

Transitioning from Mother Tongue to English: Exploring the Challenges Faced by Grade 4 Teachers

Gloria N. Beltran¹, Jen Shanen D. Galang², Jaymielyn N. Garcia³, Mari Mel C. Salazar⁴, Dr. Jane M. Malit⁵

¹College of Education, Don Honorio Ventura State University, Cabambangan, Bacolor, Pampanga, Philippines
2019993298@dhsu.edu.ph / gloriabeltran985@gmail.com¹ / jenshanendgalang@gmail.com² / jaymielyngarcia6@gmail.com³ / marimelsalazarc@gmail.com⁴ / jmmalit@dhsu.edu.ph⁵

Abstract: *The study explored the challenges faced by grade 4 teachers as their students' medium of instruction transitions from their mother tongue to English. The researchers utilized a qualitative exploratory design. Eleven Grade 4 Mathematics teachers from the selected schools in the Division of Pampanga were identified as informants of the study using purposive sampling. The data was collected through the use of semi-structured interviews; and were analyzed using thematic data analysis in identifying the major themes and sub-themes. The three major themes that were explored in the study are the following: (1) Challenges of Grade 4 teachers in transitioning the medium of instruction from their mother tongue to English. (2) Adjustments made by the Grade 4 teachers to cope with changes in the medium of instruction. (3) Effects of the language shift on the teaching strategies and pedagogies of grade 4 teachers. In light of the findings, the researchers recommended the following: (1) The Department of Education may provide instructional materials to aid the effective delivery of lessons. (2) The teachers may attend relevant training to improve their teaching skills, become familiar with the many strategies they can use to educate the learners, and design their instructional materials to make the lesson easier to understand. (3) To facilitate the learning of the lessons in Mathematics, the teachers may use a multi-lingual approach to establish the connection of what the learners have learned in the mother tongue to English. (4) This study may be used for more in-depth studies by other researchers.*

Keywords— Transition, Challenges, Mother Tongue, English, Mathematics

INTRODUCTION

Language is primarily used to communicate among people in society. It has a crucial role in cultural expression as well as in showing how a group's customs and ideas are shared. Communication enables individuals to learn new things, and promote civilization. The reform in language policy is part of a global trend to foster mother-tongue instruction in students' early years of school. It is evident in Southeast Asia, where many educational programs use a primary language approach (Burton, 2013) Language is a continuous cause of conflict at the local, national, and international levels, as it is inextricably linked to issues of identity, politics, and development. Communities in the Asia-Pacific are the most vibrant in using a variety of languages. Yet, the educational systems rarely reflect this rich cultural and linguistic diversity in their classrooms in many countries (Malone, 2019). In most countries worldwide, fluency in a second language is emphasized and demanded among all children before progressing to the next level of schooling or moving up into higher education and before entering the employment sector (Taylor & Von Fintel, 2016; Steyn, 2017). However, in many cases, children who are obliged to learn in a language other than their mother tongue experience considerable difficulties accessing formal schooling, completing it, and reaping its benefits. Yadav (2014) emphasized that the significance of the mother tongue in second language acquisition has long been a source of controversy and dispute. Teachers are guilty when they rely heavily on their native language rather than the English medium of instruction in teaching.

As Steyn (2017) mentioned, grade 4 is the most challenging year of schooling since most grade 3 students received primary education in their mother tongue from a single teacher who teaches all four subjects. Grade 4 covers the transition to the Intermediate Phase, which suggests that the shift in the medium of instruction brings a set of hurdles for both students and teachers to overcome. This shift in language, which occurred due to a spreading trend across numerous nations, created some challenges in its implementation.

According to Wa-Mbaleka (2014), the Philippines is in a challenging situation due to its large variety of languages, which is 185. Yet, only a small number are utilizing them more often. It is evidence of a scenario wherein students with different languages study together within one classroom. This scenario is accurate for students and also for teachers who teach the mother tongue but do not speak it. The Philippines is renowned for its competence in competing in the global market by embracing the international language. Workers from the Philippines worldwide are being sent to work in English-speaking environments. However, the Philippines is, ironically, introducing the mother tongue with the MTB-MLE.

The Mother Tongue-Based Multilingual Education (MTB-MLE) program was implemented in the Philippines' K-12 Basic Education Program by enacting Republic Act 10533, commonly known as the Enhanced Basic Education Act of 2013. As stated in Section 4 of this Republic Act, The Department of Education (DepED) shall develop a mother

tongue-based transition program for students in grades 4 to 6, wherein Filipino and English will be introduced gradually as a medium of instruction before these two (2) languages could be used as the primary language of learning and teaching at the secondary level.

According to Hunahunan (2019), MTB-MLE emphasizes the importance of using the learners' mother tongue and other additional languages in the teaching setting when it comes to the primary grades. Using the learners first language in the classroom is based on the premise that doing so will aid in the development of more excellent literacy abilities among students, and this knowledge and skills will eventually be transferable across several languages. MTB-MLE promotes the first-language-first policy in the primary grades, transitioning to various additional languages, mainly Filipino and English, at the intermediate level. Mother-tongue is the language used as a medium of instruction by the teachers where the students' mother tongue or first language is used in the teaching and learning process. Even though it has been in effect for nine years and despite its various contributions to the primary grades, it does affect the intermediate level transition to a different medium of instruction. Hence, aside from the students, one of those affected by these challenges are the teachers from grade 4 classes utilizing English as instruction.

The first 12 local major languages used in MTB-MLE were Bikol, Cebuano, Chabacano, Hiligaynon, Iloko, Kapampangan, Maguindanao, Maranano, Pangasinense, Waray, Tagalog, and Tausug. In 2013, Ybanag, Ivatan, Sambal, Aklanon, Kinaray-a, Yakan, and Surigaonon were added. In total, 20 languages are utilized as a primary subject and as a medium of instruction in two models of MTB-MLE (DepEd, 2013; Alieto, 2018).

The mother tongue of concern in the study is the Kapampangan language. The Kapampangan or Pampangan language is one of the most frequently uttered Philippine languages, with around two million speakers. As a result, it became one of the eight major instructional languages in the MTB-MLE implementation (Pangilinan, 2009; Oda & Visconde, 2021). However, Cruz's (2020) study asserted that the Kapampangan language is more vibrant than Pangilinan's (2009) study, it also affirmed that a shift is inevitable, with the exchange of more favorable attitudes toward Filipino and English. (Pangilinan, 2009; Cruz, 2020; Oda & Vizconde, 2021).

English as a universal language is considered by some to aid in academic, social, and economic success in globalization, which is why English has become a preferred medium of instruction for a larger population (Bernardo, 2008; Tupas, 2015). In addition, as Adams concept of English as a Medium of Instruction (EMI) has gained popularity throughout the world due to the language's value as a medium of communication.

According to (Dearden, 2014), there is a rapid global shift toward utilizing English as a medium of instruction (EMI) for academic subjects like science, mathematics, geography, and medicine. Schools are progressively using EMI. This phenomenon has enormous implications for students' education and policy decisions in non-Anglophone countries. English has become the lingua franca of education (Galloway and Rose, 2015). In many contexts, the students learn the content in different subjects such as math, science, and history through English as a medium of instruction established in providing an international learning experience in some countries where English is not the students' primary language. (Rose & McKinley 2018).

Mathematics is consistently ranked as one of the most important subjects taught to children from the time, they are in kindergarten onwards. Although Mathematics is one of the central focuses in the classroom, national and international tests suggest that several students' mathematical abilities and knowledge are still not satisfied with what is required after completing primary education (UNESCO, 2012). In relation to this, it was discovered that pupils who were educated in Mathematics through the medium of their native language, had a more substantial capacity to comprehend the content that was covered in the classroom. This necessitates an understanding of the mathematical formulas and the mathematical vocabulary, concepts, and ideas (Effiong, 2013; Umar, 2018). According to Bermejo, et.al (2021) Math, due to its complexity and abstract nature, is better taught in the mother tongue than in other languages in many situations. The second language, on the other hand, is used throughout the curriculum as the medium of instruction in other foreign schools through immersion programs. According to Matan 2003, cited by Umar 2018, in order for children to be interested in Mathematics and to make sense of what they are learning, their culture must be incorporated in Mathematics.

(Clegg & Simpson, 2016; Boateng, 2019) "Transition" is the shift from teaching and learning in the mother tongue to EMI which is quite contradictory. In many cases, the change happens prematurely by switching one language to another instead of carefully planning and assisting the transformation process. Despite the significant evidence from the issue, language and its relation to the learning process and outcomes are poorly articulated in more comprehensive literature development. Transitions from mother tongue to English may bring certain benefits to the students in the academic world and possibly can spell success in the future; nevertheless, if this is not well managed, this can lead to fear, tension, or even frustration which can impede learning (Turner, 2007; Steyn, 2017).

Milligan et al. (2016) noted that, in the context of the English Medium of Instruction, it is uncommon for the use of an African language by teachers or students to be explicitly prohibited under MOI education rules following the 'transition' to English. There are countless examples of informal 'code-switching,' especially when explaining new

concepts to learners who are having difficulty understanding in English (Sentanda, 2014).

The majority of the literature reviewed concerned themselves on the difficulties of the students in coping with the transition. The study uncovered the challenges the fourth-grade teachers encountered in transitioning from one medium of instruction (Mother-tongue) to the next (English) and the ways and measures employed by the teachers in overcoming these challenges.

Theoretical Framework

The theoretical underpinning of this study is the interlanguage theory of Larry Selinker, 1972. Islam (2013) mentioned that Selinker coined the word interlanguage to refer to the linguistic phase that second language learners undergo while learning the target language. Interlanguage has since become a central idea in SLA research investigations. As the term suggests, interlanguage theory refers to a language that links the learner's native tongue and the target language they study. However, Al-khresheh (2014) stated that the impact of the first language (L1) learning on the second language (L2) learning had been the focus of discussion in recent times, resulting in the extensive applications of Error Analysis (EA) in the second language (L2) teaching and learning. This error in second language acquisition causes some difficulties for the students as learners as well as for teachers as implementers. As the interlanguage theory implies, the language must transition from the native tongue to the target language. However, if the challenges of the teachers will not be addressed, or taken for granted additional problems may arise which could possibly lead to the difficulty of the students in transitioning to the target language. Since the focus of the study is to uncover the challenges faced by teachers during the transition it could somehow assist the teachers to avoid the occurrence of an error.

Statement of the Problem

The study aimed at exploring the challenges encountered by grade 4 teachers as their students' medium of instruction transition from their mother tongue to English. More precisely, the study sought answers to the following questions:

1. What are the challenges encountered by Grade 4 teachers in transitioning the medium of instruction from mother-tongue to English?
2. How did the teachers adjust or cope with the changes in the medium of instruction?
3. What are the effects of the language shift have on the teaching strategies and pedagogy of grade 4 teachers?

Definition of Terms

The following terms are defined theoretically and operationally to provide the reader with a clearer and better knowledge of how the terms are used in the study.

English. As the universal language, English is widely spoken. In this study, it is being used as a medium of instruction, the target language in the transition. The term "English as a medium of instruction," more usually abbreviated as "EMI," refers to the process of instructing and being instructed in content or academic subjects in settings where English is not the dominant language (Ducker, 2019).

Language 1. It is the first language spoken by the students, and it is their mother tongue, which they speak. The first language is often referred to as L1, is the very first language that learners had to learn to comprehend how language works, particularly for young learners who observe how to acquire and learn other languages in their concrete operational stage (Romero & Manjarres, 2017). In this study, Kapampangan is the first language of the participants.

Language 2. It is the universal language (English). According to Nor & Rashid (2018), it is the study of individuals or groups who are learning a language subsequent to the first language they learned as a child and the process of learning that language. This additional language is known as L2, even though it could be the third, fourth, or so on language being learned. In this study, it is the target language that the students will learn. It is the medium of instruction (English) used in some subjects starting in the fourth grade.

Medium of instruction. It is the terminology that is used during the instructional process. The medium of instruction could be the country's official language or the national language which is used as the language that the teachers use in teaching their lesson (Abuga et.al 2019). In this study, Kapampangan is the medium of instruction for the primary level and English for the intermediate level. Mother-Tongue. It refers to the first language or native language, which the students have utilized as the medium of instruction at the primary level. Mother tongue may refer to a person's cultural language but for other people, it is a language that was taught to them since they were children whether or not it is part of their traditional heritage (Lang-ay & Sannadan 2021). In this study, the Kapampangan language is the students' first language.

MTB-MLE. It refers to "first-language-first" instruction, which begins in the primary grades. In this study, it refers to the mandatory subject for Grades K–3 as part of the requirements for implementing the K–12 program. According to Apolonio (2022), it refers to a program that utilizes the student's mother tongue as a primary mode of instruction in all subject areas from pre-kindergarten through the third grade; nevertheless, Filipino and English will be taught separately.

Pedagogy. It pertains to the teaching method and the strategy of the teachers in delivering the subject. According to Sandri (2020), pedagogy is a broad concept which refers to why and

how a teacher can influence learning methods and strategies of the students. In this study, it is one of the concepts that the study explored concerning the challenges that teachers faced and the strategies they utilized to help the students adapt to the transition between languages used as a medium of instruction.

Transition. It is the process of shifting between two different languages. "Transition" pertains to switching from teaching and learning in the mother tongue to EMI which is contrary (Clegg & Simpson, 2016; Boateng, 2019). In this study, transition refers to the medium of instruction from mother-tongue being used from kindergarten to grade three and, afterwards, English from fourth to sixth grade.

Acronym

DepEd - Department of Education

EA - Error Analysis

EMI - English Medium of Instruction

ICT – Information and Communications Technology

K-3 - Kindergarten - Grade 3

L1 - 1st Language

L2 - 2nd Language

MOI - Medium of Instruction

MTB-MLE - Mother Tongue Based - Multilingual Education

SLA- Second Language Acquisition

Scope and Limitations

The study explored the challenges faced by the teachers who are using English as a medium of instruction in teaching Mathematics for the promotion of learnings of the Grade 4 students. The mother tongue language being utilized by the students is Kapampangan. The study was conducted in selected schools in the Division of Pampanga.

The study's key informants were the selected teachers in the Division of Pampanga for the academic year 2021 to 2022.

METHODS

Research Design

The researchers used an exploratory research design. As stated by (Bhat, 2021), exploratory research is used when a topic needs to be thoroughly understood, especially if it has not been done before. The exploratory research design allowed the researchers to lay a solid foundation for exploring their ideas, selecting the appropriate method, and identifying genuinely relevant variables.

Sampling Technique

The study made use of purposive sampling in selecting the key informants. The following criteria were set by the researchers in choosing the key informants for the study. First, the key informants are handling grade 4 students. Second, the mother-tongue of the students is Kapampangan. Third, the teachers are teaching from the selected schools in the Division of Pampanga. Lastly, the teachers are handling Mathematics subject.

Participants of the Study

The key informants of the study were the eleven (11) Grade 4 teachers from the selected schools in the Division of Pampanga. The eleven (11) key informants were chosen according to the set criteria. Saturation of responses was reached from the responses of the eleven (11) key informants. As stated by (Francis et al., 2010; Hennink & Kaiser, 2021), the more extensive use of saturation focuses on sample size rather than data sufficiency for theory development as in theoretical saturation.

Research Instrument

The semi-structured questionnaire was used in exploring the challenges faced by Grade 4 teachers in transitioning from mother tongue to English. According to Stuckey (2013), a semi-structured interview is an interview guide that consists of predetermined and unplanned questions that guide the conversation with the participants in the desired directions.

The semi-structured questionnaire is more potent than other types of interviews for qualitative research, it allows researchers to acquire in-depth information and evidence from the participants while considering the focus of the study (Rasak, et. al, 2022)

The instrument was subjected to validation by experts in the field to be more reliable and academically acceptable. The suggestions and recommendations of the validators have been included in the final revision of the questionnaire.

Ethical Considerations

Letters were created asking for the approval of the Dean, the research adviser, and the research coordinator before the initialization of the study. The key informants were asked to fill-out a consent form as a sign that they agree to participate in the study. The responses of the key informants were treated with utmost confidentiality and anonymity. The Philippine Data Privacy Act (DPA) of 2012 was followed religiously to secure citizens' personal information from being accessed without their permission (Ching et.al 2018).

Data Analysis

Thematic analysis was applied in the study since the researchers wanted to explore the challenges encountered by Grade 4 teachers in the transition from their mother-tongue (Kapampangan) to English. A thematic analysis' goal is to uncover themes or interesting or essential patterns in data and then use those themes to address the topic or make a statement about a problem. An excellent thematic analysis does more than summarize material; it also analyzes and interprets it (Clarke & Braun, 2013; Maguire & Delahunt, 2017).

According to Braun & Clarke (2006), as cited by Maguire & Delahunt (2017), there are six phases to follow in conducting a study using thematic analysis. The first step that the researchers have considered is becoming familiarized with the data. The second step includes the generation of the initial code. The coding process involves highlighting specific parts of the transcripts and developing short labels, also known as "codes," to describe the information contained within those parts. The third phase began with the coding and collating the data, and a list of the various codes found throughout the data set has been created. The fourth step follows after the generation and refinement of themes. In the fifth step, the determination of the aspect of the data of each theme that captured the interest of the researchers. Finally, the establishment of all the themes for the final analysis was determined. The conclusion was included which explained the main points and demonstrated how the study addressed the research questions.

Findings and Discussion

This chapter deals with the presentation, analysis, and discussion of the data collected in the study with the purpose of exploring the challenges encountered by grade 4 teachers as their students' medium of instruction transitions from their mother tongue to English.

The discussion below shows the themes from the coded findings acquired from the transcripts of eleven (11) elementary school teachers in Pampanga who teach Grade 4 students whose mother tongue is Kapampangan. The study explored the challenges experienced by fourth-grade Mathematics teachers during the shift from their mother-tongue to English as the medium of instruction.

The data were analyzed using Braun and Clarke's (2006) thematic analysis, as cited by Maguire and Delahunt (2017). There were three major themes that emerged. These themes revealed the challenges of the Grade 4 teachers in transitioning the medium of instruction from Mother-tongue to English, the adjustments made by Grade 4 teachers to cope with changes in the medium of instruction, and the effects of the language shift on the teaching strategies and pedagogies of Grade 4 teachers.

1. Challenges of Grade 4 teachers in transitioning the medium of instruction from Mother tongue to English.

One way of ensuring the effectiveness of teaching is the consideration of the language used by teachers as a medium of instruction. In some places, it has been challenging to establish which language or languages to utilize as the medium of instruction in schools due to the wide variety of languages used, particularly in urban areas (Walker & Mackenzie, 2016; Areaya & Tefera, 2020). The rapid shift of language creates a barrier, which leads to confusion and difficulties with the medium of instruction (Ebad, 2014). In the context of this theme, the participants were asked about the challenges they faced in the shift of the medium of instruction from mother-tongue to English. Based on the collected data, two sub-themes were subsequently determined. The elementary teachers' recognition of the difficulty in translating mathematical terminologies and the difficulty of making the discussion in mathematics simple and easy to understand for the learners were the challenges in the transition of the medium of instruction.

1.1 Difficulty in translating Mathematical terminologies.

The key informants stated their concerns on the difficulty in translating terms. According to the findings, translation of Mathematical terminologies is challenging due to the prevalence of mother-tongue from kindergarten to Grade 3, which makes learning Mathematics using the English language difficult. Students may understand and apply basic mathematical procedures when delivered in symbolic form, but not when delivered in words (Mayer & Hegarty, 2012). As stated by Perez & Alieto (2018), the failure of students is not due to a lack of mathematical competency or an inability to perform operations or solve problems, but rather to the language of instruction is a barrier that proved too difficult for many learners. The findings imply that some students have difficulty in understanding mathematical terms unless these terms are translated into their mother tongue. Teachers face challenges when translating some terminologies due to unfamiliarity with mathematical terms that were presented in their mother tongue and then used in English.

"I encountered several problems in the translation of mathematical concepts of language in the mother tongue, especially when they entered Grade 4." - TC2

"There is a difficulty in translation, whenever the pupils don't know the term, we need to translate it to MTB." - TC3

"Difficulty of translating Mathematical terms from mother tongue to English." - TC4

"Difficulty in translation." - TC5

"They can't understand the math lessons unless they are translated in MTB." - TC7

“Difficulty translating some Mathematical terms which were presented in the mother tongue and then to be used in English.” - TC10

1.2 The difficulty of the teachers to make the discussion in Mathematics simple and easy to understand for the learners.

Mathematics is a very technical subject; however, students may quickly grasp mathematical concepts if they are presented in a simple, easy, and enjoyable way. These were the very statements mentioned by one of the key informants. Based on the findings, teachers stated having challenges simplifying mathematical concepts for students to understand them easily. As stated by Brown et al., 2008; M.K. & Gafoor, 2017, the impression that mathematics is difficult held by the students is a significant element that contributes to the student's reason to be unmotivated in learning mathematics, particularly if the language in which Mathematics is taught is one that the students have difficulty in understanding.

“Making the pupils understand the lesson using English as a medium of instruction. Because they were accustomed to using their mother tongue as a medium of instruction in their primary years.” - TC2

“How to make the discussion simple and easy to understand.” - TC5

“The learners' poor comprehension in English.” - TC6

“Learners have limited English vocabulary which also results in poor reading comprehension, and learners do not understand simple instruction/word problems in English. The prevalence of mother tongue from kindergarten to Grade 3 makes it difficult to learn mathematics in English.” - TC7

“Many pupils do not understand what their teacher is saying, and therefore they cannot follow the lesson.” - TC9

“The most challenging part during the transition is how to make the lesson easier for them to understand” - TC10

2. Adjustments made by the Grade 4 teachers to cope with changes in the medium of instruction.

The teachers' role in the instruction process is very crucial, it can either make or break the acquisition of learnings of the students. Teachers' expertise or mastery of the subject being taught may contribute to the development of learning but its inadequacy may prove otherwise. Teachers experienced anxiety in teaching Mathematics to grade 4 students due to limited resources. In this theme, the key informants were asked about the preparations as well as the measures they have undertaken to cope with the shift in the medium of instruction. They also mentioned some methods and approaches they used to handle the challenges they encountered. In order to reduce their math anxiety, teachers have utilized a variety of reform-based strategies to present and demonstrate mathematical concepts that benefit their mathematics teaching efficacy (Gresham and Burleigh, 2019;

Baloyi-Mothibell et al., 2021). In this theme, four sub-themes were identified based on the data collected. Some of the adjustments made by teachers based on the findings include the creation of instructional materials suited to the learners' level, the adoption and utilization of different strategies, the translation of lessons from Mother-tongue to English, and the attendance to trainings.

2.1 Creation of instructional materials suited to the level of the learners.

The teachers made adjustments by creating instructional materials suitable to the level of the learners. Teachers also considered the learning styles and preferences of the students in the creation of learning materials. Based on the key informants, most students are visual and experiential learners, meaning they learn best through the use of pictures or physical objects to manipulate. These materials are tangible or intangible aids presented visually or audio-visually, which assist teachers in teaching (Chemwei & Tuimur, 2015).

“Improvisation of instructional materials,” - TC3

“I have provided reading materials to the learners that are suited to their level of comprehension” - TC6

“I used instructional materials in order for them [students] to further understand.” - TC8

“I used authentic resources like photos and video clips that can help students grasp content/concepts.” - TC9

“...improvisation of instructional materials written in the mother tongue.” - TC11

2.2 Adoption and Utilization of Different Strategies.

The key informants utilized different strategies as a measure undertaken to cope with the shift in the medium of instructions. Based on the findings, teachers employed various strategies to meet the needs of every student in learning the lessons. Students learn best when the strategy used by the teacher meets their abilities. Still, when the teacher's strategy does not meet the students' ability, it may lead to confusion in learning the lesson. In planning differentiated instruction, the teachers must consider the diversity of students' characteristics while planning and structuring the lessons and units (Goddard et al., 2010; Awofala & Lawani, 2020).

“Different strategies according to stages of language acquisition like listening comprehension by using read-aloud/s, visual, and point to pictures.” - TC1

“I used differentiated strategies in order to cope with the shift.” - TC3

“... implemented diverse approaches.” - TC4

“I use different strategies to meet the needs of the learners” - TC11

2.3 Translation of lessons from Mother-tongue to English.

The teachers translated the lessons in Mathematics from Mother-tongue to English as an approach to handle the challenges they have encountered in teaching the students. According to Abrea et al., (2021), teachers frequently employ translation to help pupils transition from their native language (L1) to English (L2). Teachers find Science and Math difficult to teach due to the students' limited English vocabulary, which causes difficulty with spelling, reading comprehension, and word problems. The findings imply that there is a need for teachers to translate the mathematical concepts from the students' mother tongue into English so that their students can link their existing knowledge to Mathematical concepts they have learned using their mother tongue.

"...translating MTB to English." - TC3

"...transition of the medium of instruction by translating from MTB to English." - TC4

"The use of translating." -TC5

"...giving a translation from MTB to English." - TC7

"Translating the instructional materials/self-learning kits from MTB to English."

-TC11

2.4 Attendance to trainings.

The key informants mentioned that they attended trainings to prepare themselves for the adjustments that they will have to face with the transition phase. According to Boudersa (2016), teachers' training and expertise development are widely regarded as essential for improving their content knowledge, skills, and practices to fulfill the current high educational standards. The teachers' mathematical content knowledge and their ability to share their expertise with other teachers determined how actively the teachers participated in the training (Parrish et al., 2020). The training provided the teachers with additional knowledge on methods and strategies that they may utilize to make their instruction in Mathematics using English more effective for all their students. It was concluded that participating in a professional training program benefits teachers' mathematical knowledge, which may then apply in the classroom (Jacob et al., 2017).

"To adjust to the transition phase I attend different training sessions to gain knowledge and techniques in teaching." - TC4

"The teacher should master the curriculum first, [they] must attend training intended for this ..." -TC5

"I attended various training sessions to gain knowledge on the techniques in teaching into transition phase."- TC7

3. Effects of the language shift on the teaching strategies and pedagogies of Grade 4 teachers

Language shift in the medium of instruction has a profound impact on the teaching and learning process. Mathematics is one of the subjects that has been adversely affected by the sudden shift from the mother tongue to English as the medium of instruction. The shift has caused teachers to modify some teaching approaches and pedagogies. In this theme, the key informants were asked about the effects of the language shift in their teaching strategies/pedagogies in teaching Mathematics to Grade 4 students. They also addressed the modifications they have used to improve their strategies/pedagogies in teaching. In this major theme, there were three sub-themes. According to the findings, some of the effects of the language shift on the teaching strategies and pedagogies of teachers are the modification of strategies and pedagogies, the creation and utilization of improvised instructional materials, and the utilization of a multilingual approach.

3.1 Modifications of strategies and pedagogies

Based on the provided information by the informants, the effect of the language shift was on the modification of their strategies and pedagogies in teaching Grade 4 students. Some of the teachers' teaching strategies and pedagogies needed to be modified like the employment of integrated computer technology (ICT) to meet the needs of their students and to deliver their lessons well due to the sudden change of instruction. As cited in the study of Campilla & Castañaga (2021), teachers develop their methods in teaching mathematics to their students. According to Hwa (2018), the increased prevalence of technological applications in education, particularly the use of interactive multimedia, has fostered the creation of innovative teaching and learning methodologies. The use of information and communications technologies (ICTs) in learning and teaching is gaining in popularity, and as a result, the use of multimedia technology and digital games has evolved as an alternate method of instruction. According to research, the effective approaches are the use of games, manipulative, real-life application, differentiated instruction, and incorporating technology. The teachers can begin implementing the best practices in their classrooms once they become aware of them. That will help address the problem of poor mathematics motivation and performance among students (Moore, 2012). The key informants of this study revealed that they modified the different strategies and pedagogy they have used in teaching the learners, such as translation, paraphrasing, collaborative learning, inquiry-based, integrating ICT, and unlocking different words for the students to understand the math lesson better.

"I have used different strategies and approaches like grammar paraphrasing, and groupings." - TC1

"As I introduced our lessons in English, I translate it whenever they are not familiar with the words or phrases. I also give them activities like unlocking difficulties." - TC3

"I have used different strategies and methods like collaborative learning, inquiry-based, and integrating ICT." - TC8

"Used the grammar transition approach and reading approach." - TC9

"I used reading approach."- TC10

3.2 Creation and utilization of improvised instructional materials

The teachers created and utilized improvised instructional materials to convey their lessons well to their students due to the shift of the medium of instruction. The informants shared that they created mother-tongue-based instructional materials to support students' learning of the new mathematical concept in English. Iji et al. (2014) stated that utilizing improvised materials in mathematics instruction is a strategy that promotes the proper introduction of new skills, builds knowledge, and demonstrates the ideal way to accomplish activities. It is revealed that the use of instructional materials had a considerable impact on the students' mathematical learning achievements. It is recommended among teachers that they should employ excellent cooperative teaching strategies and instructional materials used in teaching mathematics in schools to improve student learning achievement in mathematics (Saleh et al., 2022). The discussion of the lessons in Mathematics using English as the medium of instruction is made more authentic through improvised instructional resources. Based on the information provided by the study's informants, one of the effects of the language shift was the creation and utilization of instructional materials in teaching Grade 4 students. According to the findings, it states that to be able to discuss and understand the topic, the teachers must use instructional materials such as visual images and real-life scenarios to engage their students and discuss the different math concepts.

"...visuals/images to make learning connected with real-life scenarios." - TC1

"I have used instructional design models to engage my students." - TC2

"I improvised the instructional materials and I used teacher-made Ims." - TC3

"I have used visuals and images in engaging my students in the discussion."- TC4

"I have used improvised mother-tongue-based instructional materials to facilitate the learning of new concepts in teaching Mathematics in English." - TC5

3.3 Utilization of Multilingual Approach

Multilingual approach is the use of different languages by the teachers to translate the discussion for the students to enhance learning. According to Bairy (2019), language is a unifying medium of communication, and proficiency in multiple languages definitely aids subject learning. The study demonstrates that incorporating different

languages into a teaching process was effective, as evidenced by words or phrases such as "benefit the learners," "enjoyment," and "better understanding" once translation occurred (Omidire & Ayob, 2022). According to the informants, they have to use the multilingual approach to support the learning of the students in which they do translation; sometimes, when the lesson is written in English, and if it is not understood by the students, teachers have to translate it into Filipino and then Kapampangan for the students to have a better understanding of Math lessons.

"The use of multilingual language and let them practice the English language little by little until such time that they were comfortable in using it." - TC5

"Multilingual Teaching - translate MTB lessons to Filipino then Kapampangan" - TC9

"Use of a multilingual teaching approach." - TC10

"Using a multi-lingual approach in presenting/discussing the lessons to the learners for better understanding." - TC11

Synthesis of Interpretation

Mother-tongue is the language of instruction from Kindergarten to Grade 3. However, in Grade 4, the English language will be used as the medium of instruction, particularly in Mathematics. The students may find it difficult to adjust to the new language of instruction, which may lead to their inability to understand the lessons being presented to them. Acquisition of the new language of instruction or the second language must be facilitated by the teachers. However, the facilitation might also be quite a challenge for the teacher. This study explored the challenges encountered by the teacher in the process of transition. The study revealed the challenges faced by Grade 4 teachers in transitioning the medium of instruction from mother-tongue to English in teaching Mathematics, adjustments, preparations, and measures made by the teachers to cope with the changes in the medium of instruction and the effects of the language shift in their teaching strategies or pedagogies. According to the findings of the study, the Grade 4 teachers have encountered difficulties in translating Mathematical terminologies and making the discussion simple and easy to understand by the students. Based on the obtained answers from the key informants, these challenges are due to the prevalence of mother-tongue from kindergarten to Grade 3. Since the students struggle to understand the Mathematical terminologies when they are delivered in the English language, the teachers have come to the point of translating the words into the students' mother-tongue first and then into English. As stated by the key informants, one of the most challenging aspects during the transition is that some Mathematical terminologies are quite unfamiliar to the teachers as well and as a result difficulty in bridging the Math lessons which is presented in the students' mother-tongue from kindergarten to Grade three, and then in English beginning in Grade four proved to be a herculean task for the teachers. Teachers also made mention that they had difficulty

making the Mathematics concepts or discussion simple and easy for the learners to understand since Mathematics is considered a technical subject.

Moreover, the challenges encountered by the Grade 4 teachers have led them to adjust to the changes in the medium of instruction. The adjustments they have undertaken to cope with the changes in the medium of instruction are the following: the creation of instructional materials tailored to the level of the learners, the adoption, and utilization of different strategies, the translation of lessons from mother-tongue to English, and the attendance to trainings. In the creation of instructional materials suited to the level of the learners, the teachers revealed that they considered the students' learning styles to engage them in the discussion and to maximize the use of instructional materials. Furthermore, according to the key informants, the need to translate the lessons in Mathematics to Kapampangan may help in bridging the students' existing knowledge of Math concepts to the new knowledge by utilizing English as the medium of instruction. The key informants stated that they have participated in training to learn new teaching strategies and develop instructional materials to overcome the difficulties they encountered in teaching the learners. The adjustments made by the Grade 4 teachers have impacted teaching strategies and pedagogies. According to the findings of the study, there are three effects of the transition on the medium of instruction. These are the modification of strategies and pedagogies, the creation and utilization of improvised instructional materials, and the utilization of the multilingual approach. In the modification of strategies and pedagogies, the teachers revealed that they made some changes and tried various strategies in teaching their students. The teachers also used and created improvised instructional materials to engage their students in the discussion. According to the key informants, they translated some Mathematical concepts, which led them to the utilization of multilingual approach to make the students understand the lesson better. In this manner, the students have learned the target language, which is English, by using a variety of languages, such as Kapampangan and Filipino. Teachers have stated that they translated Mathematical terms into Kapampangan first, then into Filipino, and finally into English. This is done to ensure that the discussion is clear and that students comprehend the concepts quickly.

The research was based on the interlanguage theory, which Larry Selinker developed. This theory suggests that there is a language transition that learners go through before they can acquire a second language. It refers to a language that acts as a bridge between the learner's first language and the target language they study. According to the research conducted by Al-khreshah (2014), it has been a controversy in recent times, which has led to the widespread use of error analysis in the instruction and learning of second languages. As a consequence of this error in acquiring the second language, both the students, in their capacities as learners, and

the teachers, in their capacities as implementers, experience some degree of challenge. It has been shown that Error Analysis effectively provides feedback to both teachers regarding their pedagogical practices, including their materials, methodologies, and approaches. In addition, EA allows teachers to re-evaluate the usefulness of course outlines and the amount of time necessary to teach the various components of a course (Mahmood & Ali Murad, 2018). This shows that using the target language in the instruction can be challenging since errors can occur if the target language is not supported carefully by the bridging language. According to the study's findings, teachers used the students' mother language, which in this case was Kapampangan, and a "bridging language," Filipino, that connected the students' native language to the second language, English. As stated by Lartec et al. (2014), the application of multilingual teaching is when teachers employ different languages during the period of a lesson to satisfy the needs of students who are unable to communicate using a specific language and include them in the instruction of the lesson.

Conclusions

The study explored the challenges faced by Grade 4 teachers as their students' medium of instruction transitioned from their mother-tongue to English. The findings of the study drew the following conclusions.

The selected Grade 4 teachers in the Division of Pampanga encountered challenges in teaching Mathematics due to the shift in the medium of instruction from mother-tongue to English. The challenges encountered by the teachers are the difficulty of translating Mathematical terminologies and the determination of how to make their discussion in Mathematics simple and easy to understand by the students.

The Mathematics Teachers for the fourth grade have undertaken some preparations and adopted some measures to manage the shift in the medium of instruction. One of these entails the development of instructional materials that are tailored to the level and skills of each student. Another one is the employment of various strategies to meet the needs of each student, as well as the translation of lessons in mathematics from the student's mother-tongue to English to provide students with appropriate bridging lessons. Furthermore, the teachers participated in professional development programs to enhance their skills and prepare themselves for the sudden transition in the medium of instruction.

The challenges impacted the teaching strategies and pedagogies used by Grade 4 teachers. It resulted in the modification of strategies and pedagogies of teachers, such as; the creation and improvisation of instructional materials suited for the student's level and utilization of multilingual approach, which is the most effective method/strategy to help the students understand the math concepts better. The study

shows that it is possible to successfully establish connections between the student's prior knowledge, which they have acquired from having their mother-tongue used as the medium of instruction, and the new ideas in mathematics using English as a medium of instruction.

Recommendations

In light of the findings and conclusions of the study, the following recommendations are hereby offered:

1. The Department of Education (DepEd) may provide instructional materials to aid the effective delivery of lessons to the students. Instructional materials are essential components of the teaching process.
2. Since Mathematics is a challenging subject teachers may consider innovating and exploring new ways to make the subject fun and enjoyable for the students. The teachers may attend trainings to improve their teaching skills, and collaborate with other teachers who are experts in the field of Mathematics.
3. As the language of instruction shifts from mother-tongue to English, some students do not know how to understand and speak English. To learn the lessons, the teachers may use a multi-lingual approach to establish the connection of what they have learned in the mother-tongue to English. Using this approach may help the learners understand better the lessons presented in English.
4. This study may serve as a tool for future researchers who want to conduct a more in-depth study on transitioning from mother-tongue to English.

REFERENCES

[1] Abrea, A. C., Ortua, E. L., & Robles, R. L. (2021, June 19). 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 article information. ResearchGate. <https://www.researchgate.net/publication/352538866>

[2] Abuga, R. S. C., Brillantes, J. A., Dialino, C. P., Lucañas, R. L. M., Molina, H. M. S., & Tandoc, D. A. (2019). Effectiveness in Using English as a Medium of Instruction among Grade 12 Students at Bestlink College of the Philippines. *Ascendens Asia Singapore – Bestlink College of the Philippines Journal of Multidisciplinary Research*, 1(1). Retrieved from <https://ojs.aaresearchindex.com/index.php/aasgbcjpmra/article/view/1222>

[3] Adams, M. (2020, June 3). (PDF) English as a medium of instruction. ResearchGate. https://www.researchgate.net/publication/344477605_English_as_a_medium_of_instruction

[4] Al-khresheh, M. H. (2014). A review study of Interlanguage theory | Hamad al-khresheh | *International Journal of applied linguistics and English literature*. Resolve a DOI Name. <https://dx.doi.org/10.7575/aiac.ijalel.v.4n.3p.123>

[5] Apolonio, L. A. (2022). Mother tongue-based multilingual education (mtb-mle) in the Philippines: Its implications to language learning | Apolonio | *Erudio Journal of educational innovation*. <https://erudio.ub.ac.id/index.php/erudio/article/view/398>

[6] Areaya, S., & Tefera, D. (2020, June). Stakeholders' perceptions related to transition from mother tongue to English medium of instruction. *ETHIOPIAN JOURNALS ONLINE*. <http://213.55.95.79/index.php/EJE/article/view/1642>

[7] Awofala, A.O.A., & Lawani, A. O. (2020). Increasing mathematics achievement of senior secondary school students through differentiated instruction | O. A. Awofala | *Journal of educational sciences*. Digital Object Identifier System. <https://doi.org/10.31258/jes.4.1.p.1-19>

[8] Bairy, S. (2019, September 4). Multilingual approach to mathematics education. Digital Object Identifier System. <https://doi.org/10.15415/iee.2019.72008>

[9] Baloyi-Mothibell, S. F., Ugwuanyi, C. S., & Okeke, C. I. (2021). Exploring grade R teachers' mathematics curriculum practices and strategies for improvement: Implications for physics teaching | *Cypriot Journal of educational sciences*. Digital Object Identifier System. <https://doi.org/10.18844/cjes.v16i1.5523>

[10] Bermejo, V., Pilar, E., & Morales, I. (2021, April 13). How the language of instruction influences mathematical thinking development in the first years of bilingual schoolers. *Frontiers*. <https://doi.org/10.3389/fpsyg.2021.533141>

[11] Boudersa, N. (2016, October 17). (PDF) The importance of teachers' training programs and professional development in the Algerian educational context: Toward informed and effective teaching practices. ResearchGate. <https://www.researchgate.net/publication/309430087>

[12] Bhat, A. (2021, March 23). Exploratory research: Definition, types and methodologies. QuestionPro. <https://www.questionpro.com/blog/exploratory-research/>

[13] Boateng, P. (2019, February 26). Managing transitions from mother tongue instruction to English as the medium instruction. GOV.UK. <https://www.gov.uk/research-for-development-outputs/managing-transitions-from-mother-tongue-instruction-to-english-as-the-medium-instruction>

[14] Campilla, J., & Castañaga, V. A. (2021). View of teaching strategies utilized by mathematics teachers in the 21st-Century. *International Journals: Publishing Research Papers in all Fields*. <https://www.gssrr.org/index.php/JournalOfBasicAndApplied/article/view/12854/6047>

[15] Caulfield, J. (2020, August 14). How to do thematic analysis | A step-by-step guide & examples. Scribbr. <https://www.scribbr.com/methodology/thematic->

analysis/#:~:text=Thematic%20analysis%20is%20a%20met
hod,meaning%20that%20come%20up%20repeatedly

- [16] Chemwei, B., & Tuimur, H. (2015). Availability and use of instructional materials in the teaching of conflict and conflict resolution in primary schools in nandi north district, Kenya. Digital Object Identifier System. <https://doi.org/10.18488/journal.61/2015.3.6./61.6.224.234>
- [17] Ching, M. D., Fabito, B. S., & Celis, N. J. (2018, October). Data Privacy Act of 2012: A Case Study Approach to Philippine Government Agencies Compliance. Home: Ingenta Connect. <https://doi.org/10.1166/asl.2018.12404>
- [18] Ducker, N. (2019, December 29). English as a Medium of Instruction Teacher Training and Professional Development Current, Critical Issues. Wiley Online Library. <https://doi.org/10.1002/9781118784235.eelt0968>
- [19] Ebad, R. (2014). The role and impact of English as a language and a medium of instruction in Saudi higher education institutions: Students-instructors perspective | Ryhan | Studies in English language teaching. Digital Object Identifier System. <https://doi.org/10.22158/selt.v2n2p140>
- [20] Hennink & Kaiser (2021). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. <https://doi.org/10.1016/j.socscimed.2021.114523>
- [21] Hunahunan, L. C. (2019, June). Coping With MTB-MLE Challenges: Perspectives of Primary Grade Teachers in a Central School. International Journal of Research. <https://www.researchgate.net/publication/353902729>
- [22] Hwa, S. P. (2018). Pedagogical Change in Mathematics Learning: Harnessing the Power of Digital Game-Based Learning. Journal of Educational Technology & Society, 21(4), 259–276. <http://www.jstor.org/stable/26511553>
- [23] Iji, C. O., Ogbole, P. O., & Uka, N. K. (2014, August). Effect of improvised instructional materials on students' achievement in Geometry at the Upper Basic Education Level in Makurdi Metropolis, Benue State, Nigeria. Academic Journals. DOI: 10.5897/ERR2014.1778
- [24] Islam M. (2013) First Language Acquisition Theories and Transition to SLA ISSN: 2186-4691 – The Asian Conference on Language Learning 2013 – Official Conference Proceedings <https://doi.org/10.22492/2186-4691.20130289>
- [25] Jacob, R., Hill, H., & Corey, D. (2017). The Impact of a Professional Development Program on Teachers' Mathematical Knowledge for Teaching, Instruction, and Student Achievement. Journal of Research on Educational Effectiveness, 10(2), 379–407. <https://doi.org/10.1080/19345747.2016.1273411>
- [26] Krishna Kumar Khatri. (2019, November). Teachers' attitudes towards English as medium of instruction. Digital Object Identifier System. <https://doi.org/10.3126/jong.v2i0.26602>
- [27] Lang-ay, P. D., & Sannadan, J. M. (2021, February). Mother tongue based language education in Philippines and Cambodia: A comparative study. English Literature Journal | Social Sciences Journal | IJELS. <https://dx.doi.org/10.22161/ijels.61.44>

- [28] Lajara, Abayan et. al. (2018). (PDF) Conversations with communication internship supervisors: Interns' readiness to the world of work. ResearchGate. <https://www.researchgate.net/publication/359362427>
- [29] Lartec, J. K., Belisario A. M., Bendanillo, J. P., Binas-o, H. K., Bucang, N. O., & Cammagay, J. L. W. (2014). Strategies and Problems Encountered by Teachers in Implementing Mother Tongue – Based Instruction in a Multilingual Classroom. IAFOR Journal of Language Learning. <https://doi.org/10.22492/ijll.1.1.04>
- [30] Maguire, M., & Delahunt, B. (2017, October). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. All Ireland Journal of Higher Education. <https://ojs.aishe.org/index.php/aishe-j/article/view/335>
- [31] Mahmood, A. H., & Ali Murad, I. M. (2018, September). Approaching the language of the second language learner: Interlanguage and the models before | Mahmood | English language teaching | CCSE. <http://doi.org/10.5539/elt.v11n10p95>
- [32] Malone, S. (2019, May 17). Mtb mle resource kit - Including the excluded: Promoting multilingual education (Available in Russian, Chinese and English versions). UNESCO Bangkok. <https://unesdoc.unesco.org/ark:/48223/pf0000246278>
- [33] Mayer, R. E., & Hegarty, M. (2012). The process of understanding mathematical problems | Richard E. Mayer., Taylor & Francis. <https://www.taylorfrancis.com/chapters/edit/10.4324/9780203053270-9>
- [34] Moore, N. D. (2012). Alternative strategies for teaching mathematics. Handle Proxy. <https://hdl.handle.net/20.500.12648/5262>
- [35] M. K., S., & Gafoor, K. A. (2017). Linguistics Challenges and Its Influence on Perceived Difficulty in Mathematics Learning of Elementary School Students of Kerala. ResearchGate | Find and share research. <https://www.researchgate.net/publication/316018077>
- [36] Nor, N. M., & Rashid, R. A. (2018). A review of theoretical perspectives on language learning and acquisition. ScienceDirect.com | Science, health and medical journals, full text articles and books. <https://doi.org/10.1016/j.kjss.2017.12.012>
- [37] Omidire, M. F., & Ayob, S. (2022, January 1). The utilisation of translanguaging for learning and teaching in multilingual primary classrooms. De Gruyter. <https://doi.org/10.1515/multi-2020-0072>
- [38] Parrish, C. W., Byrd, K. O., Johnson Dasinger, T. M., & Green, A. M. (2020, September 28). Middle grades mathematics teachers' mixed perceptions of content-focused professional development. Taylor & Francis. <https://doi.org/10.1080/19404476.2020.1814626>
- [39] Perez, A., & Alieto, E. (2018, December 1). Change of "Tongue" from English to a local language: A correlation of mother tongue proficiency and mathematics achievement.

ResearchGate.<https://www.researchgate.net/publication/330440840>

[40] Rasak, Alhabsyi, Syam, (2022). Semi-structured interview: A methodological reflection on the development of a qualitative research instrument in educational studies. Welcome to UIN Datokarama Palu Repository - Repository Universitas Islam Negeri Datokarama Palu. DOI:10.9790/7388-1201052229

[41] Republic Act No. 10533. (2013, May 15). Official Gazette of the Republic of the Philippines. <https://www.officialgazette.gov.ph/2013/05/15/republic-act-no-10533>

[42] Romero, Y., & Manjarres, M. J. (2017, June). How does the first language have an influence on language learning? A case study in an English ESL classroom | Romero | English language teaching | CCSE. CCSE. <http://doi.org/10.5539/elt.v10n7p123>

[43] Sandri, O. (2020, January 6). What do we mean by 'pedagogy' in sustainability education? Taylor & Francis. <https://doi.org/10.1080/13562517.2019.1699528>

[44] Saleh, M., Gambo, M. H., & Isah, A. S. (2022). Effect of Cooperative Teaching Strategy and Instructional Materials Utilization on Mathematics Learning Achievement of Senior Secondary School Students in Fika Local Government Area, Yobe State, Nigeria. ResearchGate | Find and share research. <https://doi.org/10.29329/ijiape.2022.437.3>

[45] Setati, M., & Planas, N. (2012). Mathematics education across two language contexts. SpringerLink. https://doi.org/10.1007/978-94-6091-808-7_8

[46] Steyn, G. (2017, August). The transition of Grade 4 learners to English as medium of instruction. UPSpace Home. https://repository.up.ac.za/bitstream/handle/2263/65469/Steyn_Transition_2017.pdf?sequence=1

[47] Stuckey, H. (2013). Three types of Interviews: Qualitative research methods in social health. Journal of Social Health and Diabetes, 01(02), 058-059. <https://doi.org/10.4103/2321-0656.115294>

[48] Tonio, J., & Ella, J. R. (2019, March). Pre-service Teachers' Attitudes toward the Use of Mother Tongue as Medium of Instruction. ResearchGate | Find and share research. <https://www.researchgate.net/publication/332342838>

[49] Umar, F. A. (2018, January 1). Teacher factors influencing use of mother tongue in teaching of mathematics in lower primary schools in Yola south local government. Academia.edu - Share research. <https://www.academia.edu/71027573>

[50] Yadav, M. K. (2014, December). Role of mother tongue in second language learning. Academia.edu - Share research. https://www.academia.edu/38179634/Role_of_Mother_Tongue_in_Second_Language_Learning?auto=citations&from=cover_page