IGBO LANGUAGE AS MEDIUM OF INSTRUCTION AND ENHANCEMENT OF RETENTION LEVEL OF PUPILS IN PRIMARY SCHOOL MATHEMATICS

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ABSTRACT: *This study investigated, using quasi-experimental research design, the effect of Igbo Language as medium of instruction on the enhancement of retention level of Primary 3 Pupils in Primary School Mathematics in Delta State Capital Territory (DSCT), Nigeria. The sample consisted of 2,400 Primary 3 pupils from six Primary Schools, in DSCT. Three Primary Schools were randomly assigned to the experimental and control groups, respectively. Three research questions and four null hypotheses guided this study. A validated and reliable instrument, Mathematics Assessment Test Item (MATI), was used to collect data. Difference in Mean Retention Level Scores was subjected to z-test analysis and was significant in favour of the experimental group. Vital recommendations were given to improve the use of Language of the immediate environment of the child as medium of instruction in schools in Nigeria.*

KEYWORDS: Igbo Language; Medium of Instruction; Enhancement of Retention Level; Mathematics; Primary School.

INTRODUCTION

The goals of education are not achievable without a language and the process of imparting knowledge has to be carried out through a language (Aguiyi, 2012) Kuju (1999) in Aguiyi (2012) states that language is the surest way through which people can retain, safeguard knowledge, wisdom and the authentic culture, inherited from their ancestor, as well as; hand them to generation after them. Gomwalk (2000), opines that language regulates all human activities, embodies culture and to understand culture, one must understand and appreciate the language of the culture as an essential medium of cultural transmission. Language, according to Ezeudu (2013), is a means of preserving the people's culture. Umo (2001) in Ezeudu (2013) asserts that language and culture are inseparable and to separate a child from his/her language and culture at an early stage of his/her school or education is to make him/her have no regard for his/her culture. In supporting Umo (2001) in Ezeudu (2013), Olarewaju (2006) insists that using another language other than the mother tongue as a medium of instruction, impairs/inhibits the development of the child's personality and ability. In order to avoid the child's educational problems as enumerated by Umo (2001) in Ezeudu (2013) and Olarewaju (2006), above, the Federal Republic of Nigeria (FRN) (2013) in its National Policy on Education (NPE) states that the medium of instruction in the Primary School shall be the language of the environment for the first three years, while English

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Language shall be taught as a subject, as suggested by Fafunwa, Macaulay and Sokoga(1989).This is, probably, because a child taught in his or her mother tongue stands a chance of having higher understanding of the subject matter and so, gives him or her higher retention level of the learning experiences than the child taught in English Language(Fafunwa et. al,1989).

Retention Level of a pupil or child is the idea or facts he or she has in his or her memory after he or she has been exposed to some learning experiences. The extent of attainment of the objectives of a particular learning experience by a pupil or child is, usually ascertained by finding positive difference between the pupils' pretest and posttest scores. The retention level of the pupil is, therefore, obtained by subtracting the pupils' delayed posttest score from the posttest score. A positive retention level means there is retention of subject matter or facts, while negative retention level implies lost of facts, after a specified period, a week or a month, of exposure to the learning experiences.

Nigeria has about 521 languages belonging to three major language families –Nilo Saharan, Asiatic and Niger Congo (Green, 1996 in Okudo, 2013). Out of about 521 Nigerian Languages, Igbo, Hausa and Yoruba are the three major languages, because they have speakers in excess of 18 million each (Crazier & Blench, 1992). Igbo, Hausa and Yoruba languages belong to Niger Congo language family (Green, 1996 in Okudo, 2013). Besides the three major Nigerian Languages, there are exogenous languages like English, French and Arabic which are foreign to Nigeria (Ikegbunam, 2010). Out of these foreign languages, English is the official language, which has been in Nigeria since 1842, before the coming of the British missionaries (Okudo, 2013). From this point, Okudo affirms that English has increasingly replaced Nigerian Languages and is widely used in business, academics and everyday life activities, especially in the cities; it has been institutionalized because it is the language of Nigerian's colonial masters.

In Nigeria, Primary Education is referred to as the Education given in institutions for children aged 6 to 11years plus; it is universal, compulsory and tuition free (FRN, 2013). It is where the foundations of secondary and tertiary education are laid. Therefore, the selection of the suitable language as medium of instruction is important. This is because, it is generally accepted fact that, a child's learning is severely hampered if he/she does not understand the language of instruction used in the school. This is the problem presently experienced by Nigerian students in Primary, Secondary and Tertiary Institutions, where English Language is the medium of instruction. This problem becomes glaring following the reports of Nigerian students' dismal performances in mathematics and science subjects in examinations at all levels of Education (Igbojinwaekwu, 2013; Igbojinwaekwu and Nneji, 2012; Ali, 1989; Akuezuilo and Chinweoke , 2009; Madualum and Odili, 2006). Despite students' dismal performances in schools, English Language is still used as medium of instruction, because of the problems and dangers of imposing one indigenous language group or the other to all other linguistic groups in a multi-lingual country like Nigeria (Aguiyi, 2012). Another reason is that English is the language of Nigeria colonial masters; it was imposed on the people of Nigeria (Okudo, 2013).

According to Edegu (2009) in Igbojinwaekwu and Nneji (2012), despite the policy of using the language of the environment as medium of instruction in the first three years in the Primary School, as contained in the NPE, no record has shown any school, be it public or private, implementing it,

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except that the language of the environment is taught in primary and secondary schools as a subject. One likely reason of non-implementation of the policy of using the language of the environment as medium of instruction in the first three years in the primary school is that it entails much more than knowing how to speak the language. Teachers may acquire a high level of expertise in spoken Igbo or any other language of the environment and still unable to use it to teach a given subject or fail to use it effectively. Effective instructional use of a language requires weaving together three essential strands of teacher knowledge of the subject matter, the language to be used as medium of instruction and pedagogical knowledge. To this end, Mishra and Koehler (2006) in Morsink ,Hagerman, Heintz, Boyer, Harris, Kereluik and Hartman (2011) opin that what matters more is a teacher's ability to engage in the kind of flexible, adaptive bricolage with new situations that is required for effective pedagogy and to meet students' particular learning needs. Also, a growing body of theory and empirical research (Chai, Koh & Tsai, 2010; Doering, Veletsiana, Scharber & Miller, 2009; Graham, Burgoyne, Canyell, Smith, Clair & Harris, 2009; Guzey & Roehrig, 2009; Koehler, Mishra & Yahya, 2007; Kramarski & Michalsky, 2009; Ricardson , 2009) suggest that for a teacher to have the ability to acquire effective pedagogy to meet students' particular learning needs by effective adapting to a new situation (e.g. Using mother tongue as language of instruction) requires multifaceted and complex training. This, according to Mouza (2009), develops only gradually, through ongoing practice and growing experience.

The emphasis in the NPE by FRN (2013) is on using the language of the environment as medium of instruction for the first three years in the Primary School, but there is no programme in place to give teachers course or training in the use of the language of the environment to enhance their instructional methods. This is why the policy has been difficult to implement.In Delta State Capital Territory (DSCT) of Nigeria, the Language of the environment is IGBO, which happens to be the pupils Mother Tongue. According to Ituen (1998), Mother Tongue is the language of one's parents. Simply put, most parents in DSCT speak Igbo Language to their children/wards at home. Therefore, Igbo Language is regarded as the Children's Mother Tongue.

IGBO is one of the major languages, spoken by one of the major tribes, the IBOs, in South East Geo–political zone of Nigeria. The Mid-Western Ibos, in Delta North Senatorial District, Ikweres in the present Rivers State and the Igbankes in the present Edo State, all in Nigeria, speak dialects of Igbo Language. Igbo, as a Language, is taught as a subject in Primary and Secondary Schools, Colleges of Education and the Universities in Nigeria. So, it is a Nigerian Language that has orthography and Literature. It is widely spoken in any part of Nigeria.

In Nigeria, one of the ways through which any school, be it at the primary or secondary or tertiary level is assessed, is on how serious mathematics education is handled (Igbojinwaekwu, 2013). This is because of the key position mathematics occupies in the Nigerian Educational system and its application in developmental processes of any nation. In this vein, Akuezuilo and Chinweoke (2009), state that mathematics is the bedrock of all science subjects and is, therefore, needed for scientific and technological advancement of any nation. Maduabum and Odili (2006) posit that mathematics occupies a key position in the Nigerian Educational System, because of the vital role it plays in the advancement of science and technology in contemporary society. According to Osafehinti (1990) and Aminu (1995), any society which aspires to be scientifically and

technologically developed must be ready to take mathematics education very serious, since mathematics has ingredients for the effective articulation of the abstract elements of science that gives impetus to the development of technologies. Supporting Osafehinti (1990) and Aminu (1995), Ukeje (1997) states that without mathematics, there is no science, without science, there is no modern technology and without modern technology, there is no society. Ukeje (1997), therefore, concludes that mathematics is the precursor and the queen of science and technology and the indispensable single element in modern societal development. Also, supporting Osafehinti (1990) and Aminu (1995) assertions, Abiodun (1997) in Chinweoke (2008) observes that while science is the bedrock that provides spring board for technology, mathematics is the gate and key to science; he concluded that any nation seeking scientific and technological development, must also address the issue of mathematics. Rogers (1986), explains that Mathematics has become the central intellectual discipline of the technological society and that as the society develops so will its quantitative aspects assume greater influence and dominance over its qualitative features. Eguavon (2002), describes mathematics as the pivot of all civilization and technological development. Supporting Eguavon (2002), Imoko and Agwagah (2006), opin that mathematics is a key factor in the development of any nation.

Mathematical concepts and symbols are used in expressing the physical laws of nature (Tsue and Anyor, 2006). Therefore, mathematical concepts and methods provide scientists with insight, into and about natural phenomenon. Ikeobi (1994) and Njoku (1997) opin that chemical kinetics, chemical equilibrium, stiochemistry, mole concept, solubility, electrolysis, redox reactions and ionic equations are areas in chemistry that require a good knowledge of mathematical concepts. Jegede (1979), identifies ratio, charts, proportions, measurement and statistics as the mathematical concepts needed in biology. Egbugara (1980) in Igbojinwaekwu (2013) indicates that algebra, trigonometry, graphs, calculus and differential equations are the mathematical concepts required in physics and engineering science.

Realizing the views of the aforementioned researchers on the importance of mathematics in national development and its position in the school system, the FRN (2013) is continuously emphasizing the importance of mathematics in national development by making the subject compulsory for both pupils and students in Primary and Secondary Schools. Supporting FRN, Maduabum and Odili (2006), assert that for a nation such as ours, aspiring for scientific and technological take-off, the need to pay due attention to our pupils/students' academic performance, in mathematics, cannot be over emphasized.

Regrettably, despite the importance of mathematics as a key subject in realizing any nation's scientific and technological aspirations, there is ample evidence of continued low interest in the subject by Nigerian pupils/students (Odili. 1992). Many reasons have been advanced for the continuous dismal state of mathematics in Nigeria, at all levels of education. While some researchers (Ali, 1989; Harborpeters,1992) viewed teachers' incompetence as a contributing factor, Adeyegbe (2000) in Anyamene and Anyachebelu (2009) asserts that students' poor retention is an important factor. Other findings (Adeniyi, 1988; Alio and Harborpeters, 1997) in Igbojinwaekwu and Nneji (2012) attribute the low interest in mathematics to teachers' non utilization of appropriate teaching techniques. Many teachers in schools use only techniques they know, even if such techniques are not relevant to the concept under discussion (Akinsola and

Popoola, 2004). Opara (2004) advise that teachers should evolve strategies that involve learner's active participation. Such strategies will generate interest in the students. Igbojinwaekwu and Nneji (2012) attributed the high failure rate of students in Senior School Certificate Examination due to the structure of questions in the examination. No study to the best of the knowledge of the researchers, has reported the effect of using Mother tongue as language of instruction on enhancement of retention level of pupils in primary school mathematics in DSCT. This was what arouse the researchers' interest.

Objectives of the Study
This study is to:
1.   find out the extent of enhancement of retention level of primary 3 pupils who were taught Mathematics in Igbo Language,
2.   find out the extent of enhancement of retention level of female primary 3 pupils who were taught Mathematics in Igbo Language,
3.   find out the extent of enhancement of retention level of male primary 3 pupils who were taught mathematics in Igbo Language,
4.   find out if there is significant difference in mean retention level between the primary 3 pupils who were taught mathematics in Igbo Language and those taught in English Language,
5.   ascertain if there is significant difference in mean retention level between the female primary 3 pupils who were taught mathematics in Igbo Language and those taught in English Language,
6.   determine if there is significant difference in mean retention level between the male primary 3 pupils who were taught mathematics in Igbo Language and those taught in English Language and
7.   find out if there is significant difference in mean retention level between the female and male primary 3 pupils who were taught mathematics in Igbo Language.

Research Questions
The following three research questions guided this study, in order, to attain objectives 1-3.
1.   To what extent has Igbo Language, as a medium of instruction, enhanced retention level in Mathematics learning among the Primary 3 Pupils?
2.   To what extent has Igbo Language as medium of instruction, enhanced the retention level of Female Primary 3 Pupils in Primary School Mathematics learning?
3.   To what extent has Igbo Language, as a medium of instruction, enhanced the retention level of Male Primary 3 Pupils in Primary School Mathematics.

Null Hypotheses
Four null hypotheses were formulated and tested at 0.05 level of significance on a 2-tailed scale, in order, to attain objectives 4-7. The hypotheses were:
HO$_1$: There is no significant difference in mean retention levels between the Primary 3 Pupils who were taught Mathematics in Igbo Language and those taught in English Language.
HO$_2$: There is no significant difference in mean retention   levels between the Female Primary 3 Pupils who were taught Mathematics in Igbo Language and those taught in English Language.
HO$_3$: There is no significant difference in mean retention levels between the Male Primary 3 Pupils who were taught Mathematics in Igbo Language and those taught in English Language.

HO₄: There is no significant difference in mean retention level between the Female and Male Primary 3 Pupils who were taught Mathematics in Igbo Language.

METHODOLOGY

This study adopted the pretest-posttest quasi-experimental research design. This was because intact classes of public schools were used and complete randomization was not possible, due to rigid administrative setup in the public school system.The population of the study was 9,200 Primary 3 Pupils from 23 Public Primary Schools in Delta State Capital Territory (DSCT) of Nigeria. Six Public Primary Schools out of 23 in DSCT were randomly selected through a simple random sampling technique. The six Public Primary Schools had 2,400 Primary 3 Pupils, who formed the sample of this study. These Pupils who formed the sample of this study had Igbo as the language of their immediate environment, DSCT. Three out of the six Public Primary Schools selected for this study, which consisted of 1,200 Primary 3 Pupils, 720 Males and 480 Females, were randomly assigned to the Experimental Group (EG), while the remaining three Primary Schools which, also, consisted of 1,200 Pupils, 690 Males and 510 Females Primary 3 Pupils, were randomly assigned to the Control Group (CG). The six Public Primary Schools selected for this study were assigned to their groups through a proportionate random sampling technique. The EG Pupils were taught Mathematics in Igbo Language, while the CG Pupils were taught Mathematics in English Language, for four weeks.

Researchers made instrument, Mathematics Assessment Test Item (MATI) was used to collect data. The instrument had two parts, 1 and 2. Part 1 required the bio-data of the pupils like name, age and class. Part 2 contained 20 trial tested Multiple Choice Objective Questions, each with five options, out of which one was correct, on the concepts of number and counting. The concepts of number and counting were selected because they were in the scheme and were exactly what to be learnt when the research was on. Two experts in Mathematics and another two experts in Test Construction validated the instrument, MATI, on the basis of coverage of unit of work, relevance in collection of needed data and stated behavioral objectives. Kunder-Richardson 21 (K-R 21) statistic was used to determine the reliability index of MATI, which was 0.85 and was judged good enough to collect data for this study, following Maduabum (2004), Ali (2006) and Egbule and Okobiah (2006) assertions that any instrument made to collect data for academic achievement should have a reliability index of not less than 0.50. The researchers used K-R 21 statistic because each of the 20 Multiple Choice Objective Questions in part 2 of MATI was dichotomous in nature; that is, it required a Pupil to get it right or wrong.

Six teachers, each from the six selected Primary Schools, taught the Pupils. Three teachers of Igbo origin, with good background in spoken Igbo, underwent training programme for two weeks on how to teach mathematics, using Igbo Language as a medium of instruction, while the other three, non-Igbo origin, without background in spoken Igbo, underwent training programme for two weeks on how to teach Mathematics, using English Language as a medium of instruction. This was done to enable the teachers blend their pedagogy and content knowledge with the media of instruction to be used in the classrooms. Also, uniform lesson notes on the concepts of number and counting were prepared for the teachers, by the researchers. This was to ensure that the six teachers teach exactly the same thing, using the same steps, method, behavioral objects and study questions.

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The six teachers used in this study had six years and above service year experience and were all Nigerian Certificates in Education (N.C.E) holders in Mathematics/Physics. These attributes were inbuilt in both EG and CG to avoid the effects of extraneous variables. Besides, the same text book was used by the participating teachers during teaching-learning process. This was to avoid the effect of differences in text books on the validity of the results of this study. Before the commencement of treatment, Primary 3 Pupils in both EG and CG, were subjected to a pretest for 30 minutes, The Pretest Mean Achievement Scores (S_1) for both EG and CG were calculated. Thereafter, the Pupils in both groups were taught for three weeks, after which they were posttested with MATI. The Posttest Mean Achievement Scores (S_2) for both EG and CG were calculated. Six weeks after the posttest, a delayed posttest was administered on both EG and CG, after which Delayed Posttest Mean Achievement Scores (S_3) for EG and CG were calculated. The Mean retention level of both EG and CG were obtained by subtracting Delayed Posttest Mean Achievement Scores, S_3, from the Posttest Mean Achievement Scores, S_2, which is S_2-S_3; negative score implied lost of information or no information retend, while positive score implied information/facts retend (Moyer-Packenham, Baker, Westenskow, Anderson, Shumway, Rodzon and Jordan, 2013).The S_1 of both groups (EG and CG) were compared to find out if they were comparable. The S_3 of both group (EG and CG) were compared using Z-test statistic. This was to find out if the difference in S_3 for EG and CG was significant or not.

DATA ANALYSIS AND RESULTS/FINDINGS

Data Collected through MATI, were analyzed according to stated research questions and hypotheses

Table 1: Z-test Test of Pretest Mean Achievement Scores (S1) of Primary 3 pupils in Experimental and control groups

Group	N	S_1	SD	df	Z_{cal}	Z_{crit}	P	Test	
Experimental	1,200	43.1	5.1	<0.05	2-tailed		2398	1.33	1.96
Control	1,200	42.8	5.9						

Table 1 shows that the difference in S_1 is not significant. This implies that the Primary 3 Pupils in both experimental and control groups are similar in terms of academic achievement. Therefore, the two groups are comparable and adequate to be used in this study.

Research Question 1
To what extent has Igbo Language, as a medium of instruction, enhanced retention level in Mathematics learning among the Primary 3 Pupils?
The extent of enhancement of retention level in Mathematics learning among the Primary 3 Pupils using Igbo Language as medium of instruction is as shown in table 2.

Table 2: Pretest-Posttest Retention Level Scores of Primary 3

Pupils in Mathematics

Group	N	S_1	S_2	S_3	Retention Level
Experimental	1,200	43.1	82	68	14
Control	1,200	42.8	61	57	4

Table 2: shows that the Primary 3 Pupils who were taught Mathematics using Igbo Language as medium of instruction have a higher retention level than the Primary 3 Pupils who were taught Mathematics in English Language. This implies that Igbo Language as medium of instruction enhances retention level, to a greater extent, than English Language , among Primary 3 Pupils in Primary School Mathematics.

Research Question 2
To what extent has Igbo Language, as medium of instruction, enhanced the retention level of Primary 3 Female Pupils in Primary School Mathematics?
The answer to research question 2 is as shown in table 3.

Table 3: Pretest-Posttest–Delayed Posttest Retention Level Scores of Primary 3 Female Pupils in Mathematics

Group	N	S_1	S_2	S_3	Retention Level
Experimental	480	35.3	78	62	16
Control	510	36.1	53	46	7

Table 3 shows that the Female Primary 3 Pupils who were taught Mathematics in Igbo language have higher retention level than the Female Primary 3 Pupils who were taught Mathematics in English Language. Therefore, Igbo Language as medium of instruction encourages higher retention level than using English Language in Primary School Mathematics.

Research Question 3
To what extent has Igbo Language as medium of instruction enhanced the retention level of Male Primary 3 Pupils in Primary School Mathematics?
The extent of enhancement of the retention level of male primary 3 pupils in Primary School Mathematics when Igbo Language is used as medium of instruction is as shown in table 4.

Table 4: Pretest-Posttest–Delayed Posttest Retention level Scores of Male Primary 3 Pupils in Primary School Mathematics

Group	N	S1	S2	S3	Retention Level
Experimental	720	48.3	85	70	15
Control	690	47.8	67	65	2

The Primary 3 Pupils in the experimental group have higher retention level than their counterparts in the control group, as shown in table 4. This shows that Igbo Language as medium of instruction

has higher enhancement in retention level than using English Language as medium of instruction in Primary School Mathematics.

HO1: There is no significant difference in mean retention levels between the Primary 3 Pupils who were taught Mathematics in Igbo Language and those taught in English Language.
Table 5 shows the Z-test analysis of mean retention level scores between the experimental and control groups in Primary School Mathematics.

Table 5: Z-test of Mean Retention level of Primary 3 in Experimental and Control Groups

Group	N	Mean Retention Level	SD	Df	Z_{cal}	Z_{crit}	P	Test
Experimental	1,200	14	12	2,398	19.91	1.96	<0.052	2-tailed
Control	1,0	4	12.6					

Table 5 shows that the higher retention level of Mathematical facts by Primary 3 Pupils of the experimental group over their counterparts in the control group is significant since $z_{cal} = 19.91 > Z_{crit} = 1.96$. Therefore, HO1 is rejected. This further show that teaching Primary 3 Pupils in the Language of their immediate environment, Igbo, is more effective than teaching in English Language.

HO2: There is no significant difference in mean retention level between the Female Primary 3 Pupils who were taught Mathematics in Igbo Language and those taught in English Language.
Table 6 Shows the Z-test analysis of mean retention level scores between the experimental and control groups.

Table 6: Z-test of Mean Retention level of Female Primary 3 Pupils In Experimental And Control Groups

Group	N	Mean Retention Level	SD	df	Z_{cal}	Z_{crit}	P	Test
Experimental	480	16	10	988	14.42	1.96	<0.05	2-tailed
Control	510	7	9.6					

Table 6 shows that $z_{cal} = 14.42 > Z_{crit} = 1.96$. Therefore, HO2 is rejected. The alternate hypothesis is hereby retained. This implies that the higher retention level of mathematical facts by female primary 3 pupils taught in Igbo Language over their counterparts taught is English Language is significant.
HO3: There is no significant difference in mean retention levels between the male Primary 3 Pupils who were taught Mathematics in Igbo Language and those taught in English Language.

The test analysis of the mean retention levels of Male Primary 3 Pupils who received Mathematics lesson in Igbo Language and those who received it in English Language is as shown in table 7.

Table 7: Z-test of Mean Retention Levels Of Male Primary 3 Pupils Who Were Taught Mathematics In Igbo Language And Those Taught In English Language

Group	N	Mean Retention Level	SD	Df	Z_{cal}	Z_{crit}	P	Test
Experimental	720	15	8.9	1408	28.71	1.96	<0.05	2-tailed
Control	690	2	8.1					

Table 7 shows that $z_{cal} = 28.71$ > $z_{crit} = 1.96$. This implies that $z_{cal} = 28.71$ is significant and therefore, HO_3 is rejected. This shows that the Male Primary 3 Pupils who were taught Mathematics in the Language of their environment , Igbo, have significant higher mean retention level score them those taught in English language.

HO₄: There is no significant difference in mean retention level between the Female and Male Primary 3 pupils who were taught Mathematics in Igbo Language.
Table 8 shows the Z-test analysis of mean retention level scores between the Female and Male Primary 3 Pupils who were taught Mathematics in Igbo Language.

Table 8: Z-test of Mean Retention Levels of Female and Male Primary 3 Pupils Who Were Taught Mathematics in Igbo Language

Group	N	Mean Retention Level	SD	df	Z_{cal}	Z_{crit}	P	Test
Female	480	16	12.6	1198	1.29	1.96	<0.05	2-tailed
Male	720	15	13.9					

Table 8 shows that $z_{cal} = 1.29 < z_{crit} = 1.96$ and, therefore, not significant. This implies that HO_4 is retained.

SUMMARY OF FINDINGS

From data analysis, the following findings were eminent:
1.   the Primary 3 Pupils who were taught Mathematics in Igbo Language had higher mean retention level scores than their counterparts taught in English Language,
2.   the Female Primary 3 Pupils who were taught Mathematics in Igbo Language had higher mean retention level scores than their Female counterparts taught in English Language,

3.   the Male Primary 3 Pupils who were taught Mathematics in Igbo Language had higher mean retention level scores than their Male counterparts taught in English Language,

4.   there is a significant difference in mean retention level scores between the Primary 3 Pupils who were taught Mathematics in Igbo Language and their counterparts taught in English Language in favor of those taught in Igbo Language,

5.   there is a significant difference in Mean retention level scores between the Female Primary 3 Pupils who were taught Mathematics in Igbo Language and their Female counterparts taught in English Language in favor of those taught in Igbo Language,

6.   there is a significant difference in mean retention level scores between the Male Primary 3 Pupils who were taught Mathematics in Igbo Language and their counterparts taught in English Language in favor of those taught in Igbo Language and

7.   there is no significant difference in mean retention level scores between the Female and Male Primary 3 Pupils who were taught Mathematics in Igbo Language.

DISCUSSION

The main objective of this study is to find the effect of Igbo Language, as medium of instruction, on the enhancement of retention level of Primary 3 Pupils in Mathematics. This discussion was made according to research questions and hypotheses formulated.

One of the findings was that the Primary 3 Pupils who were taught Mathematics in Igbo Language had significant higher retention level scores than those taught in English Language. This agrees with the finding of Olarewaju (2006) that using another language other than the mother tongue as a medium of instruction impairs/inhabits the development of the child's personality and ability. The findings also, agrees with the finding of Fafunwa, Macaulay and Sokoga (1989) that teaching a child in his/her language of immediate environment or mother tongue gives the adequate foundation needed in a subject and enhances retention level. Also, the policy of FRN (2013) that a child should be taught in his/her mother tongue authenticates this findings. The higher retention level of the Pupils who were taught Mathematics in Igbo Language might be due to the fact that the Pupils were at home with their own language instead of English Language which is alien or foreign to them.

Female Primary 3 Pupils who were taught Mathematics in Igbo Language had a significant higher mean retention level score than their female counterparts taught in English Language was another finding of this study. This finding is very important because Akpan (1987) called on all stakeholders in education to find appropriate ways of making the Female students/pupils love Mathematics.

Another vital finding is that the Male Primary 3 Pupils taught Mathematics in Igbo Language had a significant higher mean retention level than their Male counterparts taught in English Language. This might be because, the Pupils were conversant with Igbo Language which they speak with their parents at home and that English Language has the problem of comprehension among the Pupils and between the Teachers and Pupils.

The very important finding in this study is that there is no significant difference in mean retention level between the Female And Male Primary 3 Pupils who were taught Mathematics in Igbo Language. This finding is timely because stakeholders (Akpan, 1987;Igboginwaekwu,2002) in education have been looking for a way to bridge the gap in academic achievement between the boys and girls in Mathematics and sciences. This finding is also vital because science educators have been searching for appropriate strategy of improving academic achievement of pupils /students in both Primary and Secondary Mathematics and Sciences.

RECOMMENDATIONS

The following recommendations are therefore given
1.   teachers should be exposed to workshop /seminars on how to combine content knowledge, pedagogy and Igbo Language to effectively and efficiently teach Mathematics to the students/pupils,
2.   the Federal Government of Nigeria should as a matter of urgency, encourage universities to introduce a programme in Mathematics /Igbo Language in the Faculty of Education and
3.   the Federal Government of Nigeria should as a matter of policy ensure that the language of Pupils' immediate environment is compulsorily used as medium of instruction in the first three years in the Primary schools in the teaching of Mathematics and Science Subject

CONCLUSION

Igbo Language, as medium of instruction, enhanced a significant mean retention level of Primary 3 Pupils in Mathematics than English Language Therefore, the use of mother tongue in the first three years, as language of instruction, to teach Mathematics should be sustained.

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