

THE RELEVANCE OF MOTHER TONGUE (MT) AS A LANGUAGE OF INSTRUCTION IN MATHEMATICS LEARNING: THE TIV LANGUAGE IN FOCUS

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Abstract

The paper considered the relevance of Mother Tongue (MT) as a language of instruction in teaching/learning of mathematics with a focus on Tiv language. The relevance of the use of MT was reviewed worldwide. In Nigeria, the use of MT in teaching/learning was given recognition quite early by the Christian Missionaries that introduced Western education to us but the elites preferred the use of English language as a kind of pride in our educational system. The use of the second language instead of the first language in teaching/ learning has been identified as one of the causes of the students' poor achievement. The long term poor achievement of Nigeria students especially in mathematics has been linked to this truth. Though Nigeria does not have a very clear, effective and explicit national language policy on the language of instruction, it is obvious from the pieces of the policy that MT can be used as a language of instruction at the basic education level. Tiv Language is therefore recommended for teaching/ learning mathematics especially that the Tiv people have their traditional Mathematics before the introduction of Western Education. more efforts should be made to translate English words, terms vocabularies and symbols in to Tiv Language so as to make the students familiar with Mathematics.

Key Words: *Mother Tongue, Language of instruction, Mathematics, Teaching/Learning, Tiv Language.*

Introduction

The language used to convey mathematical ideas to students has become a topic of increased concern to mathematics educators in recent years, across the globe. The reasons for this concern vary from country to country. In United States, this concern has risen in part because of a continuity growth in the number of students in mathematics classes who have a limited proficiency in English (Gilberto, 2008). In Asian countries like Korea, it is as a result of the quest for technological development (Anyagh, O'kwu & Imoko, 2016). In Africa the concern is as a result of students' poor achievement in mathematics and mathematics related courses (Anyagh, O'kwu & Imoko, 2016). This is because inadequate grasp of the language of instruction is a major source of under-achievement in school mathematics (Anyagh, Imoko and Anyor, 2017).

The United Nation Educational, Scientific and Cultural Organization (UNESCO) in 1951 agreed that the best medium for teaching a child is his mother tongue (MT). Psychologically, it is the system of meaningful signs that in his mind works automatically for expression and understanding. Educationally, the child learns more quickly through it than through an unfamiliar linguistic medium (Adesoji & Akpan, 1991). In 1983, UNESCO warns that no language can take the place of the mother tongue in education and no educational system can afford to disregard it without serious detriment to the mental and social development of the child. Also UNESCO position paper on education in multilingual world said that the more children have their own language as the main medium of teaching, the better they also understand the dominant language provided they have good teaching in it

(UNESCO, 2003).

With all these word discussion on the use of mother tongue in education, Nigeria does not have a well articulated and explicit national language policy that can be found in one document. However the country has a language policy which is sometimes, explicitly and, sometimes obliquely, stated in:

- a. Sections of the National Policy on Education (NPE) Lagos, Federal Ministry of Information 1977 revised 1981 and 2004.
- b. Chapter x special issues in Nigeria politics entitled: National Language of the Government views and comments on the findings and recommendations of the political Bureau 1987.
- c. Section 19(4); 21; 53; and 95 of the constitution of the Federal Republic of Nigeria 1989.
- d. The cultural policy of Nigeria 1988 (Emenanjo, 2010).

All these are attempts by the Nigerian government to establish a functional language policy in the country. In education the NPE has explicitly spelt out the National Language Policy in respect of education in the country. In section 2 paragraphs 11, sub 3 which states that; ‘... government will ensure that the medium of instruction will be principally the mother-tongue or the language of the immediate community (LIC)’. Also in section 3 paragraphs 15 sub 4 says “government will see to it that the medium of instruction in the primary school is initially the mother tongue or the language of the immediate community. This shows that the Nigerian government has put in place the needed policy statements that will back up the teaching in MT at the basic education programme, hence giving the bases for the introduction of teaching in MT in Nigerian schools.

Historically, education in MT was introduced in Nigeria by the Christian Missionaries just before the middle of the nineteenth century. This was because most of the missionaries believed that the African child was best taught in his native language, (Hair in Oladele1998). This shows that the teaching and learning in indigenous languages received much genuine attention in those early days of western education in the country.

Unfortunately the efforts were frustrated by the then Nigerian elites, and their position was gradually accepted by government, perhaps because they controlled the government of the nation, as it is seen in sir Abubakar Tafawa Balewa’s statement on 1st October 1960 “English will continue to be our official language for a long time” (Radio Benue broadcast, 1st October 2010)Hence English language was accorded more prominence. The aim of UBE programme and the 9-year Basic Education Curriculum (9-YBEC) are on the need to attain the sustainable development goals (MDGS) by 2020 and the critical targets of the National Economic Empowerment and Development Strategies (NEEDS) which can be summarized as: value orientation, poverty eradication, job creation wealth generation and using education to empower the people. Closely related to this, is the focus of the revised National Mathematics Curriculum for Basic Education in Nigeria. All these are only possible with good student’s achievement in mathematics. Unfortunately, since English Language took a place of pride in our educational system, performance of students in mathematics has continued to be in a deplorable state. Acordent to Zalmon and Wonu (2017) Nigerian students have been showing abysmal performance in Mathematics since 1991-2016 This poor performance in mathematics explains the inability of the country to develop technologically, since mathematics is the bedrock of technology. This poor performance by our students in mathematics can be associated with among other things the language of instruction in our

school system. It is believed that when children learn in their MT they demonstrate greater manipulative ability, manual dexterity and mechanical comprehension (Emananyo, 2010).

Mathematics Achievement and Language of Instruction

Some theorists (example, Whorf, 1956) have suggested that language determines and defines thought. Although researchers have long recognized the vital role that language plays in mathematics achievement (Aiken, in Anyagh, 2012), they have not always acknowledged its equally important role in the process of acquiring mathematical concepts and skills.

Linguists use the term language register to refer to the meanings that serve a particular function in the language, as well as the words and structures that convey those meanings. To Kgomotso (2008) mathematics register, therefore, can be defined as the meanings belonging to the natural language used in mathematics. A mathematics register is more precise than the natural language itself because the meanings of the terms are much narrower in scope. He added that Mathematical terms give rise to an almost totally none redundant and relatively unambiguous language. Holliday in Gilberto (2008) has suggested that a mathematics register has the following components:

- i. Natural language words reinterpreted in the context of mathematics, such as set, point, field, column, sum, difference, even (number), random, product;
- ii. Locations such as square, on the hypotenuse and least common multiple;
- iii. Terms created from combinations of natural language words, such as feedback and output and input and
- iv. Terms formed from combining elements of Greek and Latin words, such as parabola, denominator, coefficient and asymptotic.

In addition to vocabulary, a mathematics register also includes styles of meaning and ways of presenting arguments within the context of mathematics. These processes required new structures, which are most often borrowed from specialized forms in the natural language. Example of expressions adopted from English includes:

- i. the area under the curve;
- ii. the sum of the first n terms of the sequence;

Tiv as a Language of Instruction

The term Tiv assumes three different meanings at different places. In some quarters, Tiv refers to the ancestral father of the Tiv race of Central Nigeria. To others, Tiv refers to the ethnic group which is a descendant of Tiv. Lastly, it refers to the language spoken by the Tiv race. Tiv belongs to the Niger-Congo language family and can be further classified as Benue – Congo language (Udu, 2009)

The Tiv people are predominantly found in Central Nigeria and a significant number in the Republic of Cameroon. Udu (2009) reports that the Tiv occupy over thirty three local government areas across Benue, Nassarawa, Taraba, Cross-River and Plateau states. Tiv language is today spoken by well over 3 million people. Considering the geographical spread and the large number of speakers, Tiv language is indeed a very important language and the Tiv people are the 4th largest tribe in Nigeria (Ame, 2013).

Tiv language is used for interpersonal communication, trade and religious worship. It can also be said to be a language of the media, since it is broadcast on five different radio states across the country. However, the Tiv language despite its inclusion by government to be used for academic purpose has not enjoyed the prestige, yet. This may be as a result of no

empirical evidence of its effects on students when used for academic purpose.

Traditionally, the Tiv people have their own form of Mathematics which is as old as the language itself. Tiv people are predominantly farmers and counting of their farm products shows the introduction of the concept of numbers and numeration. For example if a Tiv man asks his son (“Vekahasule la ager a me?”) how may lines of heaps did they make? This question introduces the child to the concept of numbers and numerations by counting the lines. It also introduces the child to the geometrical concept of lines. Other geometrical concepts such as circle, radius, perimeter, etc. are thought to children through the construction of huts (round or rectangular). The size of the hut constructed depends on the purpose for which it is made. This type of construction introduces the child to mathematic concepts like area, volume and proportion. Mathematical concepts like statistics, set, etc. are introduced by grouping of farm products like crops and animals by their species and type. It is, therefore, clear that all aspects of Mathematics; from numbers and numeration to geometry, algebra up to statistics all exist in Tiv traditional Mathematics. However they are all in an informal way and the method of teaching is practical, with the mother-tongue as a language of instruction. This exists in Tiv land till now.

It is true that most mathematical concept have not been translated in Tiv language. However, lexical borrowing and coinage which have found their way and are often used in the speech behavior of the people can be adopted. Names, words and expressions are often created or coined for objects and concepts in various languages.

It is true that Mathematics has its own diction, but Tiv language can also be used if efforts are made to translate the English words or mathematic concepts with all its attendant meaning to ensure that valuable aspects of the meanings are not lost (Anyagh, 2012). English language is replete with borrowed words from Latin (Shoja, 2009), and as such, Tiv language, if used will not be the only language borrowing from other languages-especially where it is inadequate for Mathematics teaching.

The use of mother-tongue in the teaching of Mathematics will bring about familiarity in the learners. It is obvious that Tiv language can conveniently accommodate Mathematics and technical ideals. A non-literate Tiv man for instance, has already reduced such technical words like: Mato (Motor), Semetu (cement), Sukuderaba (Screwdriver), waya (wire), hama (hammer) to Tiv vocabulary. In the same manner it is logical and educationally not out of place that mathematical terms and concepts can be reduced to the phonological structure of Tiv language, based on verbal association learning conning (Chauhan, 2009) as follows.

English	Tiv
Symbols	Akav
Shape	MluUkwagh
Word Problems	Ayenge A Lyam
Coefficient	Codfishen
Algebra	Ajebela
Expression	Espleshen
Radius	Ledusu
Equation	Ikueshen
Perimeter	Ikyaren I ShaAkpekpe
Regular	Kpiikiki
Sqare	Sikweya
Rectangle	Letago
Trapezium	Tlapezum

Arithmetic	AyengeAtaverga
Mathematics	Ayenge (Matimatiki)
Parallelogram	Palalologlam

This can be followed by adequate explanation of the concepts and mathematical procedures in Tiv language.

Although critics of the mother tongue as a language of instruction in mathematics claim that Mathematical terms and concepts cannot be explained in mother-tongue. However, the argument has been proven wrong. The Ife six-year primary project as reported by Babalola (1991) and the Igbo and Edo study by Ali (2006a) have proved that mother-tongue can be used to teach Mathematics. These studies have shown that the use of foreign mediums of instruction generally constitutes a linguistic barrier to the learner in the learning of Mathematics.

It is, therefore, more justifying if the language of instruction in a formal education at the basic level be mother-tongue. This is because psychologically, the proper development of the children is closely bound with the continued use of the language of their parents, and relations, which forms their socio-linguistic background. It is the language in which they have acquired their first experiences of life; the one in which they dream, think and easily express their feelings and emotions. To separate them from their familiar language as soon as they come to school is like taking them away from their home and putting them among strangers. They could neither understand much of what is taught, nor express themselves at this stage as desired; hence they become tongue tied and the mathematics thought is devoid of meaning nothing than jargon and symbol manipulation. There is mathematics underachievement, anxiety and aversion. This explains why the achievement of Tiv students in Mathematics has continued to decline despite the number of teaching methods adopted. Given this situation there is the need for relevant stakeholders to come to the aid of the Tivchildren by implementing the language policy as statered in the NPE if he is to find education meaningful.

Conclusion

It is therefore clear that children learn better in their mother tongue. Hence if the Tiv child is to find meaning in mathematics and not to look at it as jargon and symbol manipulation, then the language of instruction at lower basic education level in Tiv land should be the Tiv language.

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