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THE INFLUENCE OF LANGUAGE OF INSTRUCTION ON MATHEMATICS PERFORMANCE IN SECONDARY SCHOOLS IN MBALE CITY, EASTERN UGANDA

BY

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UNDER SUPERVISION

OF

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A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS IN PARTIAL FULFILLMENT FOR THE REQUIREMENT OF THE AWARD OF BACHELOR'S DEGREE OF SCIENCE EDUCATION AT BUSITEMA UNIVERSITY

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1.1 DECLARATION

I**, MUNGOMA ABDU**, hereby declare that this research is my own work and to the best of my knowledge, it has never been submitted to any university or higher institution of learning for a professional award. Where such has been the case proper citation has been made.

APPROVAL

This research work has been submitted for examination and has been approved by the supervisor.

MS. NABIRYE TOPILISTA

1.2 DEDICATION

I dedicate this work to my family who have supported me throughout my studies headed by my father Mr. Mafabi Ismail Nalizo and my mother Mrs. Kainza Shamimu plus all my siblings. Their encouragement and prayers have brought me this far. I also dedicate this work to all mathematics teachers who struggle daily to help learners understand mathematics despite language challenges.

1.3 ACKNOWLEDGEMENT

I thank my supervisor, **Ms. Nabirye Topilista,** for her guidance and support throughout this research. Her advice helped me shape this work into its final form.

I also thank the headteachers and mathematics teachers of Bukonde Secondary School, Lwasso Seed Secondary School, Nakaloke Secondary School, Mount Masaba High School, Bugisu High School, and Oakwood High School for allowing me to collect data from their schools. Without their cooperation, this study would not have been possible.

I also thank my fellow teacher trainees for the everlasting support throughout my course. Among them are: Kijejere Mubaraka, Mbusa Edson, Kanwagi Charles, Atelu Benard, to mention but a few.

I am grateful to all the learners who took time to fill the questionnaires and share their honest experiences. I also thank the 12 teachers who agreed to be interviewed.

Lastly, I thank my fellow students who encouraged me during this research journey.

May Allah bless you all.

1.4 ABSTRACT

This study investigates the influence of the language of instruction on learners' mathematics performance in secondary schools within Mbale City, Eastern Uganda. The research was guided by three primary objectives: assessing the impact of language proficiency on the understanding of mathematical concepts, identifying the challenges teachers encounter when teaching mathematics in English, and examining the strategies teachers employ to enhance learners' comprehension through language support.

Employing a descriptive cross-sectional research design with a mixed-methods approach, the study collected data from 240 learners via questionnaires and 12 mathematics teachers through interviews across six secondary schools (three government-aided and three private). Quantitative data were analysed using frequencies and percentages, while qualitative data from interviews were analysed thematically.

The findings indicate a significant disparity in learners' understanding of mathematics when taught in English between government and private schools. Specifically, only 18% of learners in government schools understood mathematics well or very well when taught in English, while 82% did not. In contrast, 87% of learners in private schools understood mathematics well or very well, with only 13% reporting otherwise. Furthermore, 83% of learners in government schools preferred using the local language or a bilingual approach for mathematics, compared to 17% who preferred English only. For private school learners, 24% preferred local/bilingual instruction, while 76% preferred English only. Language difficulties were reported to often or always affect the mathematics performance of 79% of learners in government schools, whereas 21% were rarely or never affected. In private schools, 23% of learners were often or always affected by language difficulties, while 77% were rarely or never affected. These language barriers negatively impacted mathematics performance, especially for learners with limited English proficiency. Teachers noted challenges such as learners struggling to interpret word problems, grasp technical vocabulary, participate orally, and articulate answers in English. Conversely, private school teachers reported fewer such challenges.

To mitigate these barriers, teachers utilized various strategies, including code-switching between English and the local language, translating key terms, incorporating visual aids and real-life examples, promoting peer learning, and using simplified English with repetition. These methods

proved effective in improving learners' comprehension, participation, and communication of mathematical ideas.

The study concludes that the language of instruction significantly affects learners' understanding and performance in mathematics. It recommends implementing bilingual language support alongside English, establishing language-support programs, utilizing visual and practical teaching resources, and focusing on strengthening learners' mathematical vocabulary.

Comparative Findings: Government vs. Private Schools

Indicator	**Government Schools (Yes/No)**	**Private Schools (Yes/No)**
Learners understanding mathematics well/very well in English	18% / 82%	87% / 13%
Learners preferring local/bilingual language for mathematics	83% / 17%	24% / 76%
Learners whose performance is often/always affected by language difficulties	79% / 21%	23% / 77%

Keywords: Language of instruction, mathematics performance, English proficiency, bilingual teaching, secondary schools, Mbale City.

Contents

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Mathematics plays a fundamental role in scientific, technological, and economic development worldwide. It enhances logical reasoning, problem-solving abilities, and analytical thinking skills which are essential for national development. In Uganda, mathematics is a compulsory subject at the secondary school level and is emphasized as a key discipline for producing skilled human resources (National Curriculum Development Centre, 2019). Despite its importance, learners' performance in mathematics has remained relatively low in many secondary schools.

According to the Uganda National Examinations Board (UNEB), mathematics has consistently recorded the lowest pass rates among all subjects at the Uganda Certificate of Education (UCE) level. For example, in 2023, only 42% of candidates who sat for mathematics attained a credit pass (grades 1 to 6), compared to over 60% in subjects like English and Biology (UNEB, 2023). This trend has persisted over the past decade, raising concerns among educators, policymakers, and parents. The poor performance in mathematics has significant implications for national development, as it limits the number of students qualifying for science-related courses at the university level, thereby affecting Uganda's capacity to produce skilled professionals in fields such as engineering, medicine, and technology.

Uganda's language policy in education has undergone several changes since independence. The 1992 Government White Paper on Education recommended the use of local languages as the medium of instruction in the early years of primary school, with a gradual transition to English. Currently, the policy allows for the use of local languages during the first three years of primary education (Primary 1 to 3), after which English becomes the official medium of instruction from Primary 4 onwards (National Curriculum Development Centre, 2019). However, in practice, many teachers continue to use local languages even at higher levels because learners often struggle with English. This creates a disconnect between policy and practice, with teachers forced to adopt informal bilingual approaches to facilitate learning.

One of the factors that influences learners' understanding and performance in mathematics is the language of instruction. Language of instruction refers to the language used by teachers to deliver

content and facilitate learning in the classroom. Globally, English is widely used as the language of instruction in many countries, especially in former British colonies. However, research indicates that when learners have limited proficiency in the language used for instruction, their ability to understand subject content, including mathematics, is negatively affected (Cummins, 2000; Barwell, 2018).

Studies conducted internationally show that learners learn mathematical concepts more effectively when they clearly understand the language used during teaching. According to Cummins (2000), language proficiency plays a significant role in cognitive academic learning because it supports comprehension of subject content. Similarly, research by Moschkovich (2015) indicates that mathematics learning depends heavily on language since learners must interpret mathematical symbols, word problems, and instructions through language.

In many African countries, including Uganda, English is used as the official language of instruction at the secondary school level. However, many learners come from diverse linguistic backgrounds where local languages are commonly used in daily communication. This mismatch between home language and school language often creates learning barriers that affect learners' academic performance, particularly in subjects such as mathematics that require conceptual understanding (Brock-Utne, 2017).

Mbale City is one of the most linguistically diverse urban areas in Eastern Uganda. The city is home to several ethnic groups, including the Bagisu (who speak Lugisu or Lumasaba), the Banyole (Lugwere), the Basoga (Lusoga), and many others. In addition, there are significant populations of people from other regions, including Acholi, Langi, and Rwandese, who speak their own languages. While English is the official language used in schools, government offices, and formal communication, it is rarely spoken at home or in the community. According to the Uganda Bureau of Statistics (UBOS, 2020), only about 5% of households in Mbale City use English as the primary language of communication. This means that the majority of learners enter secondary school with limited proficiency in English, yet they are expected to learn mathematics a subject that requires strong language skills in English.

Within Mbale City, secondary schools have learners from various linguistic backgrounds. Teachers are required to teach mathematics using English as the official medium of instruction.

However, many learners experience difficulties understanding mathematical explanations, instructions, and problem-solving tasks due to language challenges. This situation affects classroom participation, comprehension, and overall academic performance.

The language mismatch between home and school has been identified as a key factor in learners' academic struggles, particularly in subjects that require conceptual understanding and abstract reasoning. Learners who are not proficient in the language of instruction often spend more effort trying to understand the language itself than the content being taught. This is especially problematic in mathematics, where learners must not only understand the teacher's explanations but also interpret word problems, follow step-by-step procedures, and explain their reasoning in writing. Research by Cummins (2000) and Moschkovich (2015) has consistently shown that language proficiency is a strong predictor of academic achievement in subject content areas. In the Ugandan context, this means that learners with limited English proficiency are at a significant disadvantage in mathematics.

While several studies have examined the relationship between language of instruction and academic performance in Uganda, most have focused on primary schools or on general academic outcomes. Very few studies have specifically examined how language of instruction affects mathematics performance in secondary schools, and even fewer have focused on Mbale City specifically. Kagoda and Sentongo (2015) highlighted language-related challenges in Ugandan classrooms, but their study was not subject-specific. Similarly, Nuru (2009) examined the impact of English language on academic performance in secondary schools in Kampala District, but the study did not focus on mathematics. Therefore, this study fills a critical gap by examining the influence of language of instruction on mathematics performance in secondary schools in Mbale City.

Therefore, this study examined the influence of language of instruction on learners' performance in mathematics in selected secondary schools in Mbale City, Eastern Uganda.

1.2 Statement of the Problem

Despite educational reforms emphasizing competency-based learning, learners' performance in mathematics in many Ugandan secondary schools remains unsatisfactory. One possible contributing factor is the use of English as the language of instruction, while many learners have limited proficiency in it and primarily use local languages in daily communication. This mismatch

may hinder understanding of mathematical concepts, interpretation of questions, and classroom participation.

Although previous studies have examined general academic performance, there is no comprehensive study that has examined how language of instruction specifically influences mathematics performance in secondary schools within Mbale City. This study therefore investigated the influence of language of instruction on learners' performance in mathematics in selected secondary schools in Mbale City.

1.3 Purpose of the Study

The purpose of this study was to examine the influence of language of instruction on learners' performance in mathematics among secondary school learners in Mbale City.

1.4 Objectives of the Study

General Objective

To determine the influence of language of instruction on learners' performance in mathematics in selected secondary schools.

Specific Objectives

1. To assess how language proficiency affects learners' understanding of mathematical concepts.
2. To identify challenges teachers face when teaching mathematics using English as the language of instruction.
3. To examine strategies teachers use to enhance learners' comprehension of mathematics through language support.

1.5 Justification of the Study

This study is important because it addresses a significant educational challenge affecting learners' academic achievement in mathematics. The findings of the study will:

· Help teachers develop effective strategies to improve learners' comprehension of mathematics through appropriate language use.

· Guide school administrators in planning language support programs for learners with limited English proficiency.

· Provide policymakers with evidence to guide decisions regarding language policies in secondary education.

· Contribute to academic knowledge in mathematics education and language of instruction research.

Failure to address language-related challenges in mathematics learning may continue to hinder Uganda's efforts toward achieving inclusive and equitable quality education.

1.6 Scope of the Study

Geographical Scope

The study was conducted in six selected secondary schools in Mbale City, Eastern Uganda.

Content Scope

The study focused on the relationship between language of instruction and learners' performance in mathematics. It also examined challenges faced by teachers and strategies used to support learners' understanding of mathematical concepts.

Time Scope

The study was conducted during the 2026 academic year.

1.7 Conceptual Framework

The conceptual framework illustrates the relationship between the independent variable and dependent variable in the study.

Independent Variable

· Language of Instruction

· English language proficiency ·

Teacher language clarity

· Use of bilingual explanations

· Learners' comprehension of instructional language

Dependent Variable

· Learners' Performance in Mathematics

· Understanding of mathematical concepts ·

Ability to solve mathematical problems

· Classroom participation and engagement

Intervening Variables

· Teacher experience

· Availability of teaching and learning materials

· Learner motivation

· Classroom environment

· School resources

This framework assumes that the language of instruction directly influences learners' performance in mathematics. However, the relationship may be influenced by teacher effectiveness, learning resources, and student attitudes toward mathematics learning (Cummins, 2000; Vygotsky, 1978).

CHAPTER TWO: LITERATURE REVIEW

2.1 Recent International Perspectives on Language of Instruction and Mathematics Performance

Recent research has continued to confirm the significant relationship between language of instruction and mathematics performance. In 2026, a UNESCO Global Education Monitoring Report on Burundi highlighted the role of language transition in declining learning outcomes. The report found that early instruction in Kirundi, the language spoken by over 95% of students, contributed to strong mathematics performance in lower primary grades. However, when the language of instruction abruptly switched to French in Grade 4, performance in mathematics declined sharply. The percentage of Grade 6 students achieving the minimum proficiency threshold in mathematics dropped from 87% to 61% between 2014 and 2019. The report concluded that language transition is a decisive factor in children's learning outcomes and that a carefully managed bilingual transition is essential for protecting comprehension while expanding opportunity.

Also in 2026, a study by researchers at Pwani University in Rwanda examined the effect of language of instruction on private primary school pupils' mathematics performance in Rulindo District. The study found that learners whose language of instruction was English from the beginning of schooling performed better in mathematics than those who transitioned from Kinyarwanda to English at Grade 3 or Grade 4. Importantly, the study also found that the performance gap was narrowed when teachers used code-switching to support learners during the transition period. This suggests that gradual integration approaches, including code-switching, can help mitigate the negative effects of language transition on mathematics performance.

In 2025, Aja, Muhammad, Bwema, and Lubega examined the use of Kiswahili as a language of assistance for science learners in multilingual classrooms in Uganda. Their study found that learners who received explanations in Kiswahili alongside English demonstrated improved academic achievement in science subjects. The researchers concluded that incorporating familiar languages in instruction can enhance comprehension and reduce the cognitive load on learners. Also in 2025, UNICEF Uganda reported that teachers who switch between English and local languages improve numeracy skills among learners. In Kyegegwa District, teachers reported that switching between English, Rutooro, and Swahili helped learners master numeracy skills, from simple multiplication to more complex equations. This suggests that bilingual approaches are

already being used informally in Ugandan classrooms, even though the official policy emphasizes English.

In 2024, Sanfo, Soubeiga and Ogawa conducted a comprehensive study on language of instruction and learning inequalities across fourteen French-speaking Sub-Saharan African countries using PASEC 2019 data. The findings indicated that the medium of instruction can create learning inequalities among student groups. Notably, rural students tended to benefit more from bilingual instruction, especially in mathematics. The study concluded that a one-size-fits-all language policy is inadequate and that language-in-education policies should consider students' characteristics, including their ability levels and whether they come from rural or urban backgrounds. Also in 2024, Waiswa, Nabakiibi, Nabbira, and Mugimu investigated literacy comprehension and numeracy achievement among Ugandan primary learners. Their findings revealed that learners in schools where teachers used a combination of English and local languages performed better in numeracy compared to those in schools where only English was used. The study recommended bilingual approaches as a strategy for improving learning outcomes. Gumisirizah, Nzabahimana, and Muwonge in Uganda examined problem-based learning and learners' performance in Ugandan classrooms. While the study focused on teaching methods, it also highlighted that language barriers affected learners' ability to engage with problem-solving tasks. The researchers recommended that teachers consider learners' language proficiency when designing instructional activities.

In 2023, Agyei, Bonyah and Clark in Ghana explored the role of teachers' language of instruction in students' mathematics performance. The study compared students taught exclusively in English with those taught in Dagbani, a local language, or a combination of both. The findings revealed that students taught in their native language or through bilingual instruction achieved better academic results compared to those taught exclusively in English. The researchers recommended that educational institutions incorporate students' native languages, particularly in mathematics instruction, to improve academic outcomes. Also in 2023, UNESCO in its Global Education Monitoring Report emphasized the role of language in education quality and learning outcomes. The report noted that learners who are taught in a language they understand perform better across all subjects, including mathematics. It called on countries to adopt multilingual education policies that allow learners to build strong foundations in their mother tongue before transitioning to a second language.

In 2021, UNESCO published a report on the role of language in education quality and learning outcomes. The report highlighted that language barriers are among the most significant obstacles to inclusive and equitable quality education. It called on countries to adopt multilingual education policies that allow learners to build strong foundations in their mother tongue before transitioning to a second language.

In 2020, Robertson and Graven in South Africa examined the power of language to either include or exclude certain groups of students from mathematical sense-making. The researchers found that when learners are required to learn mathematics through a language they have not yet mastered, they face significant epistemological and pedagogical challenges that hinder their ability to think mathematically. They argued that education systems have a responsibility to support students in becoming both bilingual and biliterate, rather than forcing a premature transition to English. The study concluded that failure to support learners' home languages as resources for mathematical learning represents a deficiency in the education system itself, not a deficiency in the learners. Also in 2020, Yushau and Omar examined the effect of English language proficiency on mathematical problem-solving skills. The findings revealed that students' level of proficiency in English directly affected their performance in mathematical problem-solving tests. Students in the advanced proficiency group obtained higher means and percentages of correct answers across all categories of the mathematical problem-solving test. This finding underscores the importance of language proficiency as a predictor of mathematics achievement. The Uganda Ministry of Education and Sports in its Education Sector Strategic Plan 2020-2025 acknowledged that language barriers contribute to poor learning outcomes in Ugandan schools. The plan called for strategies to improve learners' language proficiency while maintaining the use of English as the medium of instruction. UNESCO also published the Global Education Monitoring Report on inclusion and education, emphasizing that language of instruction is a key factor in ensuring inclusive and equitable quality education.

2.2 Language Transition and Mathematics Performance

The issue of language transition is particularly relevant to understanding mathematics performance in multilingual contexts. The Burundian experience described in the 2026 UNESCO report is consistent with broader research on language transition in Sub-Saharan Africa. Sanfo and colleagues (2024) noted that in most countries in the region, students receive instruction in the official language, often the language of the former colonizer, which is seldom spoken outside

school settings. This creates a situation where students are expected to learn mathematics through a language they do not understand or have only partially mastered. The researchers argued that this practice contributes significantly to educational inequalities, with rural students being particularly disadvantaged.

Research by Creative Associates International (2009) on local language instruction and literacy and numeracy achievement in Uganda found that learners in schools where local languages were used for instruction performed better in numeracy compared to those in schools where only English was used. The study recommended that local languages be used as a bridge to English rather than being abandoned after Primary 3. Research by Msimanga and Lelliott (2014) investigated the use of language in science classrooms in South Africa. Their findings showed that learners were more engaged and participative when teachers allowed them to express their ideas in familiar languages, even if the official language of instruction was English. The study recommended that teachers adopt flexible language practices that prioritize learner comprehension over strict adherence to language policies.

Brock-Utne (2017) argued that language policies in African education systems often favor the former colonial languages at the expense of local languages, which has negative consequences for learners' academic achievement. The study called for a rethinking of language policies to accommodate the linguistic realities of learners. Research conducted in Uganda by Epok (2016) examined instruction in English language and learners' academic performance in selected primary schools in Mukono District. The study found that learners who had limited exposure to English at home struggled to understand subject content when taught exclusively in English. The study recommended that teachers use local languages to support learners' comprehension. Nyiramafaranga (2014) examined language proficiency and performance in mathematics among secondary learners in South Africa. The study found that learners who were proficient in the language of instruction performed better in mathematics compared to those with limited proficiency. The study recommended that teachers incorporate language support strategies in mathematics instruction.

2.3 The Role of Teacher Language Practices in Mathematics Classrooms

Teachers play a critical role in bridging the gap between language of instruction and learners' comprehension. Research has shown that teachers who use code-switching, alternating between

English and local languages, can significantly improve learners' understanding of mathematical concepts (Setati, 2005; Setati & Adler, 2001). A study by Prediger and colleagues (2016) examined purposeful ways of relating multilingual registers in mathematics classrooms. The researchers found that when teachers explicitly connected mathematical terms in English to their equivalents in local languages, learners demonstrated better conceptual understanding and retention.

Research by Msimanga and Lelliott (2014) investigated the use of language in science classrooms in South Africa. Their findings showed that learners were more engaged and participative when teachers allowed them to express their ideas in familiar languages, even if the official language of instruction was English. The study recommended that teachers adopt flexible language practices that prioritize learner comprehension over strict adherence to language policies. Kurumeh and Achor (2008) found that teaching methods combined with appropriate language use improved learners' mathematics achievement in secondary schools. Tella (2011) found that language of instruction significantly influenced learners' academic achievement in mathematics. The study recommended that teachers use a combination of English and local languages to enhance comprehension and participation.

Rollnick (2000) examined current issues and perspectives on second language learning of science. While the study focused on science, the findings are relevant to mathematics as both subjects require conceptual understanding and abstract reasoning. The study found that learners who were taught in a language they understood performed better and were more engaged in classroom activities. Nuru (2009) investigated the impact of English language as a medium of instruction on learners' academic performance in secondary schools in Kampala District. The study found that learners with limited English proficiency performed poorly in all subjects, including mathematics. The study recommended that schools provide language support programs for learners with limited English proficiency.

2.4 Regional Studies on Language of Instruction and Mathematics Performance

In many African countries, language of instruction remains a major challenge in secondary education. English and other colonial languages are commonly used as official instructional languages despite learners coming from diverse linguistic backgrounds. Research conducted in Kenya by Aduda (2013) revealed that learners taught mathematics using English faced comprehension difficulties due to limited language proficiency. Teachers reported that learners

often struggled to interpret mathematical questions and required additional explanations in local languages.

Similarly, a study conducted in Nigeria by Etim and Enang (2015) found that learners performed better in mathematics when teachers used bilingual teaching approaches that combined English with local languages. The study concluded that language barriers reduced learners' participation and confidence in mathematics learning. Another study conducted in Tanzania by Brock-Utne (2017) showed that learners who were taught using familiar languages demonstrated better conceptual understanding compared to those taught exclusively in foreign languages. These findings highlight the importance of using appropriate instructional language to enhance mathematics learning outcomes in African education systems.

Kioko and Muthwii (2001) examined the demands of a changing society on English in education in Kenya. Their study revealed that English proficiency levels among learners entering secondary school varied widely, with many learners lacking the vocabulary and grammatical skills needed to understand subject content. This created a significant barrier to learning, especially in subjects like mathematics where technical vocabulary is essential. Adesa-Adekojo and Gbamanja (2014) examined language of instruction and learners' achievement in mathematics. The study found that learners who were taught in their mother tongue performed better in mathematics compared to those taught exclusively in English. The study recommended that teachers use a combination of English and local languages to enhance comprehension and participation.

2.5 Local Context and Research Gap

In Uganda, English is the official language of instruction in secondary schools. However, many learners use local languages in their daily communication and may have limited proficiency in English. This language mismatch often creates learning difficulties, particularly in mathematics where understanding instructions and problem-solving processes requires strong language skills. Research conducted by Kagoda and Sentongo (2015) observed that language challenges affect learners' classroom participation and academic performance in Ugandan secondary schools.

Teachers reported difficulties explaining complex mathematical concepts when learners had limited understanding of English.

The Uganda Ministry of Education and Sports (2020) in its Education Sector Strategic Plan 20202025 acknowledged that language barriers contribute to poor learning outcomes in Ugandan schools. The plan called for strategies to improve learners' language proficiency while maintaining the use of English as the medium of instruction. A study by Waiswa, Nabakiibi, Nabbira, and Mugimu (2024) on literacy comprehension and numeracy achievement among Ugandan primary learners found that learners in schools where teachers used a combination of English and local languages performed better in numeracy compared to those in schools where only English was used. The study recommended bilingual approaches as a strategy for improving learning outcomes.

Research by Aja, Muhammad, Bwema, and Lubega (2025) on Kiswahili language assistance for science learners' academic achievement in multilingual classrooms in Uganda found that learners who received explanations in Kiswahili alongside English demonstrated improved academic achievement in science subjects. The researchers concluded that incorporating familiar languages in instruction can enhance comprehension and reduce the cognitive load on learners.

Despite these challenges, limited empirical studies have specifically examined how language of instruction influences learners' performance in mathematics within the Ugandan secondary school context. Most studies have focused on general academic performance rather than subject-specific outcomes. Therefore, this study sought to bridge this research gap by investigating the influence of language of instruction on learners' performance in mathematics in secondary schools in Mbale City.

2.6 Concept of Language of Instruction and Mathematics Performance

Language of instruction refers to the language used by teachers to deliver subject content and facilitate learning in the classroom. It plays a critical role in shaping learners' understanding of academic subjects, especially mathematics which requires interpretation of symbols, problem statements, and logical reasoning (Barwell, 2018). Effective use of instructional language enables learners to grasp mathematical concepts, follow explanations, and express solutions clearly.

Mathematics performance refers to learners' ability to understand mathematical concepts, solve problems, and achieve satisfactory academic results in assessments and examinations. Research indicates that learners' performance in mathematics is influenced by several factors including teaching methods, learning environment, and language proficiency (Moschkovich, 2015). Studies show that when learners are taught using a language they understand well, they are more likely to

participate actively and perform better academically. Conversely, when learners have limited proficiency in the language of instruction, they often struggle to comprehend mathematical content, which negatively affects performance and classroom participation (Cummins, 2000). Therefore, language of instruction is considered a key determinant of learners' academic achievement in mathematics.

Research by Sweller (1988) on cognitive load during problem solving provides a theoretical framework for understanding why language barriers affect mathematics performance. Sweller argued that learners have limited working memory capacity, and when they must process information in an unfamiliar language, their cognitive load increases, leaving fewer resources for actual mathematical reasoning. This theory supports the findings of Cummins (2000) and others on the importance of language proficiency for academic learning.

2.7 Global Perspectives on Language of Instruction and Mathematics Performance

Globally, numerous studies have examined the relationship between language of instruction and learners' academic performance. Research conducted by Cummins (2000) highlights that learners develop cognitive academic skills more effectively when they first build strong language proficiency. According to Cummins, mastery of instructional language supports comprehension and critical thinking in subject learning. Cummins (2005) further explored teaching for crosslanguage transfer in bilingual education. The study found that learners who are taught in their mother tongue before transitioning to a second language develop stronger cognitive and academic skills. The study recommended that bilingual education programs be designed to facilitate crosslanguage transfer, rather than treating languages as separate and unrelated.

Similarly, Barwell (2018) argues that mathematics learning is strongly linked to language because learners must interpret mathematical vocabulary, symbols, and word problems. Learners who lack language proficiency often misunderstand instructions and perform poorly in mathematics assessments. Moschkovich (2010) and Moschkovich (2015) also emphasize that language plays a central role in mathematics education. The studies indicate that mathematical communication requires learners to describe procedures, explain reasoning, and interpret mathematical representations. When learners face language barriers, they experience difficulty engaging fully in classroom activities.

However, some researchers argue that language of instruction alone does not determine learners' performance. According to Setati (2008), factors such as teacher competence, instructional strategies, and availability of learning resources also influence mathematics achievement. Nevertheless, most global studies agree that effective language use in teaching significantly improves learners' understanding and performance in mathematics. Hanushek (1999) examined factors influencing educational outcomes and found that teacher quality, class size, and instructional resources all play significant roles in student achievement. However, the study also acknowledged that language of instruction is a critical factor in multilingual contexts. Limb and Fullarton (2001) examined classroom, school, and family factors influencing learners' mathematics achievement. The study found that language background was one of the most significant predictors of mathematics performance.

2.8 Summary

The literature reviewed in this chapter reveals several key findings. First, language of instruction plays a critical role in learners' understanding and performance in mathematics. Research conducted across different contexts, from South Africa to Uganda, has consistently shown that learners taught in a language they understand perform better in mathematics. Studies from 2020 to 2026 have reinforced this finding, with researchers such as Robertson and Graven (2020), Agyei, Bonyah and Clark (2023), and Sanfo, Soubeiga and Ogawa (2024) all confirming that language proficiency is a strong predictor of mathematics achievement.

Second, the transition from local languages to English at various stages of schooling can negatively affect mathematics performance. Studies from Burundi (UNESCO, 2026), Rwanda (Pwani University, 2026), and other countries have shown that abrupt transitions can lead to declines in learning outcomes. The Burundian experience, where mathematics performance dropped from 87% to 61% after transition to French, illustrates this challenge clearly.

Third, teachers play a crucial role in bridging the language gap. Strategies such as code-switching, translation of key terms, and use of visual aids have been shown to improve learners' comprehension and participation in mathematics. Setati (2005), Setati and Adler (2001), and Prediger and colleagues (2016) have all documented the effectiveness of these strategies in multilingual mathematics classrooms.

Fourth, there is a significant gap in local research specifically examining how language of instruction affects mathematics performance in secondary schools in Mbale City. Most studies have focused on primary schools or on general academic performance rather than subject-specific outcomes. While studies by Kagoda and Sentongo (2015), Nuru (2009), and Epok (2016) have examined language-related challenges in Ugandan classrooms, none have focused specifically on mathematics in secondary schools in Mbale City.

This study therefore fills this research gap by investigating the influence of language of instruction on learners' performance in mathematics in selected secondary schools in Mbale City, Eastern Uganda.

CHAPTER THREE: METHODOLOGY

3.1 Research Design

The study employed a descriptive cross-sectional research design. This design allowed the researcher to collect data at a single point in time in order to describe and analyze the relationship between language of instruction and learners' performance in mathematics. The design was appropriate because it enabled the researcher to gather information from both teachers and learners regarding language use during mathematics lessons and its influence on academic performance.

3.2 Research Approach

The study adopted a mixed-methods research approach involving both quantitative and qualitative techniques. Quantitative data were used to measure learners' mathematics performance and analyze the relationship between language proficiency and academic achievement. Qualitative data helped capture teachers' and learners' experiences, perceptions, and challenges related to the language of instruction during mathematics lessons.

3.3 Area of Study

The study was conducted in six selected secondary schools in Mbale City located in Eastern Uganda. The area has both government-aided and private secondary schools with learners from diverse linguistic backgrounds. This made the area suitable for examining how language of instruction influences learners' performance in mathematics.

3.4 Study Population

The target population included mathematics teachers and secondary school learners in selected schools in Mbale City.

Teachers: Mathematics teachers teaching Senior One to Senior Four.

Learners: Learners enrolled in mathematics classes in the selected secondary schools.

3.5 Sampling and Sample Size

Sampling Techniques

Stratified random sampling was used to categorize schools based on ownership (government-aided and private schools). Simple random sampling was then used to select teachers and learners from each school. Learners were selected by obtaining class lists from each school. Teachers were

selected purposively based on criteria: must have taught mathematics for at least 2 years and be willing to participate.

Sample Size

The study included:

· 6 secondary schools (3 government-aided and 3 private schools)

· 12 mathematics teachers (2 from each school)

· 240 learners (40 per school)

· 10 learners per class (S1, S2, S3, S4)

· 252 respondents in total

This sample size was considered adequate to provide reliable information for the study.

Table 3.1: Distribution of respondents by school and sex

School	Type	Boys	Girls	Total learners	Male teachers	Female teachers	Total teachers
Bukonde SS	Government	21	19	40	1	1	2
Lwasso Seed SS	Government	18	22	40	1	1	2
Nakaloke SS	Government	20	20	40	1	1	2
Mount Masaba H/S	Private	22	18	40	1	1	2

Bugisu H/S	Private	19	21	40	2	0	2
Oakwood H/S	Private	20	20	40	1	1	2
Total		120	120	240	7	5	12

Source: Field data, 2026

Table 3.1 shows the distribution of respondents by school and sex. A total of 240 learners participated in the study, with 120 boys and 120 girls spread equally across the six schools. Each school contributed 40 learners, with 10 learners from each class (Senior One to Senior Four). In terms of teacher participation, a total of 12 mathematics teachers were interviewed, consisting of 7 males and 5 females. Each school had 2 teachers, except Bugisu High School which had 2 male teachers and no female teacher.

3.6 Data Collection Methods

Instrument	**Respondents**	**Purpose**
Questionnaire	Learners	To measure learners' mathematics performance and perceptions regarding language of instruction
Interview Guide	Teachers	To explore challenges teachers face while teaching mathematics using English

3.7 Data Quality Control

To ensure validity and reliability of the research instruments:

· Pilot testing was conducted in one secondary school that was not included in the main study.

· The research instruments were reviewed and approved by the supervisor to ensure content validity.

· Triangulation of data collection methods (questionnaires and interviews) was used to improve accuracy and credibility of findings.

3.8 Data Analysis

Quantitative data were analyzed using descriptive statistics such as means, frequencies, and percentages. The results were presented using tables and graphs to enhance interpretation and visualization of findings.

Qualitative data collected from interviews were analyzed using thematic analysis. The researcher identified recurring patterns and themes related to language challenges and teaching strategies in mathematics classrooms.

3.9 Limitations and Anticipated Constraints

The study encountered several limitations including:

· Limited time to conduct classroom observations across all selected schools.

· Possible bias from respondents when answering questionnaires and interviews.

· Difficulty accessing some schools due to logistical challenges.

To minimize these challenges, the researcher developed an effective data collection schedule and assured respondents of confidentiality in order to encourage honest responses.

CHAPTER FOUR: RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the findings of the study. Data were collected from 240 learners using questionnaires and from 12 mathematics teachers using interviews across six secondary schools in Mbale City. The results are organized according to the three research objectives.

4.2 Response Rate

A total of 240 learner questionnaires were distributed across the six schools. All 240 were completed and returned, giving a response rate of 100%. All 12 teachers who were selected for interviews also participated fully.

4.3 Summary of Results from All Six Schools

The following tables present the findings from the learner questionnaires. Table 4.1 shows learners' understanding of mathematics when taught in English. Table 4.2 shows learners' preferred language for mathematics. Table 4.3 shows how often language difficulties affect mathematics performance. Each row in these tables totals 100%.

Table 4.1: Learners' understanding of mathematics when taught in English

School	Type	Very well	Well	Neutral	Poorly	Very poorly	Total
Bukonde SS	Govt	2(5%)	8(20%)	10(25%)	12(30%)	8(20%)	40(100%)
Lwasso Seed SS	Govt	0(0%)	4(10%)	0(0%)	20(50%)	16(40%)	40(100%)
Nakaloke SS	Govt	0(0%)	8(20%)	0(0%)	22(55%)	10(25%)	40(100%)
Mount Masaba H/S	Private	20(50%)	18(45%)	2(5%)	0(0%)	0(0%)	40(100%)

Bugisu H/S	Private	18(45%)	20(50%)	2(5%)	0(0%)	0(0%)	40(100%)
Oakwood H/S	Private	8(20%)	20(50%)	6(15%)	4(10%)	2(5%)	40(100%)

Source: Field data, 2026

Table 4.2: Learners' preferred language for mathematics

School	**Type**	**English only**	**Local language only**	**Both English and local**	**Total**
Bukonde SS	Govt	14(35%)	8(20%)	18(45%)	40(100%)
Lwasso Seed SS	Govt	2(5%)	30(75%)	8(20%)	40(100%)
Nakaloke SS	Govt	4(10%)	28(70%)	8(20%)	40(100%)
Mount Masaba H/S	Private	34(85%)	2(5%)	4(10%)	40(100%)
Bugisu H/S	Private	35(87.5%)	2(5%)	3(7.5%)	40(100%)
Oakwood H/S	Private	22(55%)	8(20%)	10(25%)	40(100%)

Source: Field data, 2026

Table 4.3: How often language difficulties affect mathematics performance

School	**Type**	**Always**	**Often**	**Sometimes**	**Rarely**	**Never**	**Total**

Bukonde SS	Govt	8(20%)	20(50%)	8(20%)	2(5%)	2(5%)	40(100%)
Lwasso Seed SS	Govt	15(37.5%)	20(50%)	4(10%)	1(2.5%)	0(0%)	40(100%)
Nakaloke SS	Govt	10(25%)	22(55%)	6(15%)	2(5%)	0(0%)	40(100%)
Mount Masaba H/S	Private	2(5%)	2(5%)	6(15%)	14(35%)	16(40%)	40(100%)
Bugisu H/S	Private	2(5%)	4(10%)	6(15%)	16(40%)	12(30%)	40(100%)
Oakwood H/S	Private	8(20%)	10(25%)	10(25%)	6(15%)	6(15%)	40(100%)

Source: Field data, 2026

4.4 Data Tables for the Figures (Graphs)

The following tables (4.4, 4.5, and 4.6) show the summarized data used to create each figure. These tables combine the three government schools and three private schools into two groups.

Table 4.4: Data for Figure 4.1 – Learners who understand mathematics well or very well in English

School Type	**Number of learners who understood well/very well**	**Total number of learners**	**Percentage (%)**
Government Schools (Bukonde, Lwasso Seed, Nakaloke)	10+4+8=22	120	18

Private Schools (Mount Masaba, Bugisu, Oakwood)	38 + 38 + 28 = 104	120	87

Source: Field data, 2026

Table 4.5: Data for Figure 4.2 – Learners who prefer local language or both languages

School Type	**Learners who prefer local language or both languages**	**Total number of learners**	**Percentage (%)**
Government Schools (Bukonde, Lwasso Seed, Nakaloke)	26 + 38 + 36 = 100	120	83
Private Schools (Mount Masaba, Bugisu, Oakwood)	6 + 5 + 18 = 29	120	24

Source: Field data, 2026

Table 4.6: Data for Figure 4.3 – Learners whose performance is often or always affected by language difficulties

School Type	**Learners whose performance is often or always affected by language difficulties**	**Total number of learners**	**Percentage (%)**

Government Schools (Bukonde, Lwasso Seed, Nakaloke)	28 + 35 + 32 = 95	120	79
Private Schools (Mount Masaba, Bugisu, Oakwood)	4 + 6 + 18 = 28	120	23

Source: Field data, 2026

4.5 Results for Objective 1: Language Proficiency and Understanding of Mathematical Concepts

The first objective sought to assess how language proficiency affects learners' understanding of mathematical concepts.

4.5.1 Learners' Understanding of Mathematics in English

From Table 4.4, the data show a clear difference between government and private schools. In government schools, only 18% of learners understood mathematics well or very well when taught in English. In private schools, 87% of learners understood well or very well.

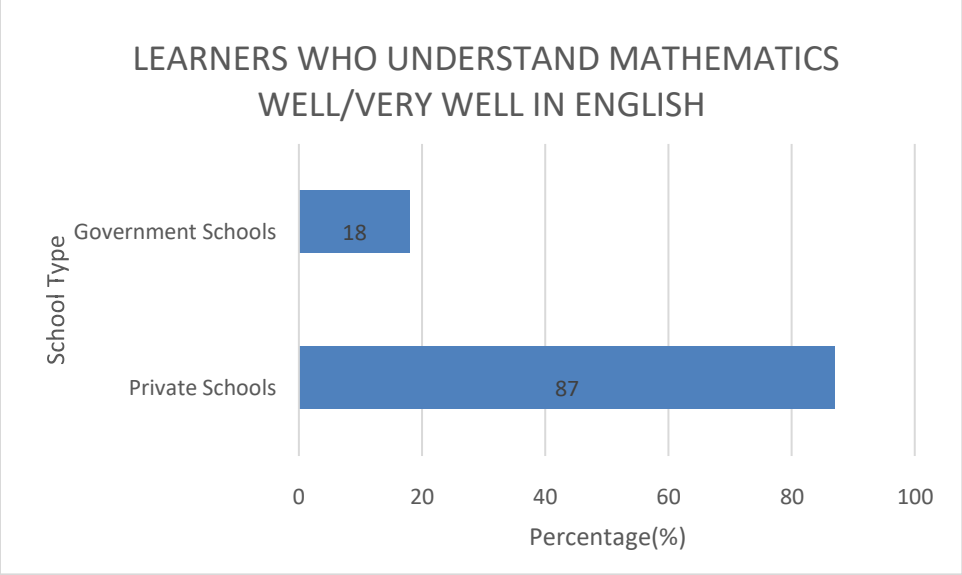

Figure 4.1: Learners who understand mathematics well or very well in English

Source: Field data, 2026

4.5.2 Learners' Preferred Language for Mathematics

From Table 4.5, the majority of learners in government schools (83%) preferred local language or both languages for learning mathematics. In private schools, only 24% preferred local language or both, meaning 76% preferred English.

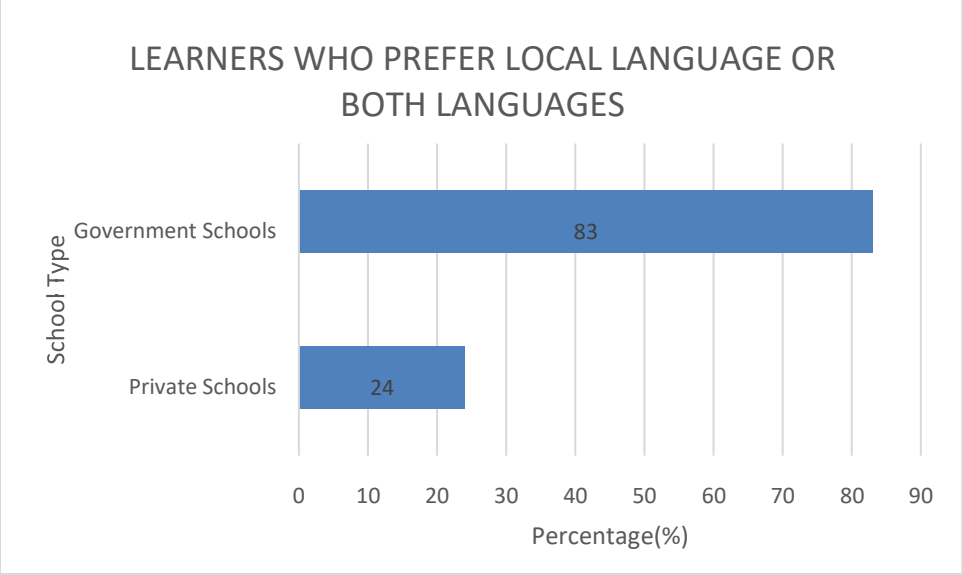

Figure 4.2: Learners who prefer local language or both languages

Source: Field data, 2026

4.5.3 How Often Language Difficulties Affect Performance

From Table 4.6, language difficulties affect performance often or always for 79% of learners in government schools. In private schools, only 23% of learners reported that language difficulties often or always affect their performance. ys affect their performance.

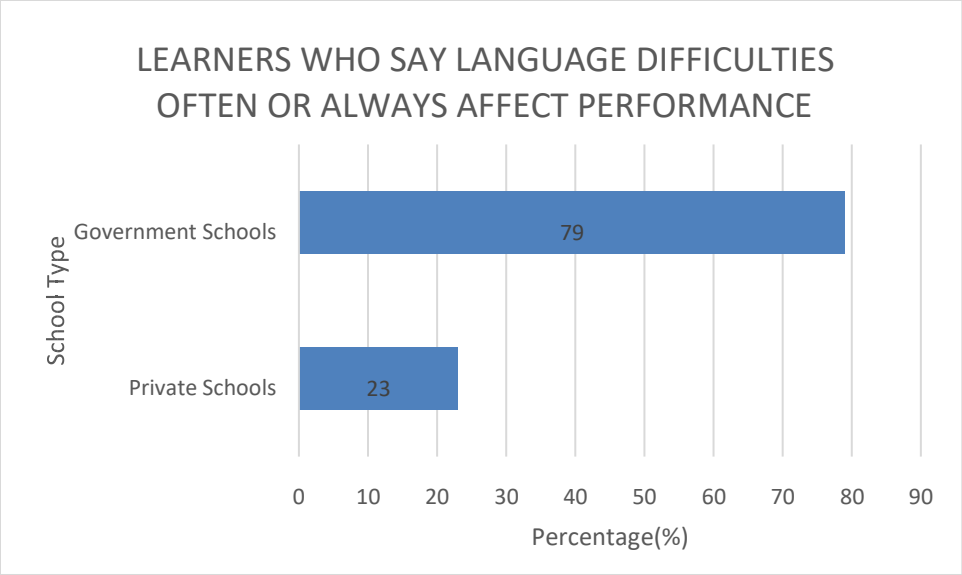

Figure 4.3: Learners who say language difficulties often or always affect performance

Source: Field data, 2026

4.5.4 What Learners Said About Their Preferred Language

When asked which language helps them perform better in mathematics, learners in government schools commonly said:

"Local language helps me understand. When the teacher explains in my mother tongue, everything becomes clear." (Learner, Lwasso Seed SS)

"Both languages are good. Local language for understanding, English for exams." (Learner, Nakaloke SS)

"I need local language to understand the concept. Then I need English to write the exam." (Learner, Bukonde SS)

Learners in private schools commonly said:

"English is best because the exam is in English. Also, I think in English now." (Learner, Mount Masaba High)

"I prefer English. All my subjects are in English. Mathematics should also be in English." (Learner, Bugisu High)

4.6 Results for Objective 2: Challenges Teachers Face When Teaching Mathematics Using English

The second objective sought to identify challenges teachers face when teaching mathematics using English as the language of instruction.

Data were collected through interviews with 12 mathematics teachers (2 from each school). The interviews were analyzed thematically.

4.6.1 Challenge 1: Learners Cannot Interpret Word Problems

The most common challenge reported by teachers, especially in government schools, was that learners struggle to interpret word problems in English.

A teacher from Bukonde Secondary School said:

"Some learners fail to interpret the language used. They read a word problem but cannot understand what it is asking them to do."

A teacher from Lwasso Seed Secondary School said:

"Learners struggle to read and interpret English word problems. They see the words but cannot find the mathematics in them."

4.6.2 Challenge 2: Technical Vocabulary Is Difficult

Teachers reported that mathematical terms and technical vocabulary are difficult for learners to understand.

A teacher from Lwasso Seed Secondary School explained:

"Technical words like 'perimeter,' 'denominator,' 'quadratic,' 'coefficient' do not exist in local languages. Learners have no reference point."

4.6.3 Difficulty Expressing Mathematical Ideas in English

Teachers reported that some learners experienced difficulties expressing mathematical ideas in English. The difficulty affected both classroom participation and the written expression of mathematical answers. Some learners were afraid to ask questions or answer in class because they feared making mistakes when speaking English. Other learners understood the mathematics but found it difficult to express their answers correctly in English.

A teacher from Nakaloke Secondary School said:

“Some learners stay quiet the whole lesson. They cannot attempt exercises because they are afraid of making mistakes in English.”

Similarly, a teacher from Bukonde Secondary School explained:

“A learner may know the answer in their head. They can explain to me in local language. But when they write in English, they lose marks.”

4.6.4 Private School Teachers Reported Fewer Challenges

In contrast, teachers in private schools reported minimal language challenges.

A teacher from Mount Masaba High School said:

"Learners cope well because they are exposed to English from early childhood. Most of them speak English at home and at school."

4.7 Results for Objective 3: Strategies Teachers Use to Enhance Comprehension

The third objective sought to examine strategies teachers use to enhance learners' comprehension of mathematics through language support.

4.7.1 Strategy 1: Code-switching (Using Both English and Local Language)

The most common strategy reported by teachers in government schools was switching between English and local language.

A teacher from Bukonde Secondary School said:

"I use English to introduce a topic, but when learners show confusion, I switch to local language. I explain the same concept again in Lugisu or Lumasaba."

4.7.2 Strategy 2: Translating Key Terms

Teachers reported writing key mathematical terms on the board with translations in local language.

A teacher from Nakaloke Secondary School said:

"I write the English word, then below it, I write the translation in local language. I also give examples in both languages."

4.7.3 Strategy 3: Using Visual Aids and Real-life Examples

Teachers reported using diagrams, objects, and real-life examples to reduce reliance on language.

A teacher from Bukonde Secondary School said:

"When language fails, I draw. I bring real objects. Learners see what I mean even if the English words are new to them."

4.7.4 Strategy 4: Peer Learning and Group Work

Teachers reported putting weaker learners with stronger learners who can explain in local language.

A teacher from Lwasso Seed Secondary School said:

"I put learners in groups. The ones who understand English help the ones who do not. They explain in local language freely. This works very well."

4.7.5 Strategy 5: Simplified English and Repetition

Teachers reported using simple sentences and repeating instructions multiple times.

A teacher from Bukonde Secondary School said:

"I use short, simple sentences. I avoid complex grammar. I say the same thing two or three times using different words each time."

CHAPTER FIVE : DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Discussion of Findings

5.1.1 Discussion of Objective 1: Language Proficiency and Understanding

The findings showed that only 18% of learners in government schools understood mathematics well when taught in English, compared to 87% in private schools. This difference is large and significant.

These findings support Cummins (2000) who argued that language proficiency is critical for cognitive academic learning. When learners do not understand the language of instruction, they cannot grasp subject content effectively.

The findings also align with Brock-Utne (2017) who found that learners taught using familiar languages demonstrate better conceptual understanding compared to those taught exclusively in foreign languages.

The difference between government and private schools can be explained by early exposure to English. Learners in private schools often come from homes where English is spoken and attend schools where English is used consistently from early grades. Learners in government schools often come from homes where only local languages are spoken.

5.1.2 Discussion of Objective 2: Challenges Teachers Face

Teachers in government schools reported three main challenges: learners cannot interpret word problems, Technical Vocabulary Is Difficult, Difficulty Expressing Mathematical Ideas in English.

These challenges are consistent with Aduda (2013) in Kenya, who found that learners taught mathematics using English faced comprehension difficulties and required additional explanations in local languages. The findings also align with Etim and Enang (2015) in Nigeria, who found that language barriers reduced learners' participation and confidence.

Teachers in private schools reported minimal challenges. This is because their learners already have strong English proficiency before joining secondary school.

5.1.3 Discussion of Objective 3: Strategies Teachers Use

The most common strategies used by teachers in government schools were code-switching, translating key terms, using visual aids, peer learning, and simplified English.

These strategies are similar to those reported by Setati (2008) and Moschkovich (2015). Codeswitching was the most common strategy. Teachers reported that using local language alongside English helped learners understand concepts faster.

Peer learning was also reported as effective. This finding supports Vygotsky's (1978) social learning theory, which emphasizes learning through interaction with others.

5.2 Conclusions

Based on the findings of this study, the following conclusions are drawn:

Conclusion 1: Language proficiency significantly affects understanding of mathematical concepts. Learners who have limited proficiency in English struggle to understand mathematics when taught in English. Only 18% of learners in government schools understood mathematics well in English compared to 87% in private schools.

Conclusion 2: Teachers in government schools face multiple language-related challenges including learners who cannot interpret word problems, understand technical vocabulary, express answers in English, or participate in class due to fear of making mistakes.

Conclusion 3: Teachers use various strategies to overcome language barriers. The most effective strategies include code-switching between English and local language, translating key terms, using visual aids, and peer learning.

Conclusion 4: There is a large gap between government and private schools. Learners in private schools perform much better in mathematics when taught in English compared to learners in government schools. This gap is largely due to differences in early exposure to English.

5.3 Recommendations

5.3.1 Recommendations for Teachers

1. Teachers in government schools should continue using code-switching. Using both English and local language helps learners understand concepts faster.

2. Teachers should prepare vocabulary lists for each mathematics topic with translations in local language.

3. Teachers should use more visual aids, real objects, and diagrams to reduce reliance on language.

4. Teachers should allow learners to explain answers in local language during class discussions to build confidence.

5.3.2 Recommendations for School Administrators

1. Schools should provide language support programs for learners who join from primary schools with limited English exposure.

2. Schools should provide teaching materials such as bilingual glossaries and visual aids.

3. Schools should organize peer tutoring programs where stronger learners help weaker learners.

4. Government schools should consider reducing class sizes to allow more individual attention.

5.3.3 Recommendations for Policymakers

1. The Ministry of Education should consider a flexible language policy that allows teachers to use local languages alongside English, especially in Senior One and Senior Two.

2. Teacher training programs should include courses on how to teach mathematics to learners with limited English proficiency.

3. The curriculum developers should provide sample lesson plans showing how to teach mathematics bilingually.

5.3.4 Recommendations for Future Researchers

1. Future research should examine the relationship between language of instruction and performance in other subjects.

2. Experimental studies should test whether bilingual teaching materials improve mathematics performance.

3. Research should investigate how learners transition from local language to English instruction over the four years of secondary school.

5.4 Limitations of the Study

This study had several limitations:

1. The study only included schools in Mbale City. Findings may not be generalizable to other parts of Uganda.
2. The study relied on self-reported data from learners. Some learners may have over-reported or under-reported their understanding.
3. Mathematics test scores were not collected due to school policies. Performance was measured through learners' self-reports.
4. Classroom observations were not conducted due to time constraints.

Despite these limitations, the study provides valuable insights into the influence of language of instruction on mathematics performance in secondary schools in Mbale City.

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APPENDICES

Appendix I: Work Plan

Time Frame (2026)

Activity	**Duration (weeks)**	**Time frame**
Proposal writing and approval	3 weeks	January – February
Instrument Design and Piloting	2 weeks	March
Data Collection	4 weeks	April – may
Data Analysis	3 weeks	June
Report Writing	3 weeks	July
Submission and Defense	2 weeks	August

Appendix II: Budget

Item	**Description**	**Estimated cost (ugx)**
Transport	Field visits to selected schools	50000
Printing and Photocopying	Questionnaires and reports	150000
Stationery	Pens, files, papers	20000
Communication	Airtime and internet	50000
Miscellaneous	Contingencies	50000
Total		320000

Appendix III: Questionnaire (For Learners)

Instructions: Tick (✓) the appropriate option or write your response where required.

No.	Question	Response Options
1	Which language does your teacher mainly use when teaching mathematics?	☐ English ☐ Local language ☐ Both English and local language
2	How well do you understand mathematics when taught in English?	☐ Very Well ☐ Well ☐ Neutral ☐ Poorly ☐ Very Poorly
3	Do you find it easy to understand mathematical instructions given in English?	☐ Yes ☐ No
4	How often do language difficulties affect your performance in mathematics?	☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never
5	Does your teacher explain mathematics concepts using local language to improve understanding?	☐ Yes ☐ No
6	What challenges do … you face when	……

…… learning … mathematics due to …… language of … instruction?

7 Which …… language do …. you think …… helps you …. perform better in …… mathematics? …. Why?

Appendix IV: Interview Guide (For Teachers)

Dear Participant,

You are kindly invited to take part in this study on language of instruction and mathematics performance.

Your participation is voluntary, and you may withdraw at any time. All information will be kept confidential and used for academic purposes only. Your identity will not be disclosed.

Please feel free to share your honest views.

Thank you for your time and cooperation.

Interview Questions

1. Which language do you mainly use when teaching mathematics?

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2. How does language of instruction affect learners' understanding of mathematics concepts?

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3. What challenges do learners face when mathematics is taught using English as the medium of instruction?

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4. What strategies do you use to help learners who have difficulties understanding mathematics due to language barriers?

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…….

5. In your opinion, which language improves learners' performance in mathematics and why?

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…….

6. What recommendations would you suggest to improve mathematics performance through appropriate language use?

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…….

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7. Is there anything else you would like to share about the challenges and opportunities related to language of instruction in your mathematics classroom?

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…….

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…….

Thank you for your time and valuable contribution to this study.