No.7: "…kag ang ara sa worksheet indi man tanan aton nga dialect." Ang AP gani nga worksheet ang laban na gina gamit ang sa Bacolod or Negros kay syempre ang writer taga didto man. ("The MTB being used in some worksheets are not our variety of Hiligaynon." Even in Araling Panlipunan (Social Studies), the worksheets used are in Bacolod or Negros Hiligaynon because, of course, the writer is from there.)

Participant No.1: Somehow may ara nga ma contextualize namon ang mga materials kag ang mga modules. They provide storybooks, and the teachers take the initiative to provide worksheets. Ang worksheets sang Grades 1 to 3 sila gid na ya ga ulubra. Kay kung ma base lang sa ginahatag nila nga materials mabudlay gid. Kay amo na gani maam iba ang nag ubra so mina ga ubra gid ang grades 1 to 3 sang mga worksheets para ma contextualized."(Somehow, we can contextualize the materials and modules. They provide storybooks, and the teacher takes the initiative to provide worksheets. The worksheets for Grades 1 to 3 are handy. Because if we base it on the materials they provide, it is challenging. That is why since different people made them, Grades 1 to 3 have been working on worksheets to contextualize them.)

Participant No.6: “Tani wala na lang sila nag provide modules. tani worksheet na lang or workbook para at least magamit gid bala." (They should have provided worksheets or workbooks instead of modules. At least they would have been helpful.)
Participant No.6: “…ang books or ang module kami na lang ga mato mato (ubra) ya…”(We are the ones who are preparing the books or modules.)
Participant No.3: “Matapos na kami klase amo pa lang ma abot ang books ya. Or may ma abot man na libro pero layo layo sa curriculum guide. Wala ga align sa curriculum. So wala ka gid ya may itudlo. Ma mato mato ka gd… kanugon sang kwarta sang gobyerno.” ("After our classes, that is when the books arrive. Sometimes, books arrive, but they are far from the curriculum guide. They do not align with the curriculum. So, you have nothing to teach. You have to improvise. It is a waste of government funds.")
Participant No.5: “So amo na naga create na manlang kami kag gapangeta sang resources. Create kami sang worksheets nga among gid ya kag activity sheets.” ("So, we are the ones creating and looking for resources. We create worksheets and activity sheets ourselves.")

7. Limited Teachers’ Training and Capability Building

Insufficient teacher preparation for the transition to MTB-MLE was a recurring theme. Various respondents indicated that limited training, inadequate time, and delays in the distribution of materials significantly impacted effective implementation. Inconsistencies in the duration and quality of teacher training were also mentioned, with the availability of training depending on budget allocations.
Participant No.4: “Trainings? Depende kung may budget maam eh… pero sang una pila manlang to ka days.. 5 days… one week.. kag indi man tanan..” (
"Trainings? It depends if there's a budget, ma'am. Nevertheless, it was just a few days... 5 days... one week. And not for everyone.")
Participant No.6: Daw 1 week before sang klase man lang ato maam... dasig dasig lang gani. Maklase na kami pagka Lunes ga training pa lang kami. Ulihi pa na nag abot ang materials nila.” ("About a week before classes, ma'am... it is pretty rushed. We are already starting classes on Monday and are still in training. Their materials arrived later.")

8. Pandemic Related Factors

Teachers observed that students became adept at speaking English during the pandemic due to exposure to social media and online platforms. However, this exposure did not necessarily translate to reading proficiency in English. Further, it points out that students may need more reading proficiency in English despite their ability to speak the language. The pandemic disrupted traditional learning, affecting foundational skills like phonetics.
Participant No.5: “Sang pandemic maam na used ang mga bata sa YouTube, social media. Very good sila sa speaking in English, but indi sila kabalo magbasa English. Sa oral lang sila maam.. pero indi sila kabalo magbasa. listening lang ila na ubra maam.. wala sila abi gabasa. mayad sila sa speaking may accent pa na maam.”

5. Summary, Conclusions, and RecommendationsSummary of the Problems, Methods, and Findings

The study determined the level of knowledge acquisition of learners and the effectiveness of MTB-MLE in public and private schools in the Province of Capiz for the school year 2022-2023. Specifically, the

study sought to answer the following questions:

1. What is the level of knowledge acquisition of learners in private schools as a whole and in terms of Science, Mathematics, and English?
2. What is the level of knowledge acquisition of learners in public schools as a whole and in terms of Science, Mathematics, and English?
3. What is the level of effectiveness of MTB-MLE curriculum implementation in private schools?
4. What is the level of effectiveness of MTB-MLE curriculum implementation in public schools?
5. Is there a significant difference in learners' knowledge acquisition between the private and public schools regarding subjects such as Science, Mathematics, and English?
6. Is there a significant difference in the effectiveness of MTB-MLE curriculum implementation between private and public schools?
7. Is there a significant relationship between learners' knowledge acquisition in private and public schools and science, mathematics, and English?
8. Is there a significant relationship in the effectiveness of MTB-MLE Curriculum Implementation between private and public schools?
9. Is there a significant relationship between knowledge acquisition and the effectiveness of MTB-MLE Curriculum Implementation?
10. What factors affect the effectiveness of MTB-MLE Curriculum Implementation Curriculum Implementation?

This mixed-research study aimed to determine the level of knowledge acquisition of learners and the effectiveness of MTB-MLE in public and private schools in the Province of Capiz for the school year 2022-2023.

The participants of the study were three hundred forty-one (341) out of four hundred eighty learners from private elementary schools, three hundred-eighty (380) out of fourteen thousand seven hundred thirty-five (14, 735) learners from public schools, and sixty-six (66) out of one hundred twenty-one (121) teachers from private schools and seventy-nine (79) out of one thousand eight hundred eighty-eight teachers from public school who were purposively chosen. Two (2) teachers from private schools and seven (7) teachers from public schools, selected purposively for their experience in private and public school settings, participated in the focus group discussion.

The results of knowledge acquisition in private and public schools were gathered using a standardized assessment adopted from Manuel (2022). The effectiveness of Mother Tongue-Based Multilingual Education was measured using a researcher-made survey questionnaire. The factors influencing the efficacy of MTB-MLE were determined using FGD guide questions. The study utilized descriptive statistical tools such as mean and standard deviation. On the other hand, the t-test and Pearson r were used as inferential tests set at a .05 alpha level of significance. Furthermore, qualitative data was analyzed using thematic analysis.

The significant findings of the study are the following:

1. Overall, private school learners' knowledge acquisition level is high. Subsequently, the knowledge acquisition level in Science and English is also high. However, in Mathematics, the level of knowledge acquisition is moderate.
2. Learners' knowledge acquisition level in public schools and Science, Math, and English is moderate.
3. The effectiveness of MTB-MLE Curriculum implementation in private schools is moderate.
4. The effectiveness of MTB-MLE Curriculum implementation in public schools is "moderate."

5. There is a significant difference in learners' knowledge acquisition between the private and public schools as a whole and in terms of Science, Math, and English, which favors the private schools.
6. There is a significant difference in the effectiveness of the MTB-MLE curriculum implementation between private and public schools, which favors the public schools.
7. There is no significant relationship between learners' knowledge acquisition in private and public schools and science, mathematics, and English.
8. There is no significant relationship in the effectiveness of the MTB-MLE Curriculum implementation between private and public schools.
9. There is no significant relationship between knowledge acquisition and the effectiveness of MTB-MLE Curriculum implementation.
10. The enabling factors influencing the effectiveness of MTB-MLE Curriculum implementation are the following: awareness of learners' language backgrounds, teachers' multilingual adaptability, relevant teaching resources, teacher commitment, stakeholder knowledge, positive curriculum influence, and parental involvement. The hindering factors are diverse language backgrounds, learners' inadaptability to language transitions, non-translatable technical concepts, the difficulty of parents to follow-up lessons and homework, perceived lack of practicability and benefits, limited resources, insufficient teacher training, and pandemic-related factors.

Conclusions

Given the results above, the following conclusions are drawn:

1. The overall knowledge acquisition of learners in private schools showed commendable proficiency across subjects. This result confirms the effectiveness of using English as a medium of instruction. It also enhances the reputation of the private schools, attracting more students and parents seeking high-quality education. Additionally, it may lead to improved academic performance and higher graduation rates, contributing to the school's success metrics. A high level of knowledge acquisition in Science and English may indicate a solid understanding of these subjects among students. However, the "moderate" level of knowledge acquisition in Mathematics points out the need to develop and implement targeted interventions to improve overall educational experiences for learners in private schools.
2. The overall level of knowledge acquisition among learners in public schools expressed a fair understanding of contents among all the subject areas. This result may challenge the Department of Education (DepEd), public school administrators, and teachers, requiring them to revisit their curriculum implementation approaches and teaching strategies to design relevant interventions to improve the learners' performance.
3. The effectiveness of Mother Tongue-Based Multilingual Education (MTB-MLE) Curriculum implementation in private schools reflected that teachers have an average perception of the effectiveness of the curriculum. This result reinforces the understanding that private schools prioritize English proficiency over mother tongue languages, potentially marginalizing the importance of local languages in the educational context. This choice may lead to more gaps in the performance of private and public school learners at the intermediate level.
4. The effectiveness of Mother Tongue-Based Multilingual Education (MTB-MLE) curriculum implementation in public schools presented a middle-ground perception of the curriculum's execution. This result may encourage the Department of Education (DepEd) and public school

administrators to assess the effectiveness of their current initiatives and interventions to support the stakeholders during the implementation and make necessary steps to develop tailored strategies and initiatives to overcome identified challenges to provide a more comprehensive approach to the use of MT in teaching and learning and continuously improve the quality of education and enhance student outcomes.

5. The significant difference in learners' knowledge acquisition between private and public schools, both in the overall assessment and across specific subjects such as Science, Math, and English, indicates that private school learners outperform their counterparts in public schools across all subjects. This result will instigate public schools to benchmark with the approaches and strategies that private schools use. This will also boost collaboration initiatives to ensure that there will be less disparity between the performance of public and private school learners.
6. The significant difference in the effectiveness of Mother Tongue-Based Multilingual Education (MTB-MLE) curriculum implementation between private and public schools expresses that, on average, private schools face challenges or are perceived as less effective in implementing the MTB-MLE curriculum. This will prompt private schools to realize that despite the high level of knowledge acquisition among their learners, there is still a need to strive to achieve the advocacies of the MTB-MLE curriculum. It will also empower private schools to adopt a more inclusive and comprehensive approach to language education, enriching the educational experience for students and better preparing them for a diverse and multicultural society.
7. The lack of a significant relationship between knowledge acquisition in English, Science, Mathematics, and overall knowledge acquisition between private and public schools indicates that the student's knowledge acquisition outcomes in private schools do not influence the students' knowledge acquisition outcomes in public school, vice-versa among all subject areas. This will encourage education leaders to assess and pay attention to essential factors that influence learners' knowledge acquisition in public and private schools to ensure that there will be less or no disparity between knowledge acquisition among learners.
8. The absence of a significant relationship between the effectiveness of MTB-MLE (Mother Tongue-Based Multilingual Education) curriculum implementation and the type of school (private or public) suggests that school type does not notably impact the perceived success of MTB-MLE programs. This will encourage collaboration between private and public schools to share best practices and lessons learned in MTB-MLE implementation, foster continuous improvement, and ensure equitable educational outcomes for all students.
9. The success of language-based education programs cannot be solely attributed to curriculum effectiveness. This points out the need for education leaders and researchers to study and create approaches to education reform that address these multifaceted factors. This recognition could lead to the development of more holistic education policies and initiatives aimed at improving teaching practices, providing professional development opportunities for teachers, increasing parental engagement in education, and ensuring equitable access to resource
10. Implementing the Mother Tongue-Based Multilingual Education (MTB-MLE) curriculum is influenced by a tapestry of enabling and hindering factors. The enabling factors encompass a comprehensive framework that supports the success of MTB-MLE. These factors include an awareness of learners' language backgrounds, teachers' multilingual adaptability, relevant teaching resources, teacher commitment, teachers' knowledge of the curriculum, positive curriculum

influence, and parental involvement. Stakeholders' recognition of the cultural goals of MTB-MLE and its positive impact on learner performance underscores the effectiveness of the curriculum.

However, hindering factors, such as diverse language backgrounds, learners' inadaptability, non-translatable technical concepts, the difficulty of parents to follow-up lessons and homework, perceived lack of practicability, limited resources, and insufficient teacher training, pose significant challenges. These challenges highlight the need for targeted interventions, including improved teacher training, the development of more localized and relevant resources, and increased awareness among parents and stakeholders.

To sum up, addressing these hindering factors will be crucial to ensuring the sustained success of MTB-MLE. Collaborative efforts from educators, parents, and policymakers are essential to refining the curriculum and overcoming these challenges, ultimately fostering a more inclusive and effective educational environment.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are suggested.

1. Pupils in both private and public schools under the MTB-MLE curriculum may actively engage with diverse language materials, participate in classroom activities, seek help when needed, practice language skills regularly, explore cultural resources, utilize available learning materials, foster collaboration with peers, and celebrate their achievements. Embracing multilingualism, seeking support, and practicing language skills inside and outside the classroom will enhance their learning experience and promote academic success.
2. Primary education teachers may boost their effectiveness by embracing multilingualism and integrating culturally relevant teaching methods. For instance, teachers may organize regular peer learning sessions to share effective teaching strategies in the local language. Attendance to regular training in language pedagogy, instructional strategies, and classroom management tailored to diverse linguistic and cultural contexts is crucial. Creating a supportive, inclusive environment where students feel valued and engaged is a priority. Collaborating with colleagues, parents, and the community enriches teaching practices and enhances student success. Through ongoing skill development and nurturing positive learning environments, primary education teachers play a vital role in their students' holistic development.
3. Curriculum developers may prioritize creating flexible and adaptable curricula considering students' diverse linguistic backgrounds, socio-economic statuses, and cultural contexts. They may incorporate multilingual approaches, allowing the use of contemporary mother tongues alongside the dominant language of instruction to promote linguistic diversity and inclusivity. Developing culturally relevant learning materials and providing comprehensive training and ongoing support for teachers are also essential. The DepEd may consider revising the MTB textbooks to make them more accessible and understandable for all stakeholders. A robust assessment tool may also be designed to monitor learners' progress; collaboration with stakeholders is crucial. Encouraging continuing research and evaluation will help identify best practices and inform continuous improvement efforts in language education programs. These recommendations aim to meet the diverse needs of learners and promote positive educational outcomes.
4. Education Supervisors may prioritize providing thorough training and professional development opportunities for teachers, focusing on language pedagogy and curriculum design tailored to diverse

linguistic contexts. Schools Division Office may provide additional training opportunities for teachers on effective use of the local language in teaching. These strategies may address the challenges identified and enhance the effectiveness of the MTB-MLE curriculum implementation. Additionally, supervisors may ensure access to quality learning materials aligned with the curriculum and conduct regular classroom observations to provide constructive feedback. They may also engage with stakeholders, including school administrators, teachers, parents, and community members, to garner support and address challenges.

5. School administrators may create a supportive environment valuing linguistic diversity, offering ongoing professional development for teachers, and ensuring resources for culturally relevant learning materials. Principals may allocate resources to develop comprehensive teaching materials in the local language. Collaboration with stakeholders is also crucial to address challenges and garner support for initiatives. Additionally, administrators may provide programs and activities that promote the essential and practical use of the Mother Tongue in teaching and learning. Implementing these recommendations may contribute to learners' knowledge acquisition under the MATATAG Curriculum.
6. Parents may significantly contribute to their child's academic success by actively engaging in their education, creating a conducive learning environment at home, advocating for their educational needs, fostering a love for learning, and embracing cultural and linguistic diversity. By regularly communicating with teachers, providing a quiet space for studying, collaborating with educators to address challenges, encouraging curiosity and critical thinking, and celebrating linguistic and cultural heritage, parents can empower their children to excel academically while preserving their cultural identity.
7. Teacher education institutions may update their curriculum to include courses addressing MTB-MLE principles, methodologies, and strategies. Special training programs and professional development opportunities focused on MTB-MLE equip future teachers with the necessary knowledge and skills. Additionally, providing field experiences in MTB-MLE settings allows teacher candidates to observe and practice strategies under experienced mentors. Emphasizing multilingualism and cultural diversity fosters inclusive learning environments in teacher education programs.
8. Community Extension Services (CES) of Higher Education Institutions (HEIs) may effectively support MTB-MLE initiatives; CES may collaborate with elementary schools implementing these programs, offering resources such as teacher training workshops, educational materials, and curriculum development assistance tailored to MTB-MLE needs. Capacity-building workshops and seminars empower teachers, parents, and community members with the necessary knowledge and skills for effective MTB-MLE integration. CES may also help develop culturally relevant teaching resources in local languages, conduct outreach programs to raise awareness about MTB-MLE and engage in research and evaluation activities to assess program effectiveness and contribute to evidence-based practices in language education, ultimately fostering language diversity, improving educational outcomes, and promoting community development.
9. Future researchers in Mother Tongue-Based Education should investigate undertaking longitudinal studies to monitor the long-term effects of MTB-MLE programs on students' academic performance, language proficiency, and socio-emotional development. Furthermore, they may explore the use of Mother Tongue in teaching and learning under the new MATATAG Curriculum in various

situations, including rural and urban settings, to better understand its usefulness across different demographic groups.

References

1. Abrea, A. C., Ortua, E. C. L., & Robles, R. L. (2020).
2. Experiences of teachers teaching grade 4 pupils with Mother Tongue-Based Multilingual Education (MTB-MLE): inputs to policy development and teacher training for MTB-MLE. Asia Pacific Higher Education Research Journal, 7(1), 1-13. Retrieved: March 2, 2023
3. Acidre, J. (2019). Private education. Manila Standard. https://manilastandard.net/?p=310288. Retrieved: December, 2023
4. ACTRC (2020). Review of the Implemented Curriculum. //actrc.org/wp-content/uploads/2022/05/implemented-curriculum-review-report-20201215.pdf. Retrieved: March 2023
5. ACTRC (2023). Impactful Research. https://drive.google.com/file/d/1kuw_Oq0VztSGHCZK9JrBqfAEzvRLxta0/view Retrieved: December 2023
6. Adriano, M. N. I., Franco, N. T., & Estrella, E. A. (2021).
7. Language-in-education policies and stakeholders' perception of the current MTB-MLE policy in an ASEAN country. Australian Journal of Language and Literacy, The, 44(1), 84-99. Retrieved: March 30, 2023
8. Albano Jr, E. (2021, November 05). Experience of private schools proves folly of DepEd's Mother Tongue policy. Retrieved from Philippine Institute for Development Studies: https://www.pids.gov.ph/details/experience-of-private-schools-proves-folly-of-deped-s-mother-tongue-policy
9. Alcudia, F. F., Bilbao, P., Dequilla MAC, Germinal A., Rosano, D & Violeta M. (2016). Mother Tongue: for Teaching and Learning. Lorimar Publishing Inc., Quezon City, Philippines
10. Alimi, Fatai Oyekola et. al., (2020) Impact of Mother Tongue on Primary Pupils' Literacy and Numeracy Skills in Osun State. International Online Journal of Primary Education (IOJPE) ISSN: 1300-915X https://www.iojpe.org/index.php/iojpe/ article/view/19/22. Retrieved: March 2, 2023
11. Apolonio, A. (2022). Mother Tongue-based Multilingual Education MTB-MLE) in the Philippines: Its Implications to Language Learning. Erudio Journal of Educational Innovation, 9(1), 1-12. doi:https://doi.org/10.18551/erudio.9-1.1. Retrieved: March 30, 2023
12. Aliñab, Jocelyn & Aguja, Socorro & Prudente, Maricar. (2018). Improving Pupils' Mathematics Achievement Through Mother Tongue Based-Multilingual Education. Advanced Science Letters. 24. 4840-4843. 10.1166/asl.2018.11213.
13. Alidou, Hassana and Birgit Brock-Utne. Teaching practices –teaching in a familiar language in Ouane, A., & Glanz, C. (Eds.). (2011). Optimising learning, education and publishing in Africa: The language factor. A review and analysis of theory and practice in mother-tongue and bilingual education in sub-Saharan Africa. Hamburg: UNESCO Institute for Lifelong Learning; Tunis: Association for the Development of Education in Africa (ADEA). https://unesdoc.unesco.org/ark:/48223/pf0000212602 Retrieved: March 7, 2023.
14. American Psychlogical Association. (2017). Education and Socioeconomic Status. Retrieved from American Psychlogical Association: https://www.apa.org/pi/ses/resources/publications/education

15. Atonibai. (2023, Octoer 15). Public vs Private Schools in the Philippines. Retrieved from Atonibai: https://www.atonibai.com/public-vs-private-schools-in-the-philippines/Arzadon, Ched E., McEachern, F., Imperial, N. @inquirerdotnet (2022). Making multilingual education better. https://opinion.inquirer.net/156662/making-multilingual-education-better
16. Ball, Jessica (2011). Enhancing Learning of Children from Diverse Backgrounds. Mother Tongue-Based Bilingual or Multilingual Education in the Early Years. "Paper commissioned for UNESCO" Paris, France. UNESCO. https://unesdoc.unesco.org/ark:/ 48223/pf0000212270. Retrieved: March 7, 2023
17. Ball, Jessica (2014). Children learn better in their mother tongue. https://www.globalpartnership.org/blog/children learn -better-their-mother-tongue. Retrieved: February 2023
18. Bälter, O., Kann, V., Mutimukwe, C. & Malmström, H. (2023). English-medium instruction and impact on academic performance: a randomized control study. Applied Linguistics Review. https://doi.org/10.1515/applirev-2022-0093
19. Benson, C. (2006). Language, education and (dis) empowerment– The important role of local languages in educational development. Critical Educational Visions and Practices in neo-liberal times. Global South Network Publisher. March 7, 2023
20. Benson, Carol. 2005 "The Importance of Mother Tongue-based Schooling for Educational Quality." Paper commissioned for the EFA Global Monitoring Report, The Quality Imperative. UNESCO, Paris, 2005. https://jaromproject.files.wordpress.com/2013/01/carole-benson-the-importance-of-mother-tongue-based-schooling-unesco.pdf. Retrieved: March 7, 2023
21. Belvis, Cyril & Morauda-Gutierrez, Merry Ruth. | Tzu-Bin Lin (Reviewing editor) (2019) Amorphous language as alternative model for multilingual education in the Philippines, Cogent Education, 6:1, DOI: 10.1080/2331186X.2019.1695998
22. Behrmann, T. (2018). Implications for the effects of mother tongue on math and science instruction. In I. Sahin & T. Shelley (Eds.), Evaluating the effects of mother tongue on math and science instruction (pp. 69-74). Monument, CO, USA: ISTES Organization. https://files.eric.ed.gov/fulltext/ED623098.pdf . Retrieved: March 7, 2023
23. Benjamin & Main (2022, January 17). Cognitive Load Theory: A teacher's guide. Retrieved from https://www.structural-learning.com/post/cognitive-load-theory-a-teachers-guide
24. Bernhofer, Juliana & Mirco Tonin(2022) The effect of the language of instruction on academic performance,Labour Economics,Volume 78,2022,102218, ISSN 0927-5371, https://doi.org/10.1016/j.labeco.2022.102218. (https://www.sciencedirect.com/science/article/pii/S0927537122001099
25. Bernardo, E.C. , Aggabao, N., Tarun, J.Z. 2018. Implementation of the Mother Tongue-Based Multilingual Education (MTBMLE) Program: Reactions, Attitudes and Perceptions of Teachers. Asian Conference on Education & International Development 2018. https://papers.iafor.org/wp-content/uploads/papers/aceid2018/ACEID2018_39734.pdf
26. Besa, L. M. (2014). Language use in the university: A clash of policies. Procedia-Social and Behavioral Sciences, 134, 92-100. https://doi.org/10.1016/j.sbspro.2014.04.226. (https://www.sciencedirect.com/science/article/pii/S187704281403136X) Retrieved: March 24, 2023

27. Balacano, R. C. (2020). Juan Tama, Mother Tongue-Based Multilingual Education (MTB-MLE) Storybooks: Their Effectiveness on Pupils' Learning. KnE Social Sciences, 1-5.
28. Bautista, Jane (2023) PISA shows PH students '5 to 6 years' behind. Philippine Daily Inquirer. https://newsinfo.inquirer.net/1871900/pisa-shows-ph-students-5-to-6-years-behind#ixzz8Pg1P5voH
29. Bilbao, Purita P. et al, (2015). Curriculum Development for Teachers. Quezon City, Metro Manila : Lorimar Publishing Inc.
30. Broer, M., Bai, Y., Fonseca, F. (2019). A Review of the Literature on Socioeconomic Status and Educational Achievement. In: Socioeconomic Inequality and Educational Outcomes. IEA Research for Education, vol 5. Springer, Cham. https://doi.org/10.1007/978-3-030-11991-1_2
31. Bukhari, Shahinaz. (2021). Challenges of the Sudden Switch from Mother Tongue Instruction to English as a Medium of Instruction. International Journal of English Linguistics. 12. 76. 10.5539/ijel.v12n1p76. https://www.researchgate.net/publication/356628532_Challenges_of_the_Sudden_Switch_from_Mother_Tongue_Instruction_to_English_as_a_Medium_of_Instruction/link/61a593484553ea1b7ab52c79/download. Retrieved: March 14, 2023
32. Cabansag, John. (2016). The Implementation of Mother Tongue-Based Multilingual Education: Seeing It from the Stakeholders? Perspective. International Journal of English Linguistics. 6. 43. 10.5539/ijel.v6n5p43.
33. Carley, K. Knowledge acquisition as a social phenomenon Instr Sci 14, 381–438 (1986). https://doi.org/10.1007/BF00051829
34. Casinillo, F. D. (2022). Effectiveness of Mother Tongue Based (MTB) Instruction in the Performance of Grade I Pupils in Math. https://www.ijams-bbp.net/wp-content/uploads/2022/07/1-IJAMS-JUNE-ISSUE-18-29.pdf. Retrieved: March 22, 2023
35. Chuo, Kain Godfrey and Walter, Steve (2011). The Kom Experimental Mother Tongue Education Project Report for 2011. https://www.academia.edu/23215773/The_Kom_Experimental_Mother_Tongue_Education_Project_Report_for_2011. Retrieved: March 7, 2023.
36. Cherukunnath, D. and Singh, AP (2022) Exploring Cognitive Processes of Knowledge Acquisition to Upgrade Academic Practices. Front. Psychol. 13:682628. doi: 10.3389/fpsyg.2022.682628.
37. Cooper, Rachel (2017) 6 Countries Fight Poverty with Mother Tongue Education. BORGEN Magazine https://www.borgenmagazine.com/ mother-tongue-education/. Retrieved: March 8, 2023
38. Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.
39. Cristina Chi - Philstar.com. February 6, 2023. House OKs suspension of using mother tongue to teach young learners. https://www.philstar.com/headlines/2023/02/06/2243031/house-oks-suspension-using-mother-tongue-teach-young-learners Retrieved: March 3, 2023
40. Cruz, Isagani. (2009) Mother tongue education, Part 2, Mini Critique, https://www.philstar.com/other-sections/education- Retrieved: March 30, 2023
41. Cummins, J. (2013). Multilingual education for social justice—From coercive to collaborative relations of power. In Speech presented at the 4th international conference on language and education: Multilingual Education for All in Asia and the Pacific—Policies, practices, processes, Bangkok, Thailand.

42. Cummins, J. (2018). Urban Multilingualism and Educational Achievement: Identifying and Implementing Evidence-Based Strategies for School Improvement. In: Van Avermaet, P., Slembrouck, S., Van Gorp, K., Sierens, S., Maryns, K. (eds) The Multilingual Edge of Education. Palgrave Macmillan, London. https://doi.org/10.1057/978-1-137-54856-6_4. Retrieved: April 3, 2023
43. Cummins, J. (1979). Linguistic Interdependence and the Educational Development of Bilingual Children. Review of Educational Research, 49(2), 222–251. https://doi.org/10.2307/1169960
44. Cummins, J. (2000). Language, power, and pedagogy: Bilingual children in the crossfire. Clevedon, UK: Multilingual Matters. http://www.catesoljournal.org/wp-content/uploads/2014/07/CJ13_reviews.pdf
45. Cruz, F. Y. ((2022)). On the Status of English in the Philippines. UP Working Papers in Linguistics, Vol.1, No.1 Cukurova, Mutlu, Bennett, Judith Merryn orcid.org/0000-0002-
5033-0804 and Abrahams, Ian Zoller (2018) Students' Knowledge Acquisition and Ability to Apply Knowledge into Different Science Contexts in Two Different Independent Learning Settings. Research in Science and Technological Education. pp. 17-34. ISSN 1470-1138 https://doi.org/10.1080/02635143.2017.1336709
46. Dagalea, A. J. L., Peralta, S. B., & Abocejo, F. T. (2022). Evaluation of the Mother Tongue-Based Multilingual Education Program in the Philippines. Budapest International Research and Critics in Linguistics and Education (BirLE) Journal, 5(4), 422-431. DOI: https://doi.org/10.33258/birle.v5i4.7269. Retrieved: April 2, 2023
47. Darmini, Ni Komang, "The Effectiveness of Mother Tongue Based Multilingual Education (mtb Mle)" (2021). English Language Institute. 148.https://surface.syr.edu/eli/148 retrieved February 1, 2023
48. David, C., Albert, J. R., & Vizmanos, J. F. (2019, Febuary 19). Pressures on public school teachers and implication on quality. Philippine Institute for Development Studies.
49. David, M. K., Dumanig, F. P., & Manan, S. A. (2017). National Languages-Medium of Instruction-Empowerment or Disempowerment?.https://www.researchgate.net/publication/322224245_National_Languages-Medium_of_Instruction-Empowerment_or_Disempowerment. Retrieved: April 3, 2023
50. Davis, M. L., S M. Witcraft, S. O. Baird, J. A.J. Smits, 2017. Chapter 3 - Learning Principles in CBT,The Science of Cognitive Behavioral Therapy,Academic Press,Pages 51-76,ISBN 9780128034576,https://doi.org/10.1016/B978-0-12-803457-6.00003-9. (https://www.sciencedirect.com/science/article/pii/B9780128034576000039)
51. De Guzman, WG. & De Vera, P. English Language Performance and Difficulties of Pupils in the Mother Tongue – based (MTB) Medium of Instruction https://files.eric.ed.gov/fulltext/EJ1247323.pdf. April 20, 2023
52. Demir, B., & Sönmez, G. (2021). Generation Z students' expectations from English language instruction. Journal of Language and Linguistic Studies, 17(Special Issue 1), 683-701. Submission Date:07/12/2020 Acceptance Date:19/01/2021
53. DepED Order No. 74. (2009, July 14). Institutionalizing mother tongue-based multilingual education (MLE). https://www.deped.gov.ph/2009/07/14/do-74-s-2009-institutionalizing-mother-tongue-based-multilingual-education-mle/. Retrieved: February 8, 2023.

54. DepEd (2012). DepEd order no. 16. Series of 2012. Guidelines on the Implementation of Mother Tongue-Based-Multilingual Education (MTB-MLE). https://www.deped.gov.ph/wp-content/uploads/2012/02/DO_s2012_16.pdf Retrieved: March 1, 2023.
55. DepEd (2013). DepEd order no. 28. Series of 2013. Additional Guidelines to DepEd Order no. 16. S. 2012 (Guidelines on the Implementation of the Mother Tongue-Based Multilingual Education (MTB-MLE). https://www.deped.gov.ph/wp-content/uploads/2013/07/DO_s2013_028.pdf. Retrieved: March 1, 2023.
56. DepEd (2016). Mother Tongue-Based learning makes lessons more interactive and easier for students.Monday, October 24, 2016 https://www.deped.gov.ph/2016/10/24/mother-tongue-based-learning-makes-lessonsmore-interactive-and-easier-for-students/Retrieved : February 1, 2023
57. DepEd Region 2 (2019) Mother-Tongue-Based Multilingual Education (MTB-MLE) Definition https://region2.deped.gov.ph/wpcontent/uploads/2019/04/Proposed-Policy-Guidelines-on-The-Implementation-of-Mother-Tongue-Based-Multilingual-Education-MTB-MLE-Program.pdf
58. DepEd(2023). General Shaping Paper (MATATAG Curriculum) https://www.deped.gov.ph/wp-content/uploads/GENERAL-SHAPING-PAPER-2023.pdf. Retrieved: October 2023
59. Dela Cruz, R. Z., & Hernandez, G. D. (2023). Challenges of public-school elementary mathematics teaching in the new normal. Indonesian Journal of Social Sciences, 15(1), 8–20. https://doi.org/10.20473/ijss.v15i1.40340
60. Education Development Center (EDC)(2017). Mother Tongue-Based Multilingual Education in the Philippines: A study of Literacy Trajectories. USAID/Philippines BASA Pilipinas Program. https://pdf.usaid.gov/pdf_docs/PA00T717.pdf
61. Englis, Tess & Boholano, Helen. (2021). Mother Tongue -Based Instruction in Teaching Elementary Mathematics. Solid State Technology. 64. 4032-4039. https://www.researchgate.net/publication/350276236_Mother_Tongue_-Based_Instruction_in_Teaching_Elementary_Mathematics. Retrieved: March 7, 2023
62. Escuadro, Renelle (2023). Transformational journey of learners through MATATAG curriculum. https://pia.gov.ph/features/2023/11/07/transformational-journey-of-learners-through-matatag-curriculum. Retrieved: November 2023
63. Eslit, Edgar R. Mother Tongue Based Multilingual Education Challenges: A Case Study (2017) Edelweiss Appli Sci Tech 1: 10-23. https://edelweisspublications.com/edelweiss/article/ Mother-Tongue-Based-Multilingual-Education-Challenges-Case-Study-EAST-17-103.pdf. Retrieved: March 8, 2023
64. Eslit, E. R. (2017). Binisaya instruction: Facing the MTB-MLE challenges head-on. Research Gate. Retrieved: March 30, 2023
65. Ethe, N., Andrew, E. A., & Monday, O. (2014) The Effect of Using Mother Tongue in Teaching and Learning Basic Science in Delta State, Nigeria. https://www.ocerints.org/intcess14_epublication/ papers/576.pdf. Retrieved: April 6, 2023
66. Facullo Khunakene, F., De Guzman, B. M., Del-ong, D. M. B., Dongail, G. F. A., Dulay, N. P. L., & Jane, K. L. (2022). Towards integrating mother tongue based–multilingual education (MTB-MLE) subject in the teacher education curriculum: Lessons from the administrators and teachers. International Journal of Recent Research in Interdisciplinary Sciences, 9(2), 37-47. https://doi.org/10.5281/zenodo.6517776. Retrieved: April 2, 2023

67. Falguera, Rhea C. (2022). Effectiveness of Mother Tongue- Based Instruction on Grade 1 Pupil's Performance in Mathematics. INTERNATIONAL JOURNAL OF ADVANCED MULTIDISCIPLINARY STUDIES IJAMS Volume II, Issue 10 October 2022, eISSN: 2799-0664. https://www.ijams-bbp.net/wp-content/uploads/2022/12/IJAMS-WLC-260-270.pdf. Retrieved: March 5, 2023
68. Fillmore, N. (2014). Mother-Tongue Based Multilingual Education policy and implementation in the Philippines: A grounded theory case study. Retrieved from https://www.researchgate.net/publication/333965047_MotherTongue_Based_Multilingual_Education_Policy_and_Implementation_in_the_Philippines_A_Groun ded_Theory_Case_StudY. Retrieved: April 3, 2023
69. Frenette, M., & Winnie Chan, P. C. (2015, March 31). Academic Outcomes of Public. Analytical Studies Branch Research Paper Series. Retrieved from https://files.eric.ed.gov/fulltext/ED585228.pdf
70. Frost, Jim (2024). Cronbach's Alpha: Definition, Calculations & Example. Retrieved from: https://statisticsbyjim.com/basics/cronbachs-alpha/
71. Gawish, A & Main, P (2021, December 10). Barriers to Learning: A teacher's guide. Retrieved from https://www.structural-learning.com/post/barriers-to-learning-a-teachers-guide
72. Gaylo, P. J. B. (2020). Implementing mother tongue based–multilingual education (MTB-MLE): Outcomes and challenges. International Social Science Review, 2, 148-183. https://uz.edu.ph/wp-content/uploads/2020/08/ISSR-VOL2.pdf#page=155. Retrieved: March 31, 2023
73. Garguilo, Richard & Metcalf, Debbie. 2013. Teaching in Today's Inclusive Classrooms – A Universal Design Approach. Second Edition. Wadsworth, Cengage Learning. California, USA
74. George, Tegan (2023). Mixed Methods Research | Definition, Guide & Examples. https://www.scribbr.com/methodology/mixed-methods-research/#:~:text=Published%20on%20August%2013%2C%202021,to%20answer%20your%20research%20question. Retrieved: April 2023
75. Gempeso, H. D. P., & Mendez, J. D. S. (2021). Constructive Alignment of Mother Tongue-Based Multilingual Education (MTB MLE) Language Policy Implementation to the Practices of a Multilingual Classroom. English Language Teaching Educational Journal, 4(2), 125-137. 10.12928/eltej.v4i2.4234 Retrieved: April 2, 2023
76. GGI insights. (2024, January 17). Education for the Poor: Bridging the Gap for Equal Learning Access. Retrieved from Gray Group International : https://www.graygroupintl.com/blog/education-for-the-poor
77. Gonzales*, Jennifer B. (2018). Mother Tongue-Based Multilingual Education Implementation in Cebu Philippines, in the Eyes of the Stakeholders. International journal of Research Science and Management, 5(2), 165–172. https://doi.org/10.5281/zenodo.1185615. Retrieved: April 11, 2023
78. Gourault, K. (2023, May 4). The Impact of Student-Teacher Ratios on Learning: Exploring the Optimal Class Size. Retrieved from Education Advanced: https://educationadvanced.com/resources/blog/the-impact-of-student-teacher-ratios-on-learning-exploring-the-optimal-class/
79. Gumalal, J. and Vilbar, A., 2020. Teaching Science in Mother Tongue: Balancing Compliance with Self-Efficacy. Philippine Journal for Language Teaching, 52(1), pp.25-31.

https://www.upcebu.edu.ph/teaching-science-in-mother-tongue-balancing-compliance-with-self-efficacy/. Retrieved: March 7, 2023

80. Harahap, N.A.S,, Saragih A., & Sumarsih. (2022). Mother Tongue Based Multilingual Education Model in English Language Learning.17(06),876–891. https://doi.org/10.5281/zenodo. 6686366 . Retrieved: April 6, 2023
81. Harden, K., Punjabi, M., & Fernandez, M. (2022). Influences on Teachers' Use of the Prescribed Language of Instruction: Evidence from Four Language Groups in the Philippines. Education Quarterly Reviews, 5(1), 516-530. ISSN 2621-5799. DOI: 10.31014/aior.1993.05.01.460
82. Hogan-Brun, Gabrielle & Robinson, Clinton. (2013). UNESCO and Language Policy and Planning. DOI: 10.1002/9781405198431.wbeal1234 . Accessed: February 23, 2023.
83. Huang, Becky et al., (2018)Examining the effects of socio- economic status and language input on adolescent English learners' speech production outcomes, System,Volume 73, 2018, Pages 27-36,ISSN 0346-251X, https://doi.org/10.1016/j.system.2017.07.004.(https://www.sciencedirect.com/science/article/pii/S0346251X17300933)
84. Huong, Hoang Thi Thu (2008). The implementation of a mother tongue-based pre-school programme for ethnic minority children in Gia Lai, Vietnam. A paper presented at the Regional Consultative Workshop on "Using the Mother Tongue as Bridge Language of Instruction in Southeast Asian Countries: Policy, Strategies and Advocacy". Bangkok, Thailand, 19-21 February 2008.
85. International Bureau of Education (2023) Multilingual education: Breaking barriers, building bridges: promoting mother tongue and inclusive education for all. https://www.ibe.unesco.org/en/node/45
86. Jain, K., & Mohta, S. (2019). The Impact of Home Environmenton Academic Achievement of Secondary School Students. International Journal of Trend in Scientific Research and Development JD, national correspondent of MeridiE in the Philippines, 2021. Mother Tongue-Based Multilingual Education in the Philippines : Its success and struggle. https://varlyproject.blog/mother-tongue-based-multilingual-education-in-the-philippines-its-success-and-struggle/. Accessed: January 2, 2023.
87. Kaba, Abdoulaye & Ramaiah, Chennupati. (2019). Measuring Knowledge Acquisition and Knowledge Creation: a Review of Literature 1.
88. Kachingwe, Clement & Vinnaras Nithyanantham (2023) Examining Factors Affecting Curriculum Implementation in Achieving High Academic Performance in Malawi – A Case Study of Kadzakalowa Community Day Secondary School (Ntcheu). International Journal of Current Science Research and Review. Volume 06 Issue 05 May 2023, DOI: 10.47191/ijcsrr/V6-i5-35, Impact Factor: 6.789
89. Kadtong, M.L. (2017) Pupils' Performance Of The Mother Tongue Based And Non- Mother Tongue Based Grade I Class In The Pioneer Schools At Region XII. Proceedings Journal of Education, Psychology and Social Science Research. Vol04:Iss01:Pg106.https://doi.org/10.21016/4.1 7.106112.131O
90. Karikari, A., Kumi, OE., Achiaa, EA, & Adu , J. (2022) The Impact of Using Mother Tongue as Instructional Language in Teaching and Learning of Mathematics in Rural Primary Schools (A Case Study of four selected Schools in Sefwi Akontombra District, Ghana). International Journal

of Novel Research in Education and Learning Vol. 9, Issue 1, pp: (26-38) ISSN 2394-9686 https://www.noveltyjournals.com/upload/paper/The%20Impact%20of%20Using%20Mother-08022022-1.pd. Retrieved: March 7, 2023

91. Kelly S. (2010) Qualitative interviewing techniques and styles. In: Bourgeault I, Dingwall R, de Vries R. (eds) The Sage Handbook of Qualitative Methods in Health Research, Thousand Oaks: Sage Publications.
92. Khan, F.N, Begum, M & Imad, M (2019). Relationship between Students' HomeEnvironment and their Academic Achievementat Secondary School. Pakistan Journal of Distance & Online LearningVolume: V, Issue II, 2019, 223-234. scribd.com/document/520484606/Relationship-Between-Home-Environment-and-Their-Academic-Performances?
93. Kharbach, Med (2023). What is Quantitative Research According to Creswell? https://www.selectedreads.com/what-is-quantitative-research-according-to-creswell/ Retrieved: May 2023
94. Kirss, L., Säälik, Ü., Leijen, Ä., & Pedaste, M. (2021). School Effectiveness in Multilingual Education: A Review of Success Factors. Education Sciences, 11(5), 193. MDPI AG. Retrieved from http://dx.doi.org/10.3390/educsci11050193 . Retrieved: April, 3, 2023
95. Kurukkan, K. A. (2015, 08 18). Why High School Students Feel Mathematics Difficult? An Exploration of Affective Beliefs. Kozhikode,, Kerala.
96. Krueger, R. A., & Casey, M. A. (2014). Focus groups: A practical guide for applied research. Sage Publications.
97. Langoban, Marisa. (2020). What Makes Mathematics Difficult as a Subject for most Students in Higher Education?. Volume 9. 214-220. https://www.researchgate.net/publication/342888714_What_Makes_Mathematics_Difficult_as_a_Subject_for_most_Students_in_Higher_Education/citation/download
98. Li, Z., Qiu, Z. How does family background affect children's educational achievement? Evidence from Contemporary China. J. Chin. Sociol. 5, 13 (2018). https://doi.org/10.1186/s40711-018-0083-8
99. Liu, J., Peng, P. & Luo, L. The Relation Between Family
100. Socioeconomic Status and Academic Achievement in China: A Meta-analysis. Educ Psychol Rev 32, 49–76 (2020). https://doi.org/10.1007/s10648-019-09494-0
101. Longchasen, J.T.(2023). Measuring the Impact of MTB-MLE on Private Preschool Outcomes in Baguio City. Iconic Research and Engineering Journals, Volume 7 Issue 1 .ISSN: 2456-8880.
102. Lopez, S. B. (2020). Challenges Encountered by Teachers in Teaching Mother Tongue Based-Multilingual Education at Fort Del Pilar Elementary School . International Journal of Social Science and Humanities Research , Vol. 8, Issue 4, pp: (257-264).
103. Loughran, John (2018). The nature of quality in teaching and learning. Retrieved from: https://lens.monash.edu/ 2018/08/14/1357398/the-nature-of-quality-in-teaching-and-learning on January .2024
104. Lu, B. J. (2023). Addressing effects of Covid-19 among Filipino learners. Philippine News Agency.
105. Main, P (2023, July 20). Chomsky's Theory. Retrieved from https://www.structural-learning.com/post/chomskys-theory

106. Main, P (2021, June 11). Jean Piagets theory of Cognitive Development. Retrieved from https://www.structural-learning.com/post/jean-piagets-theory-of-cognitive-development-and-active-classrooms
107. Main, P (2022, October 18). Vygotsky's Theory. Retrieved from https://www.structural-learning.com/post/vygotskys-theory
108. Main, P (2023, July 20). Chomsky's Theory. Retrieved from https://www.structural-learning.com/post/chomskys-theory
109. Magsombol, Rommel S. 2021. Effectiveness of the Use of Mother Tongue as a Medium of Instruction in Teaching Word Problems on Multiplication of Whole Numbers. International Journal of Academic Multidisciplinary Research (IJAMR) ISSN: 2643-9670 Vol. 5 Issue 11, November - 2021, Pages: 130-132. http://ijeais.org/wp-content/uploads/2021/11/IJAMR211118.pdf. Retrieved: March 7, 2023
110. Magsambol, B. (2020). PH slides down to 27th in global English proficiency index. Retrieved January 06, 2021, from https://www.rappler.com/nation/philippines-ranking-global-englishproficiency-index-2020. Retrieved: March 30, 2023
111. Malesińska, K. (2022, January 14). Benefits of learning english at an early age – why should children start learning English early? . Retrieved from Nova Kid: https://www.novakidschool.com/blog/benefits-of-learning-english-at-an-early-age/#blogHeadingText-block_3805a01c12233a2926363e4e31304752
112. Manuel, Sharon H.(2022) Assessment Tool for learners. https://www.deped-click.com/2022/08/grade-4-pre-tests-diagnostic-tests-all.html. Retrieved: March 15, 2023
113. Maramag-Manalastas, A. K. E., & Batang, B. L. (2018. Medium of Instruction on Student Achievement and Confidence in English. TESOL International Journal, 13(3), 88-99.
114. Mariano, L.M., & Gime, A.V. (2020). Ang pagtataya sa implementasyon ng polisiya sa MTB-MLE ng mga pribadong paaralan sa rehiyon sa Pilipinas. International Journal of Research Studies in Education. DOI: 10.5861/ijrse.2020.5821 . http://consortiacademia.org/wp-content/uploads/2020/v9i3/5821_ijrse_final.pdf. Retrieved: March 24, 2023
115. Martin, I. P. (2015). English in mother tongue based multilingual education (MTBMLE) in the Philippines. English for ASEAN Integration: Policies and practices in the region, 110-119. https://d1wqtxts1xzle7.cloudfront.net/38058807/English_in_MTBMLE-libre.pdf. April, 5, 2023
116. Martin, H. (2018). Why Manila's English-Speaking Bubble Needs to Pop": https://www.mironline.ca/why-manilas-english-speaking-bubble-needs-to-pop/
117. McEachern, Firth. (2013). Local languages and literacy in the Philippines: Implications for early grade reading instruction and assessment. 10.13140/RG.2.2.24256.00007. DOI:10.13140/RG.2.2.24256.00007 Retrieved: April 11, 2023
118. McEachern, F. (2013). Mother tongue-based multilingual education: implications for education policy. International Journal of Multilingualism, 10(3), 203-215.
119. McConville, Kieran. (2021). Language barriers in the classroom: From mother tongue to national language. Concern Worldwide U.S., Inc. https://concernusa.org/news/language-barriers-in-classroom/#:~:text=Students%20learning%20a%20second%20language,affect%20their%20ability%20to%20learn.&text=Parents%20may%20also%20not%20speak%20the%20language%20used%20in%20school. Retrieved: May 2023

120. Metila, R., Pradilla, L. A., & Williams, A. (2017). Investigating best practice in Mother Tongue-Based Multilingual Education (MTB-MLE) in the Philippines, Phase 3 progress report: Strategies of exemplar schools. Report prepared for Australian Department of Foreign Affairs and Trade and Philippine Department of Education. Melbourne and Manila: Assessment, Curriculum and Technology Research Centre (ACTRC). https://actrc.files.wordpress.com/2018/10/09-17-2018-mtb-mle-report-phase-3-v5.pdf. Retrieved: March 29, 2023
121. Metila, R., Pradilla, L., & Williams, A. (2016). The challenge of implementing mother tongue education in linguistically diverse contexts: The case of the Philippines. The Asia-Pacific Education Researcher. doi: 10.1007/s40299-016-0310-5. https://www.readcube.com/articles/10.1007%2Fs40299-016-0310-5?author_access_token=4N3PdntvzYhLoG9FhNus9fe4RwlQNchNByi7wbcMAY6cjqRku_FZY4MUFZOYAcqrweEW2i4f925HoegOzOLgzbTN6IlrCgEDvTtZ5Kh7FqufrGXamIcTX0iDVShZ4Q3KwWE4x1cRfqGRgV7nGxuwNA= Retrieved: March 29, 2023
122. Meyer, D (2023) Towards a theory of knowledge acquisition – re-examining the role of language and the origins and evolution of cognition, Educational Philosophy and Theory, 55:1, 57-67, DOI: 10.1080/00131857.2022.2061350
123. Mondez, R. (2013). Appropriateness of Mother-Tongue Based Multi-Lingual Education (MTB-MLE) in Urban Areas: A Synthesis Study. International Journal of Science and Research, 2(1), 611-620. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=56746e89592503b1d232fe8ef3e54eb00b67a54b. Retrieved: March 30, 2023
124. Mlephil (2011) Improving Learning Outcomes through Mother Tongue-Based Education The following report is from eddata: 2011/09/22/ https://mlephil.wordpress.com/2011/09/22/improving-learning-outcomes-through-mother-tongue-based-education/Retrieved February 1, 2023
125. Mondez, R. (2013). Appropriateness of Mother-Tongue Based Multi-Lingual Education (MTB-MLE) in Urban Areas: A Synthesis Study. International Journal of Science and Research, 2(1), 611-620.
126. Monje, Jennifer D. , Orbeta, Aniceto C. Jr., Francisco, Kris A. , Capones, Erlinda M.(2021) 'Starting Where the Children Are': Process Evaluation of the Mother Tongue-Based Multilingual Education Program Implementation. .https://www.pids.gov.ph/publication/research-paper-series/starting-where-the-children-are-process-evaluation-of-the-mother-tongue-based-multilingual-education-program-implementation Retrieved : March 6, 2023.
127. Morales-obod, M. , Ramirez, M. N. V. , Satria, E. & Indriani, D. E. (2020). Effectiveness on the Use of Mother Tongue in Teaching the Concepts of Fraction Among Second Grade of Elementary School Pupils . Journal for the Education of Gifted Young Scientists , 8 (1) , 291-304 . DOI: 10.17478/jegys.637002. Accesed: Feb 1, 2023.
128. Morin, A. 2012.Inner Speech,Encyclopedia of Human Behavior (Second Edition),Academic Press,Pages 436-443,ISBN 9780080961804,https://doi.org/10.1016/B978-0-12-375000-6.00206-8.(https://www.sciencedirect.com/science/article/pii/B9780123750006002068)
129. Munir, Javeria & Faiza, Mehreen & Daud, Sana. (2023). The Impact of Socio-economic Status on Academic Achievement. 3. 695-705. 10.54183/jssr.v3i2.308.

https://www.researchgate.net/publication/371350334_The_Impact_of_Socio-economic_Status_on_Academic_Achievement/citation/download

130. Namanya, Sheri Joy C. 2017. The Effects of Mother Tongue-Based Multilingual Education on the English literarcy of Children in Silang Philippines.Retrieved: March 8, 2023
131. Naite, Ibrahima (2021). Impact of Parental Involvement on Children's Academic Performance at Crescent International School, Bangkok, Thailand. IOP Conf. Series: Earth and Environmental Science690 (2021) 012064 IOP Publishing doi:10.1088/1755-1315/690/1/012064
132. Nath, Baiju.K. 2010. Major Language Theorists influencing Learning of Mathematics. https://files.eric.ed.gov/fulltext/ED512896.pdf . Retrieved March 7, 2023.
133. Nolasco, R. M. (2008, July). The prospects of multilingual education and literacy in the Philippines. In The 2nd International Conference on Language Development, Language Revitalization, and Multilingual Education in Ethnolinguistic Communities, Bangkok, Thailand (pp. 1-3). https://www.seameo.org/_ld2008/doucments/Presentation_document/NolascoTHE_PROSPECTS_OF_MULTILINGUAL_EDUCATION.pdf. Retrieved: April 5, 2023
134. Nolasco, R (2012). K+12 & MTB-MLE: Make haste, lay waste. Philippine Daily inquirer. http://opinion.inquirer.net/2509/make-haste-lay,waste. Retrieved: 14 February 2023
135. Nordquist, Richard (2019). "mother tongue definition". https://www.thoughtco.com/mother-tongue-language-1691408#:~:text=The%20term%20%22mother%20tongue%22%20refers,terms%20are%20not%20necessarily%20synonymous).Accessed February 23, 2023
136. OECD. (2014). How do public and private schools differ? Education at a Glance 2014: highlights. Paris: OECD Publishing.
137. OECD (2020), "Students' socio-economic status and performance", in PISA 2018 Results (Volume II): Where All Students Can Succeed, OECD Publishing, Paris. DOI: https://doi.org/10.1787/f7986824-en
138. Obod, M.M., Remirez, M.N.V., Satria, E., Asmoni, A., & Indriani, D.E. (2019). Effectiveness on the Use of Mother Tongue in teaching concepts of fraction Among Second Grade of Elementary School Pupils. Journal for the Education of Gifted Young Scientists, 8(1), 291-304. DOI: http://dx.doi.org/10.17478/jegys.637002
139. Oda, R., & Vizconde, C. (2021). Nanung epektu na?(What's the effect?): impact of mother tongue-based multilingual education (MTB-MLE) policy on language use and language attitudes of 5th graders in Pampanga, the Philippines. Asian Journal of English Language Studies (AJELS) Volume. Retrieved: March 30, 2023
140. Officialgazette. 2013. Republic Act No. 10533..https://www.officialgazette.gov.ph/2013/05/15/republic-act-no-10533/ Accessed: February 2023.
141. Okal, B.D (2014) Benefits of Multilingualism in Education. Universal Journal of Educational Research- 2(3): 223-229, 2014 DOI: 10.13189/ujer.2014.020304 Retrieved https://files.eric.ed.gov/fulltext/EJ1053855.pdf on April 2023.
142. Omkoi District, Chiangmai Province: A Case Study from Thailand. A paper presented at the Regional Consultative Workshop on "Using the Mother Tongue as Bridge Language of Instruction

in Southeast Asian Countries: Policy, Strategies and Advocacy". Bangkok, Thailand, 19-21 February 2008.

143. Orbeta, Anecito Jr. C. & Pacqueo, Vicente B. (2022). Philippine Education: Situationer, Challenges, and Ways Forward. Discussion Paper Series No. 2022-23. Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/document/pidsdps2223.pdf. Retrieved March 2, 2023.
144. Ouane, A., & Glanz, C. (Eds.). (2011). Optimising learning, education and publishing in Africa: The language factor. A review and analysis of theory and practice in mother-tongue and bilingual education in subSaharan Africa. Hamburg: UNESCO Institute for Lifelong Learning; Tunis: Association for the Development of Education in Africa (ADEA). https://unesdoc.unesco.org/ark:/48223/pf0000212602 Retrieved: March 7, 2023.
145. Owoh, T. (2016). Teacher Effectiveness as Correlate of Students' Cognitive. Journal of Education and Practice, 124.
146. Oyewole, Olu. 2017. Influence of Mother Tongue in the Teaching and Learning of English Language in Selected Secondary Schools in Ondo State, Nigeria. Journal of Education and Practice. ISSN 2222-1735 (Paper) ISSN 2222-288X (Online). https://core.ac.uk/download/pdf/234641133.pdf. Retrieved: March 14, 2023
147. Ozfidan, Burhan (2017). Right of Knowing and Using Mother
148. Tongue: A Mixed Method Study. English Language Teaching; Vol. 10, No. 12; 2017. ISSN 1916-4742 E-ISSN 1916-4750 Published by Canadian Center of Science and Education. http://doi.org/10.5539/elt.v10n12p15. Retrieved on April 24, 2023.
149. Panezai, Sania Gul, 2023. Pakistani English Language Teachers' Beliefs About Mother Tongue-Based Multilingual Education Policy: Findings from the Government Primary Schools of Balochistan. ISBN 978-981199350-3, 978-981199349-7. DOI 10.1007/978-981-19-9350-3_14
150. Paqueo, A. C. (2022). Philippine Education: Situationer, Challenges, and Ways Forward . Philippine Institute for Development Studies.
151. Parba, Jayson . 2018. Teachers' shifting language ideologies and teaching practices in Philippine mother tongue classrooms. Linguistics and Education,Volume 47, Pages 27-35,nISSN 0898-5898,https://doi.org/10.1016/j.linged.2018.07.005. (https://www.sciencedirect.com/science/article/pii/S0898589817304941) Retrieved on March 22, 2023
152. Parola, A. (2019). Multi-Media Assisted Instruction: Its Effect on Oral and Silent Reading of Grade One Learners of Mother Tongue Based Multi-Lingual Education (MTB-MLE). Ascendens Asia Journal of Multidisciplinary Research Abstracts, 3(2G).
153. Perez, Noremay. (2019). A Comparative Study of the MTB-MLE Programs in Southeast Asian Countries. 47-55. https://www.researchgate.net/figure/Summary-of-the-MTB-MLE-Curricula-in-Five-Selected-Southeast-Asian-Countries_fig2_346656573. March 8, 2023
154. Peter N. Mose & Russell H. Kaschula (2019): Developing Mother Tongues as Academic Languages in Primary Schools in Kenya: Exploring Extent and Indispensability, Journal of Language, Identity & Education, https://doi.org/10.1080/15348458.2019.1645605. Retrieved : March 6, 2023

155. Pflespsen, A. (2015) Planning for Language Use in Education: Best Practices and Practical Steps to Improve Learning Outcomes. RTI International. Washington, DC: U.S. Agency for International Development.
156. Philstar.com. October 17, 2022. DepEd to junk 'mother tongue' subject, but not as medium of instruction. https://www.philstar.com/headlines/2022/10/17/2217367/deped-junk-mother-tongue-subject-not-medium-instruction. Retrieved : March 6, 2023.
157. Purita P. Bilbao, f. T. (2015). Curriculum Development for Teachers. Quezon City, Metro Manila : Lorimar Publishing Inc.
158. Pradilla, L. A., Metila, R., & Williams, A. (2017). Investigating best practice in Mother Tongue-Based Multilingual Education (MTB-MLE) in the Philippines, Phase 4 progress report: School-related factors and learning outcomes. Report prepared for Australian Department of Foreign Affairs and Trade and Philippine Department of Education. Melbourne and Manila: Assessment, Curriculum and Technology Research Centre (ACTRC). https://actrc.org/wp-content/uploads/2022/04/mtb-mle-phase-4-report.pdf. Retrieved, March 29, 2023
159. Premsrirat., Suwilai; Burarungrot, Mirinda (2022).Journal of Research in Social Sciences and Language (2022). Ayodeji,M.A. & Popoola, A.A. (2022). . DARIAH-DE. https://doi.org/10.20375/0000-000e-8b1c-7
160. Pouezevara, Sarah & McEachern, Firth. (2017). Considerations and challenges for using EGRA in multilingual environments: The case of the Philippines.
161. Quijano, Y.S. & Eustaquio, O.H. (2008b). Using the Mother Tongue as a Bridge Language of Instruction in Two Schools in LaPaz, Agusan del Sur, Philippines: A Case Study. A paper presented at the Regional Consultative Workshop on "Using the Mother Tongue as Bridge Language of Instruction in Southeast Asian Countries: Policy, Strategies and Advocacy". Bangkok, Thailand, 19-21 February 2008.
162. Ramiro Z. dela Cruz, G. D. (2023). Challenges of public-school elementary mathematics teaching in the new normal. Indonesian Journal of Social Sciences Volume 15 No. 01, page 8-20.
163. Ramlakshmi, T. Banu (2013) Language Learning Theories: An Overview. Shanlax International Journal of Education, Vol. 2 No. 1 December, 2013 ISSN: 2320 – 2653. https://dl.icdst.org/pdfs/files1/066bac5d10cdd2c631e1cff9d03f79eb.pdf
164. Redmond, M., Kosonen, K., & Young, C. (Eds.). (2009). Mother tongue as bridge language of instruction: Policies and experiences in Southeast Asia. Southeast Asian Ministers of Education Organization (SEAMEO) Secretariat. http://documents.worldbank.org/curated/en/527021468104056444/Mother-tongue-as-br…
165. Ricablanca, J. D. (2014). Effectiveness of mother tongue-based instruction on pupils' achievement in mathematics. Unpublished Master's Thesis submitted to Central Mindanao University. Philippines.-------Unpublished
166. Ronda, Ranier Allan (2022). DepEd going 'back to basics' in curriculum review, The Philippine Star. https://www.philstar.com/headlines/2022/10/15/2216745/deped-going-back-basics-curriculum-review. Retrieved: February 2023
167. Saidu Yahaya Ojoo & Mudassir Ismaila Moyi (2022). Using Mother-Tongue in Teaching of Science and Technology: Reference to the North-East and North-West Geo-Political Zones, Nigeria. Sch Int J Linguist Lit, 5(4): 123-129. Published by Scholars Middle East Publishers,

Dubai, United Arab Emirates https://saudijournals.com/media/articles/SIJLL_54_123-129c.pdf. Retrieved : March 7, 2023.

168. Schoenfeld, A.H. (2022). Why Are Learning and Teaching Mathematics So Difficult?. In: Danesi, M. (eds) Handbook of Cognitive Mathematics. Springer, Cham. https://doi.org/10.1007/978-3-030-44982-7_10-1
169. Senate of the Philippines. 2023. Gatchalian: EDCOM II to address K-12 curriculum woes. https://legacy.senate.gov.ph/press_release/2023/0312_gatchalian1.asp. Retrieved: April 8, 2023
170. Santiago, J. G., & Dagdag, J. D. (2021). The effect of mother tongue-based multilingual education on the Science achievement and metacognitive learning orientations of Ilocano grade 3 pupils: Implications for policy and practice. Journal of Research, Policy & Practice of Teachers and Teacher Education, 11(2), 46-58. https://doi.org/10.37134/jrpptte.vol11.2.4.2021
171. Steyn, G. (2017, August). The transition of Grade 4 learners to English as medium of instruction.Pretoria.Retrievedfrom:https://repository.up.ac.za/bitstream/handle/2263/65469/Steyn_Transition_2017.pdf?sequence=1
172. Steyn, G. (2017, August). The transition of Grade 4 learners to English as medium of instruction. Pretoria. Retrieved from https://repository.up.ac.za/bitstream/handle/2263/65469/Steyn_Transition_2017.pdf?sequence=1
173. Sumbalan, E., Caterial, M. Z., Jimeno, R., & Balane, C. (2017). The Utilization of Mother Tongue in Teaching Young Learners: Its Implications to Pre-Service Teachers. Journal of Science, Engineering and Technology (JSET), 5, 15-22. Retrieved from https://www.ijterm.org/index.php/jset/article/view/112 on MArch 18, 2023
174. Suna, H. E. et al. (2020). Socioeconomic Status and School Type as Predictors of Academic Achievement. Journal of Economy Culture and Society(61), 41-64. https://doi.org/10.26650/JECS2020-0034
175. Sweller, John, (1988) Cognitive load during problem solving:
176. Effects on learning,Cognitive Science, Volume 12, Issue 2,1988, Pages 257-285, ISSN 0364-0213,https://doi.org/10.1016/0364-0213(88)90023-7.(https://www.sciencedirect.com/science/article/pii/0364021388900237)
177. Sweller, J. (2010). Element interactivity and intrinsic, extraneous, and germane cognitive load. Educational Psychology Review, 22(2), 123-138. DOI:10.1007/s10648-010-9128-5 . Retrieved: April 11, 2023
178. Sweller, John (2011)CHAPTER TWO - Cognitive Load Theory, Psychology of Learning and Motivation, Academic Press,Volume 55,2011,Pages 37-76,ISSN 0079-7421,ISBN 9780123876911,https://doi.org/10.1016/B978-0-12-387691-1.00002-8. (https://www.sciencedirect.com/science/article/pii/B9780123876911000028)
179. Syomwene, A. (2018, July 2). Effective School Indicators for Quality Curriculum Implementation Process. African Journal of Education,Science and Technology, 4(3), pp 150-159. https://doi.org/https://doi.org/10.2022/ajest.v4i3.116
180. Tagabi, G.A. 2023. UN rapporteur pushes for teaching of mother tongue in the face of House's suspension of Mother-Tongue Based Multilingual Education. https://wvsu.edu.ph/un-rapporteur-pushes-for-teaching-of-mother-tongue-in-the-face-of-houses-suspension-of-mother-tongue-based-multilingual-education/. Retrieved: April 11, 2023

181. Tarraya, H. O. (2023, June 24). Teachers' Workload Policy: Its Impact on Philippine Public School Teachers. Retrieved from Puissant: https://puissant.stepacademic.net/puissant/article/view/246
182. Tavares, Nicole Judith. 2015. How strategic use of L1 in an L2- medium mathematics classroom facilitates L2 interaction and comprehension. International Journal of Bilingual Education and Bilingualism. International_Journal_of_Bilingual_Education_and_Bilingualism_How_strategic_use_of_L1_in_an_L2_medium_mathematics_classroom_facilitates_L2_interaction_and_comprehension?auto=download&email_work_card=download-paper. Retrived: March 14, 2023
183. Tenazas, N. M. (2022). The Financing of Education in the Philippines. 2. UNESCO.
184. Team Varthana (2023) Multilingual Education: Benefits and Challenges. https://varthana.com/school/multilingual-education-benefits-and-challenges
185. Teemant, A. & Pinnegar, S. E. (2019). The Threshold Hypothesis: Jigsaw Reading B2. In B. Allman, Principles of Language Acquisition. EdTech Books. Retrieved from https://edtechbooks.org/language_acquisition/jigsaw_reading_e
186. Tenorio, Alvin D. (2022) When language gets into the equation: mother tongue-based multilingual education (MTB-MLE) policy appropriation in elementary mathematics instruction, Journal of Multilingual and Multicultural Development, DOI: 10.1080/01434632.2022.2039673
187. The Citizens Foundation (2020) Finding Identity, Equity, and Economic Strength by Teaching in Languages Children Understand Mother tongue based multilingual education designed for schools in Pakistan
188. Thomas, L. (2022, December 05). Quasi-Experimental Design | Definition, Types & Examples. Scribbr. Retrieved April 8, 2023, from https://www.scribbr.com/methodology/quasi-experimental-design/
189. Thomas, W. P. Collier. VP (2002). A National Study of School Effectiveness for Language Minority Students' Long-Term Academic Achievement. Berkeley: University of California Berkeley Center for Research on Education. Diversity & Excellence.
190. Trudell, Barbara (2016). The impact of language policy and practice on children's learning: Evidence from Eastern and Southern Africa. Commissioned by UNICEF Eastern and Southern Africa Regional Office (ESARO), Basic Education and Gender Equality (BEGE) Section. https://www.unicef.org/esa/sites/unicef.org.esa/files/2018-09/UNICEF-2016-Language-and-Learning-FullReport.pdf. Retrieved: March 6, 2023.
191. Trujillo, Juliet S. 2020. The Use of Mother Tongue in Instruction: Pupils' Performance Across The Years. ISSN: 2231-1335. Globus Journal of Progressive Education. https://globusedujournal.in/wp-content/uploads/2020/05/Juliet-Trujillo-GPEJJ20.pdf. Retrieved: March 14, 2023
192. Tufail, M., & Nosheen, Z. (2023). Investigating The Involvement Of Parents In Their Children's Education At Primary School Level. Journal of Education and Social Studies, 420.
193. Tupas, Ruanni & Martin, Isabel. (2017). Bilingual and Mother Tongue-Based Multilingual Education in the Philippines. 10.1007/978-3-319-02258-1_18.
194. Tupas, R. (2014). Inequalities of multilingualism: Challenges to mother tongue-based multilingual education. Language and Education, 29(2), 112-124. http://dx.doi.org/10.1080/09500782.2014.977295

195. UNESCO. (1953)The use of vernacular language in education. Monograph on Fundamental Education. Paris. http://www.inarels.com/resources/unesco1953.pdf Retrieved on April 23, 2023
196. UNESCO. 2003. Education in a multilingual world. Paris: UNESCO. Retrieved from: https://unesdoc.unesco.org/ ark:/48223/pf0000129728. Accessed February 23, 2023.
197. United Nations. 2015. Sustainable Development Goals. 17 Goals To Transform our World. http:// www.un.org/sustainabledevelopment/education/. Retrieved: April 23, 2023
198. UNESCO-IIEP. 2022) Language of instruction. https://policytoolbox.iiep.unesco.org/policy-option/language-of-instruction/#_Glossary_1. Accessed: February 23, 2023.
199. UNESCO.2022. Why mother language-based education is essential.https://www.unesco.org/en/articles/why-mother-language-based-education-essential#:~:text=UNESCO%20has%20been%20leading%20the,learning%20outcomes%20and%20academic%20performance. Retrieved: February 6, 2023
200. University of Washington(2018). Understanding Item Analyses. Office of Educational Assessment. University of Washington. Retrieved from http://www.washington.edu/assessment/scanning-scoring/scoring/reports/item-analysis/.
201. Velu, K. & Dr. Farook, M. (2021). Sociolinguistic Perspectives in English Language Learning in Primary Schools Of Tamilnadu. International Journal of Current Research and Modern Education (IJCRME), 6(1), 4–6. https://doi.org/10.5281/zenodo.4637470. Retrieved: April 5, 2023
202. Villalba, Vida Luz (2013). Mother Tongue as Medium of Instruction: Parents' and Teachers' Attitudes and Pupils' Listening Comprehension. Division of Curriculum and Instruction College of Education University of the Philippines Diliman, Quezon City
203. Villarta, Ruth T. (2022). Manobo-Dulangan Lexicography: A Reference to a Mother Tongue-Based System. https://doi.org/10.5281/zenodo.7486331. Retrieved: April 6, 2023
204. Vrooman, Michael D, "The Linguistic Interdependence Hypothesis and the language development of Yucatec Maya -Spanish bilingual children" (2000). Doctoral Dissertations Available from Proquest. AAI9988850. https://scholarworks.umass.edu/dissertations/AAI998885
205. Wiesen, G. (2023). What is Knowledge Acquisition?. https://www.languagehumanities.org/what-is-knowledge-acquisition.htm Accessed: February 6, 2023.
206. Williams, A., Metila, R., Pradilla, L. A., & Digo, M. (2014). Investigating Best Practice in MTB-MLE in the Philippines MTB-MLE: Phase 1 Progress Report. University of the Philippines: Assessment, Curriculum and Technology Research Centre.
207. Yap-Dequiña, M.G. & Oliva, E. R. A. (2022) Silent Cries: Attitudes and Problems of Teachers Teaching MTB-MLE in Public Schools. EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal Volume: 8| Issue: 1. https://doi.org/10.36713/epra9386. Retrieved: March 31, 2023
208. Yassin, Wassim Abou & Chaaban, Haneen. 2021. Teaching Science to Elementary Students Using Mother Tongue versus a Foreign Language: The Case of Lebanon. https://www.ijhssnet.com/journals/Vol_11_No_8_August_2021/7.pdf. Retrieved: March 7, 2023.
209. Young, Catherine. 2011. Enablers and Constraints of an Effective and Sustainable Mother Tongue-based Multilingual Education Policy in the Philippines. https://www.academia.edu/3266325/Enablers_and_Constraints_of_an_Effective_and_Sustainable_Mother_Tongue_based_Multilingual_Education_Policy_in_the_Philippines?email_work_card=view-paper. Retrieved: March 17, 2023

210. Young, Catherine and Trudell, Barbara (2016). SIL International . Good Answers to Tough Questions in Mother TongueBased Multilingual Education.https://www.sil.org/sites/default/files/files/sil_2016_good_answers_to_tough_questions_0.pdf
211. Yadav, Manoj. (2014). Role of Mother Tongue in Second Language Learning. International Journal of Research. 1. 572-582. https://www.researchgate.net/publication/283355564_Role_of_Mother_Tongue_in_Second_Language_Learning. Retrieved: March 14, 2023
212. Zach (2023). Slovin's Formula Calculator. https://www.statology.org/slovins-formula-calculator/. Retrieved: March 2023
213. Zergani, M. (2016). Effects of using and teaching with mother tongue language in primary school. Retrieved from https://www.linkedin.com/pulse/effects using-teaching-mother- tongue-language-primary-moein-zergani/.170+ Talaytayan MLE Inc. (2014, January 24). Statement of stakeholders of the Ilokano language on the Ilokano orthography issue. http://mothertongue-based.blogspot.com/2-14/01/statement-ofstakeholders-of-ilokano.html. Retrieved: 14 February 2024.Jack C.M., "Electromagnetic Effects on the Different Kinds of Water", Journal of Electromagnetic Effects, 1992, 2 (4), 47–76.