



Perceptions of Using Mother-Tongue on Mathematics Teaching among Primary School Teachers in Ilorin, Kwara State, Nigeria

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Abstract

Language serves as the vehicle through which mathematical ideas, symbols, and operations are communicated. This study investigated the prospects and problems of the use of mother-tongue in teaching mathematics as perceived by primary school teachers in Ilorin, Nigeria. Three research questions were raised according to the purpose of the study. This research was descriptive of the survey type. The population for the study was all primary school teachers in Ilorin city. Simple random sampling technique was used to select 59 mathematics teachers across the primary schools in Ilorin. The research instrument used for data collection in this study was a questionnaire (PPUMIQ). The PPUMIQ was given to three experienced lecturers for face and content validity. The reliability of the instrument was ascertained using Cronbach Alpha statistical analysis and reliability value of 0.79 was obtained. Descriptive statistics of mean and standard deviations were used to answer the research questions raised for the study. Findings showed that use of mother-tongue for teaching primary school mathematics enhanced pupils' active participation, eagerness to learn, easy grasp of the idea, encourages smooth interactions with their teachers, students' value for their language and improved academic performance. In addition, problems associated with the use of mother-tongue for mathematics instruction were; unavailability of materials and resources, discouragement from educated parents, lack training for teachers and inadequate technology. It was therefore recommended that Teacher Professional development training programmes should be organized for teachers, encourage collaborative research with parents and community members, and develop inclusive curriculum for pupils in Ilorin.

Keywords: Mother-tongue, Mathematics Teaching, Primary School Teachers

Introduction

Mathematics is universally recognized as one of the most important school subjects because of its indispensable role in scientific advancement, technological innovation, economic development, and everyday problem-solving. It serves as the foundation upon which many disciplines such as engineering, medicine, architecture, economics, and information technology are built. In most educational systems across the world, including Nigeria, Mathematics is regarded as a compulsory subject and a prerequisite for admission into several tertiary institution programmes. Beyond its academic importance, Mathematics is often described as a universal language because of its symbolic and logical nature, which transcends geographical and linguistic boundaries. According to Sunday et al. (2021), Mathematics functions as a universal means of communication that enables individuals to interpret quantitative relationships and solve real-life problems regardless of cultural or linguistic background. The effective teaching and learning of Mathematics at the primary school level is particularly significant because primary education constitutes the foundation upon which subsequent learning experiences are built. At this formative stage, pupils are introduced to basic numeracy skills, logical reasoning, critical thinking, and problem-solving abilities that shape their future academic development. Consequently, the language through which mathematical concepts are communicated becomes highly important. Language plays a central role in the teaching and learning process because learners can only understand mathematical ideas when instruction is delivered in a language that is meaningful and comprehensible to them. Anne (2019) observed that successful learning of Mathematics requires a strong vocabulary base, comprehension skills, fluency in symbols and diagrams, and the ability to communicate mathematical ideas effectively. In multilingual societies such as Nigeria, the issue of language of instruction has remained a major concern in educational discourse. Nigeria is characterized by linguistic diversity with hundreds of indigenous languages spoken across different ethnic groups. Despite this diversity, English language remains the official language and the dominant medium of instruction in schools. However, the use of English language in teaching young learners, especially

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at the primary school level, has generated debates among scholars and educationists. Many researchers argue that pupils often struggle to understand mathematical concepts when instruction is delivered in a foreign language that they are not fully proficient in. Okudo (2013) noted that English language, being a colonial legacy, poses communication barriers to many Nigerian learners, thereby affecting their understanding of classroom instruction, particularly in Mathematics. The concept of mother tongue refers to the first language acquired naturally by a child from birth. It is the language predominantly spoken in the child's home and immediate environment and often serves as the child's primary means of communication and cognitive development. Richard (2019) described mother tongue as an individual's native language learned during early childhood and used naturally for communication and expression. The mother tongue occupies a central position in the intellectual, emotional, and social development of learners because it shapes their thought processes, cultural identity, and interaction with their environment. Educational psychologists and linguists have emphasized that children learn more effectively when instruction is delivered in a familiar language. The use of mother tongue in education promotes meaningful learning, active classroom participation, confidence, creativity, and better comprehension of abstract concepts. The National Policy on Education in Nigeria advocates the use of the child's immediate environment language or mother tongue as the medium of instruction at the lower primary school level. This policy is based on the understanding that children grasp concepts more effectively when taught in a language they understand well. Ojetunde (2012) asserted that mother tongue instruction during the formative years enables children to explore their environment naturally, develop reasoning abilities, communicate freely, and build self-confidence. Similarly, Kioko (2015) emphasized that learners benefit significantly from the use of home language during early grade instruction because it facilitates comprehension and cognitive development. In Mathematics education specifically, language serves as the vehicle through which mathematical ideas, symbols, and operations are communicated. Abubakar et al. (2015) argued that learners understand and express mathematical concepts more effectively through a familiar language, thereby making mother tongue an important instructional tool in Mathematics classrooms.

Despite the numerous advantages associated with the use of mother tongue in education, several challenges hinder its effective implementation in Nigerian schools. One major challenge is the lack of adequate instructional materials written in indigenous languages. Effective teaching requires the availability of textbooks, charts, and other learning resources in the language of instruction. However, many Nigerian languages lack sufficient educational materials for teaching Mathematics. Obioma (2011) also identified poor awareness and inadequate teacher preparedness as significant barriers to the implementation of mother tongue instruction. In addition, linguistically heterogeneous classrooms present another major challenge. Aguiyi (2012) observed that many classrooms in urban areas consist of pupils from different ethnic and linguistic backgrounds, making it difficult for teachers to adopt a single indigenous language as the medium of instruction. Another issue relates to teachers' perceptions and attitudes toward the use of mother tongue in teaching Mathematics. Teachers occupy a central position in curriculum implementation and classroom instruction; therefore, their perceptions significantly influence instructional practices and educational outcomes. Teachers' perceptions encompass their beliefs, attitudes, judgments, and interpretations regarding teaching methods, instructional policies, and classroom experiences. Studies by Eugene and David (2017), Mohammed, Faruk, Mustapha, and Muktar (2015), and Edu and Edu (2013) highlighted the critical role teachers' perceptions play in instructional decision-making and classroom effectiveness. Where teachers perceive mother tongue instruction positively, they are more likely to implement it effectively. Conversely, negative perceptions may hinder its adoption and effectiveness. The prospects associated with the use of mother tongue in teaching Mathematics are numerous. Mother tongue instruction has the potential to improve pupils' comprehension, classroom interaction, participation, retention, and academic performance. It also promotes inclusiveness and reduces the anxiety often associated with learning Mathematics through a foreign language. Furthermore, pupils taught in their native language are more likely to develop positive attitudes toward Mathematics and exhibit greater confidence in solving mathematical problems. However, the extent to which these prospects can be realized depends largely on factors such as teachers' competence, availability of instructional resources, government support, and societal attitudes toward indigenous languages. Several empirical studies have examined the influence of mother tongue on Mathematics instruction at different educational levels. Aliñab et al. (2018) investigated the impact of mother tongue as the medium of instruction in teaching Mathematics among primary school pupils in the Philippines. Using a descriptive research design involving Mathematics achievement tests, interviews, and document analysis, the study found that pupils performed better in Mathematics when



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taught in their first language. Similarly, Abubakari (2015) examined the effect of Hausa language on junior secondary school students' performance in Mathematics in Katsina State, Nigeria. The study revealed a significant improvement in students' academic performance after instruction was delivered in Hausa language. The persistent poor academic performance of pupils in Mathematics has remained a major concern to educators, parents, curriculum planners, and government agencies in Nigeria. Mathematics occupies a central position in the educational system because it serves as the foundation for scientific, technological, and economic advancement. Despite its importance, pupils at the primary school level continue to demonstrate low achievement and poor understanding of mathematical concepts. Reports from the West African Examinations Council (WAEC) Chief Examiners' Report (2022) revealed consistent poor performance of students in Mathematics, indicating serious deficiencies in learners' comprehension, problem-solving ability, and application of mathematical concepts. Although these reports are mostly based on secondary school examinations, the roots of such poor performance can often be traced to weak mathematical foundations developed during the primary school years. Several factors have been identified as contributing to pupils' poor performance in Mathematics. These include poor mastery of the language of instruction, low interest in the subject, inability to retain learned concepts, ineffective teaching methods, and inadequate learning support at the foundational level. Among these factors, the issue of language of instruction appears to be particularly critical because language serves as the medium through which mathematical ideas, concepts, and procedures are communicated in the classroom. Abubakar et al. (2015) observed that many pupils experience difficulty understanding mathematical concepts due to inadequate comprehension of the language used for instruction. Similarly, Kioko (2015) noted that the use of unfamiliar languages in classroom instruction negatively affects learners' understanding and academic achievement, particularly at the early stages of education.

In Nigeria, English language remains the dominant medium of instruction despite the multilingual nature of the country and the existence of numerous indigenous languages spoken by learners. Although the National Policy on Education recommends the use of mother tongue or the language of the immediate environment at the lower primary level, the implementation of this policy has remained inadequate in many schools. The researcher observed that the use of mother tongue in teaching Mathematics is not adequately encouraged in most Nigerian primary schools, especially in urban centres such as Ilorin where classrooms are often linguistically diverse. Consequently, many pupils are compelled to learn abstract mathematical concepts through a language they do not fully understand, thereby limiting effective comprehension and participation in classroom activities. Furthermore, indigenous Nigerian languages have gradually been marginalized within the formal educational system due to the dominance of English language inherited from colonial administration. As a result, many pupils struggle with the interpretation of mathematical vocabulary, symbols, and word problems, leading to misconceptions, poor retention, and negative attitudes toward Mathematics. Research evidence has shown that pupils at the primary school level often encounter difficulties in translating mathematical problems into meaningful understanding because of language barriers. This situation has continued to hinder the achievement of educational goals in Mathematics instruction. Despite the recognized importance of mother tongue instruction in enhancing comprehension and learning outcomes, its implementation faces several challenges such as inadequate instructional materials, lack of teacher preparedness, limited policy enforcement, and mixed-language classrooms. At the same time, the use of mother tongue presents significant prospects for improving pupils' understanding, participation, confidence, and achievement in Mathematics. However, the extent to which these problems and prospects are perceived by primary school teachers, who are the major implementers of instructional policies, remains unclear in the context of Ilorin, Nigeria. Although previous studies have established the effectiveness of mother tongue instruction in improving learners' achievement in Mathematics, many of these studies focused primarily on students' academic performance with limited attention to teachers' perceptions regarding the problems and prospects associated with its implementation. In addition, most previous studies were conducted outside Ilorin or in different educational contexts. Therefore, there is a need to investigate the problems and prospects of using mother tongue for teaching Mathematics as perceived by primary school teachers in Ilorin, Nigeria. This study is therefore designed in order to provide empirical evidence on teachers' perceptions regarding the effectiveness, challenges, and possibilities associated with the use of mother tongue in Mathematics instruction at the primary school level.



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Objectives of the Study

The main purpose of this study was to find out the prospects and problems associated with the use of mother-tongue in teaching mathematics as perceived by primary school teachers in Ilorin, Nigeria. Specifically, the study;

1. Investigated the prospects of using mother-tongue in teaching primary school mathematics as perceived by teachers in Ilorin.
2. Examined the problems facing the use of mother-tongue in teaching primary school mathematics as perceived by teachers in Ilorin.
3. Find out the areas of improvement (way forward) on the use of mother tongue in teaching primary school Mathematics in Ilorin.

Research Questions

1. What are the primary school teachers' perceptions on the prospects of using mother-tongue in teaching Mathematics in primary schools in ilorin?
2. What are the primary school teachers' perceptions of the problems facing the use of mother-tongue in teaching primary school Mathematics in Ilorin, Nigeria?
3. What are the areas of improvement (way forward) on the use of mother tongue in teaching primary school Mathematics in Ilorin?

Methodology

This study was descriptive of the survey type. Descriptive research involves systematic attempt to describe the characteristics or perception of a given population, area of interest factually to ensure meaningful description of a situation. The adoption of this research type was because the study described the perceptions of a given population. The population of the study comprised all primary school teachers in Ilorin, Kwara State, Nigeria. The target population consists of all Mathematics teachers in basic 3-6 in primary schools in Ilorin, Kwara State. Simple random sampling technique was used to select 59 mathematics teachers across the primary schools in Ilorin, Kwara State. The research instrument used for data collection in this study was a researcher developed questionnaire entitled: Prospects and Problems of Using Mother-Tongue in Instruction Questionnaire (PPUMIQ). The PPUMIQ was used to find out the prospect and problems of using mother-tongue in teaching primary school mathematics as perceived by teachers in Ilorin, Kwara State, Nigeria. The responses are rated on a four-point likert scale; strongly agree = 4, agree = 3, disagree = 2, strongly disagree = 1. The PPUMIQ was given to three experienced lecturers, one from the field of mathematics education and two from test and measurement, from Faculty of Education, University of Ilorin and two primary school mathematics teachers for face and content validity. These experts look at the contents, scope of coverage, ambiguity and vagueness of expression. They also checked among other things, the suitability and language clarity of the items measuring the specific tasks that was designed to measure. All the validators thoroughly scrutinized each item in relation to the objectives of the study. In other to ascertain the reliability of the instrument, the questionnaire was administered to ten primary school teachers outside Ilorin and the gathered data was statistically analysed using Cronbach Alpha which indicated a reliability score of 0.79. The PPUMIQ was administered to the 59 teachers according to the points assigned to each item respectively (that is 4, 3, 2 and 1). The researchers personally retrieved the entire questionnaire from the teacher respondents. The three research questions raised by the study were answered by descriptive statistics of mean and standard deviations.

Presentation of Results

Research Question 1: What are the prospects of using mother-tongue in teaching primary school Mathematics as perceived by teachers?

Table 1:

Mean Ratings on Prospects of Using Mother Tongue in Teaching Mathematics

Statements on Prospects of Using Mother Tongue	M	SD	Decision
1. Pupils easily understand mathematical concepts when mother-tongue is use for teaching.	3.17	0.79	Agreed
2. Use of Mother-tongue for teaching improves the overall performance of pupils in mathematics.	2.85	0.63	Agreed

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3. Pupils' engagement and interest in mathematics increase when mother-tongue is used for instruction.	3.24	0.81	Agreed
4. Pupils appreciate their native language and culture when Mother-tongue is used for teaching mathematics	3.06	0.82	Agreed
5. Mother-tongue allows effective communication of instruction based on individual pupils' needs.	2.95	0.71	Agreed
6. Use of mother-tongue helps bridge the gap between abstract mathematical concepts and real-life applications	2.81	0.69	Agreed
7. Pupils showed increased enthusiasm for exploring advanced topics in mathematics when learned in their mother tongues.	3.23	0.75	Agreed
8. The use of the mother tongue in teaching mathematics helps pupils to have a strong foundation in their mother tongue.	2.81	0.67	Agreed
Grand mean	3.01	0.73	Agreed

The results presented in Table 1 show the mean ratings and standard deviation scores of primary school teachers on the prospects of using mother tongue in teaching Mathematics. The findings revealed that all the items recorded mean scores above the benchmark value, indicating that the respondents generally agreed that the use of mother tongue has positive prospects for teaching Mathematics at the primary school level. Specifically, the respondents agreed that pupils easily understand mathematical concepts when mother tongue is used for teaching ($M = 3.17$, $SD = 0.79$). This suggests that the use of a familiar language enhances pupils' comprehension and understanding of mathematical ideas. The teachers also agreed that pupils' engagement and interest in Mathematics increase when mother tongue is used for instruction ($M = 3.24$, $SD = 0.81$), indicating that pupils participate more actively and develop positive attitudes toward the subject when taught in a language they understand well. Furthermore, the respondents agreed that the use of mother tongue improves pupils' overall performance in Mathematics ($M = 2.85$, $SD = 0.63$), allows effective communication based on pupils' individual needs ($M = 2.95$, $SD = 0.71$), and helps bridge the gap between abstract mathematical concepts and real-life applications ($M = 2.81$, $SD = 0.69$). These findings imply that mother tongue instruction promotes meaningful learning and facilitates better interaction between teachers and pupils in the classroom. The teachers also agreed that pupils appreciate their native language and culture when mother tongue is used for teaching Mathematics ($M = 3.06$, $SD = 0.82$), suggesting that the use of indigenous languages in instruction contributes to cultural preservation and identity development among learners. Similarly, respondents agreed that pupils show increased enthusiasm for exploring advanced mathematical topics when lessons are delivered in their mother tongue ($M = 3.23$, $SD = 0.75$). This indicates that mother tongue instruction can boost learners' confidence and motivation in Mathematics learning and also strengthens pupils' language development and literacy skills. The overall mean score of 3.01 with a standard deviation of 0.73 indicates that teachers generally perceived the use of mother tongue in teaching primary school Mathematics as highly beneficial. The relatively low standard deviation further suggests consistency in the opinions of the respondents. Therefore, the findings imply that primary school teachers in Ilorin, Nigeria perceive the use of mother tongue as a valuable instructional approach capable of enhancing pupils' comprehension, participation, academic performance, and cultural appreciation in Mathematics learning.

Research Question 2: What are the problems facing the use of mother-tongue in teaching Mathematics as perceived by primary school teachers in Ilorin.

Table 2:

Mean Ratings on Problems encountered when Using Mother-Tongue in Teaching Mathematics

Problems Encountered when Using Mother-Tongue	M	SD	Rank
1. Inadequate standardized terminology in the mother tongue for mathematical concepts.	2.94	0.80	Agreed



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2. Difficulty in finding appropriate teaching resources and materials in the mother tongue.	3.31	0.81	Agreed
3. Potential disconnects between mother tongue instruction and standardized assessments.	2.91	0.94	Agreed
4. Lack of training or professional development opportunities for effectively using the mother tongue in mathematics instruction	3.06	0.82	Agreed
5. Resistance from parents or stakeholders who perceived mother-tongue instruction as hindering English language proficiency	3.17	0.79	Agreed
6. Limited availability of educational technology and digital resources that support mother-tongue instruction	3.25	0.90	Agreed
7. I am balancing the use of my mother tongue with the need to teach mathematics skills simultaneously.	2.41	0.66	Disagreed
8. Difficulty in creating assessments and tests that effectively evaluate students' understanding when taught in the mother tongue.	2.91	0.78	Agreed
Grand mean	3.00	0.81	Agreed

The results presented in Table 2 show the mean ratings and standard deviation scores of primary school teachers on the problems associated with the use of mother tongue in teaching Mathematics. The findings revealed that the respondents agreed that several challenges hinder the effective use of mother tongue in Mathematics instruction at the primary school level. Specifically, the respondents agreed that difficulty in finding appropriate teaching resources and instructional materials in the mother tongue constitutes a major problem ($M = 3.31$, $SD = 0.81$). This suggests that the lack of textbooks, charts, and other learning materials written in indigenous languages poses a serious challenge to teachers during classroom instruction. The respondents also agreed that the limited availability of educational technology and digital resources that support mother-tongue instruction is another significant problem ($M = 3.25$, $SD = 0.90$). This implies that the absence of technological support limits the effective implementation of mother tongue instruction in Mathematics classrooms.

Furthermore, the teachers agreed that resistance from parents and stakeholders who perceive mother-tongue instruction as a barrier to English language proficiency is a major challenge ($M = 3.17$, $SD = 0.79$). This finding indicates that societal preference for English language education negatively affects the acceptance and implementation of indigenous language instruction in schools. Similarly, respondents agreed that lack of training and professional development opportunities for teachers on how to effectively use mother tongue in Mathematics instruction is a significant problem ($M = 3.06$, $SD = 0.82$). This suggests that many teachers may not possess adequate pedagogical skills and strategies for teaching Mathematics using indigenous languages. The respondents also agreed that inadequate standardized terminology in the mother tongue for mathematical concepts poses a challenge ($M = 2.94$, $SD = 0.80$). This indicates that some indigenous languages may lack appropriate equivalents for certain mathematical terms and symbols, thereby making effective communication of mathematical ideas difficult. In addition, respondents agreed that there are potential disconnects between mother-tongue instruction and standardized assessments ($M = 2.91$, $SD = 0.94$), as well as difficulties in creating assessment tools that effectively evaluate pupils' understanding when taught in the mother tongue ($M = 2.91$, $SD = 0.78$). These findings suggest that assessment practices may not adequately align with indigenous language instruction. The grand mean score of 3.00 with a standard deviation of 0.81 indicates that teachers generally agreed that there are considerable problems facing the use of mother tongue in teaching Mathematics in primary schools in Ilorin, Nigeria. The relatively low standard deviation further suggests consistency in the respondents' opinions. Therefore, the findings imply that although mother tongue instruction has notable educational benefits, its effective implementation is constrained by inadequate

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instructional resources, lack of teacher training, societal resistance, insufficient technological support, and challenges related to assessment and mathematical terminology.

Research Question 3: What are the areas of improvement (way forward) on the use of mother tongue in teaching primary school Mathematics in Ilorin?

Table 3:

Mean Ratings on Way Forward on the use of Mother-Tongue in Teaching Mathematics

Statements on Way Forward on the use of Mother-Tongue	M	SD	Decision
1. Provision of specialized professional development for teachers on use of mother-tongue in teaching.	3.36	0.88	Agreed
2. Developing a curriculum that seamlessly integrates the mother-tongue with English instruction in mathematics.	3.06	0.82	Agreed
3. Regular assessments in the mother tongue could be a practical way to measure students' mathematical understanding and language proficiency simultaneously.	2.56	0.73	Agreed
4. Establishing a support network among teachers, parents, and community members to promote the use of the mother tongue for teaching	3.10	0.95	Agreed
5. Encouraging the development of locally sourced teaching materials in the mother tongue would contribute to a more culturally inclusive mathematics classroom.	3.17	0.83	Agreed
6. Research and collaboration among educators on effective mother tongue integration is crucial for advancing this approach in teaching primary school pupils.	3.30	0.81	Agreed
7. Diverse linguistic and cultural backgrounds of pupils in Ilorin should be considered when making decisions about incorporating the mother tongue in teaching mathematics.	2.74	0.78	Agreed
8. Creating an inclusive learning environment that respects and values the cultural heritage of students using their mother tongue in mathematics instruction.	2.64	0.65	Agreed
9. Understanding local cultural norms and traditions can help tailor mathematics lessons that resonate with pupils.	2.64	0.61	Agreed
Overall mean and Standard Deviation	2.95	0.78	Agreed

The results presented in Table 3 show the mean ratings and standard deviation scores of primary school teachers on the possible ways of improving the use of mother tongue in teaching Mathematics. The findings revealed that all the items recorded mean scores above the criterion mean, indicating that the respondents agreed with the suggested measures for improving the implementation of mother-tongue instruction in primary school Mathematics classrooms. Specifically, the respondents strongly agreed that the provision of specialized professional development and training for teachers on the use of mother tongue in teaching is an important way forward ($M = 3.36$, $SD = 0.88$). This suggests that equipping teachers with appropriate instructional strategies and pedagogical skills would enhance the effective use of indigenous languages in Mathematics instruction. Similarly, the respondents agreed that research and collaboration among educators on effective mother tongue integration are crucial for advancing this instructional approach ($M = 3.30$, $SD = 0.81$). This implies that continuous research and professional collaboration would help improve instructional practices and provide practical solutions to challenges associated with mother-tongue instruction. The teachers also agreed that encouraging the development of locally sourced teaching materials in the mother tongue would contribute to a more culturally inclusive Mathematics classroom ($M = 3.17$, $SD = 0.83$). This finding indicates that the availability of instructional materials written in indigenous languages could enhance pupils' understanding and classroom participation. Furthermore, respondents agreed that establishing a support network among teachers, parents, and community members would promote the use of



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mother tongue for teaching Mathematics ($M = 3.10$, $SD = 0.95$). This suggests that community involvement and stakeholder support are essential for the successful implementation of mother-tongue instruction. The findings also revealed that respondents agreed that the diverse linguistic and cultural backgrounds of pupils in Ilorin should be considered when making decisions about incorporating mother tongue into Mathematics instruction ($M = 2.74$, $SD = 0.78$). This suggests that educational policies and classroom practices should accommodate the multilingual nature of the learning environment. Similarly, the respondents agreed that creating an inclusive learning environment that respects and values pupils' cultural heritage through the use of mother tongue is important ($M = 2.64$, $SD = 0.65$). Teachers also agreed that understanding local cultural norms and traditions can help in designing Mathematics lessons that are meaningful and relatable to pupils ($M = 2.64$, $SD = 0.61$). The overall mean score of 2.95 with a standard deviation of 0.78 indicates that teachers generally agreed on the various strategies that could improve the use of mother tongue in teaching primary school Mathematics in Ilorin, Nigeria. The relatively low standard deviation further suggests consistency in the respondents' opinions. Therefore, the findings imply that improving mother-tongue instruction in Mathematics requires adequate teacher training, curriculum development, provision of instructional materials, stakeholder collaboration, cultural inclusiveness, and continuous research efforts to enhance effective implementation in primary schools.

Discussion of Findings

The findings of this study revealed that primary school teachers in Ilorin, Nigeria generally perceived the use of mother tongue in teaching Mathematics as highly beneficial. The overall mean score of 3.01 indicates that teachers strongly believe that mother-tongue instruction enhances pupils' comprehension, participation, academic performance, and cultural appreciation in Mathematics learning. This finding implies that teachers recognize the important role of indigenous languages in facilitating effective teaching and learning of Mathematics at the primary school level. The finding agrees with the study of Aliñab et al. (2018), who reported that pupils performed significantly better in Mathematics when taught using their first language. Their study showed that mother-tongue instruction improved learners' understanding and participation because pupils could easily relate mathematical concepts to familiar linguistic expressions. Similarly, the finding supports Abubakari (2015), who found that students taught Mathematics in Hausa language demonstrated better academic performance than those taught using English language. The author concluded that indigenous language instruction promotes meaningful learning and better retention of mathematical concepts.

The result is also consistent with Kioko (2015), who emphasized that children learn more effectively in their home language, especially during the formative years of education. According to the author, mother-tongue instruction promotes classroom interaction, cognitive development, and learners' confidence. Likewise, Ojetunde (2012) maintained that the use of mother tongue in early education enhances learners' reasoning ability, communication skills, and self-confidence, all of which contribute positively to academic achievement. The finding further aligns with UNESCO (2016), which advocated the use of indigenous languages in primary education on the grounds that children understand concepts better when taught in a familiar language. However, the finding disagrees with the position of Bamgbose (2014), who argued that excessive dependence on mother tongue instruction may hinder pupils' proficiency in English language, which remains the official language of instruction and assessment in Nigeria. Similarly, Adegbija (2011) expressed concerns that the use of indigenous languages in multilingual societies may create communication barriers and instructional difficulties in linguistically mixed classrooms. Okebukola (2015) also observed that some parents and teachers prefer English language because of its perceived economic and social advantages, thereby showing resistance toward the implementation of mother-tongue instruction in schools. Another finding of this study revealed that teachers generally agreed that there are considerable problems facing the use of mother tongue in teaching Mathematics in primary schools in Ilorin, Nigeria, as indicated by the grand mean score of 3.00. The finding suggests that despite the educational benefits associated with mother-tongue instruction, its effective implementation is hindered by several challenges such as inadequate instructional materials, lack of teacher training, societal resistance, insufficient technological support, and difficulties associated with assessment and mathematical terminology. This finding agrees with Obioma (2011), who identified inadequate instructional resources and poor implementation strategies as major obstacles to the use of mother tongue in Nigerian schools. Similarly, Aguiyi (2012) reported that linguistically heterogeneous classrooms make it difficult for teachers to effectively implement indigenous language instruction, especially in urban areas where pupils come from diverse ethnic backgrounds. The finding also corroborates the work of Benson (2017), who observed that many indigenous languages



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lack standardized terminologies for scientific and mathematical concepts, thereby posing difficulties for effective classroom communication. The finding is further supported by Mohammed et al. (2015), who noted that many teachers lack adequate professional training on how to effectively integrate mother tongue into classroom instruction. In the same vein, UNESCO (2016) highlighted that inadequate government support, poor policy implementation, and insufficient technological resources continue to hinder effective mother-tongue education in many developing countries. In contrast, the finding disagrees with the submission of Cummins (2000), who argued that the major challenge facing mother-tongue instruction is not the language itself but poor educational planning and lack of political commitment. The author maintained that where adequate support structures are provided, mother-tongue instruction can be effectively implemented without significant difficulties. Similarly, Heugh (2011) contended that many of the perceived challenges associated with mother-tongue instruction are often exaggerated due to negative societal attitudes toward indigenous languages rather than actual pedagogical limitations.

In addition, the result of the study revealed that teachers generally agreed on various strategies that could improve the use of mother tongue in teaching primary school Mathematics in Ilorin, Nigeria, as indicated by the overall mean score of 2.95. The teachers agreed that adequate teacher training, curriculum development, provision of instructional materials, stakeholder collaboration, cultural inclusiveness, and continuous research efforts are necessary for improving the implementation of mother-tongue instruction. The finding agrees with Eugene and David (2017), who emphasized that continuous professional development is essential for equipping teachers with the skills needed to effectively implement innovative instructional approaches such as mother-tongue instruction. Similarly, Edu and Edu (2013) noted that curriculum integration and teacher support mechanisms are critical for successful language policy implementation in schools. The finding also supports Benson (2017), who advocated for the development of locally relevant teaching materials and collaborative partnerships among schools, communities, and policymakers to strengthen indigenous language education. The result also aligns with the recommendations of UNESCO (2016), which emphasized the need for culturally inclusive educational practices, community participation, and government investment in indigenous language instructional resources. Likewise, Kioko (2015) stressed that effective implementation of mother-tongue instruction requires supportive educational policies, regular teacher training, and the development of appropriate learning materials in local languages. However, the finding contrasts with the opinion of some scholars who believe that improving English language instruction should take priority over investment in indigenous language education. For instance, Adegbiya (2011) argued that greater emphasis on English language proficiency may better prepare pupils for global competitiveness and higher educational opportunities. Similarly, Bamgbose (2014) questioned the practicality of fully implementing mother-tongue instruction in multilingual societies due to issues of language diversity and limited educational resources. Despite these opposing views, the present study demonstrates that primary school teachers in Ilorin perceive mother-tongue instruction as beneficial and capable of improving Mathematics learning when adequate support systems are provided. The findings therefore suggest that effective implementation of mother-tongue instruction requires collaborative efforts from teachers, policymakers, parents, and educational stakeholders to address existing challenges and maximize its educational benefits

Conclusion

This study investigated the problems and prospects of using mother tongue for teaching Mathematics as perceived by primary school teachers in Ilorin, Nigeria. The findings of the study revealed that teachers generally perceived the use of mother tongue in teaching Mathematics as highly beneficial to pupils' learning outcomes. The study established that mother-tongue instruction enhances pupils' comprehension of mathematical concepts, increases classroom participation and interest, improves academic performance, and promotes appreciation of indigenous language and culture. The findings therefore suggest that the use of mother tongue provides a meaningful and learner-friendly approach to the teaching of Mathematics at the primary school level. Despite these notable prospects, the study also revealed that several challenges hinder the effective implementation of mother-tongue instruction in Mathematics classrooms. These challenges include inadequate instructional materials in indigenous languages, lack of standardized mathematical terminology, insufficient teacher training, limited technological support, societal preference for English language, and difficulties associated with assessment practices. These constraints indicate that although teachers recognize the value of mother-tongue instruction, effective implementation requires adequate institutional, material, and policy support.



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Furthermore, the study identified several strategies that could improve the use of mother tongue in teaching primary school Mathematics. These include regular professional development for teachers, curriculum integration of indigenous languages and English language, development of locally relevant instructional materials, stakeholder collaboration, cultural inclusiveness, and continuous research on effective implementation practices. The findings suggest that successful implementation of mother-tongue instruction depends largely on collaborative efforts among teachers, parents, policymakers, and educational authorities. The study concluded that the use of mother tongue in teaching primary school Mathematics has significant educational benefits and the potential to improve pupils' understanding and achievement in Mathematics. However, for these benefits to be fully realized, the identified challenges must be adequately addressed through effective educational policies, teacher capacity building, provision of instructional resources, and sustained support from relevant stakeholders.

Recommendations

Based on these findings, the following recommendations are made:

1. Government and educational stakeholders should develop and distribute adequate Mathematics teaching materials such as textbooks, charts, and digital resources written in indigenous languages to support effective classroom instruction at the primary school level.
2. Regular workshops, seminars, and in-service training should be organized for primary school Mathematics teachers to equip them with the necessary pedagogical skills and strategies for effectively integrating mother tongue into Mathematics instruction.
3. The curriculum should be reviewed to encourage a balanced integration of mother tongue and English language in Mathematics teaching, while education policymakers should ensure proper implementation of language-in-education policies and provide support for bilingual instructional practices in primary schools.

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