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EFFECT OF MOTHER TONGUE ON PRIMARY SCHOOL PUPILS` ACADEMIC ACHIEVEMENT AND INTERESTIN MATHEMATICS INABIA STATE

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ABSTRACT
The study aimed at finding out the effect of using mother tongue in teaching and learning mathematics on pupils' academic achievement and interest in Abia State. The study is quasi-experimental randomized control group pretest, post-test design. Intact classes were used. Four research questions and four hypotheses guided the study. Two groups were used for the study, experimental group (EGP), and the control group (CGP) with the language of instruction being Igbo language and English language respectively. The study was carried out in Ukwa-West Local Government Area of Abia state. The population of the study was one thousand one hundred and thirty-six lower basic pupils. The sample of two hundred and twenty-one basic three pupils was used for the study. The Research instrument used for the study were Lower basic mathematics achievement test (LBMAT) and Lower basic mathematics Interest Inventory (LBMII). The Kuder-Richardson Formula 21 was used to determine the reliability co-efficient of LBMAT which was found to be 0.97. The reliability co-efficient of LBMII was calculated using Cronbach Alpha Method and found to be 0.89. The data collected was analyzed using mean, standard deviation and ANCOVA. Findings of the study revealed that the use of mother tongue significantly improved students' achievement than use of English language (P=0.000, p < 0.05). The findings showed that there was no significant difference in the mean interest ratings of male and female students taught geometry using mother tongue (P=0.20>0.05) From the results of the study, it was recommended that mother tongue should be used in teaching mathematics at lower basic level and should be encourage by the federal government as recommended in National policy of Education to improve pupils' achievement and interest in mathematics

Keywords: Mother tongue, Teaching, Learning, mathematics, academic achievement and interest

Introduction

Mathematics can be defined as the science of numbers and space and the language of science and technology. Mathematics remains one of the compulsory subjects for the Nigerian students at both primary and post primary schools (Ayeni, 2012). Yet pupils` perform poorly in Mathematics. This problem could be attributed to inadequate grasp of the language of instruction among others (Abubakar, Umar and Musawa 2015). Primary education is where the foundations of secondary and tertiary education are laid Abidogun, (2012), Etor, Mbon&Ekanem, 2013 and Omoogun 2015). Therefore, the selection of the suitable language as medium of instruction is important. Ojetunde (2012), is of the opinion that mother-tongue should serve as a medium of instruction in the formative years (1-12). This, according to him, will offer the child opportunity to explore his natural environment, develop inquisitiveness, communicate in the natural language, develop reasoning capability and aggravate self-confidence. This implies that language of learning mathematics at this level is very crucial. Pupils have to learn and understand mathematics perceptions through a language, this arises the need of making use of the correct vocabulary as they make mathematical inquiries, elucidations and create inferences (Tracy 1994 in Abubakar, Umar and Musawa 2015). However, Kioko (2015) pointed out that learners benefit from using their home language in education in early grade years. English language poses challenges to learning Mathematics because; the language was imposed on the people of Nigeria by the colonial masters; (Okudo, 2013). Nigeria ranks third in the world with 516 ethnic languages spoken, below Papua New Guinea with 820 and Indonesia with 742 (Ojetunde, 2012).

However, there are some of the challenges militating against using mother tongue to teach, which are: Lack of Awareness (Obioma, 2011), linguistically mixed classroom is a major factor hindering the implementation of the language policy particularly, in urban settings (Aguiyi, 2012). Lack of necessary materials: For effective teaching and learning to take place, necessary materials in form of books, teaching or instructional materials, must be available. The Government: there is no strong political will and leadership on the part of the government to implement the language provisions. If the government is serious at implementing the language policy, there should have been laid down sanctions for defaulters. Pupils' and Parental Attitude: Most children use the English language as their first language. Such children enter the lower primary classes knowing nothing about their mother tongue or the language of the environment they live in (Abubakar, 2003).

These challenges militating against using mother tongue to teach has hindered the

implementation of mother tongue in teaching Mathematics. Igbojinwaekwu and Dorgu (2015) observed that, 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 National Policy on Education (NPE), no record has shown any school, be it public or private, implementing the use of mother tongue to teach, except that the language of the environment is taught in primary and secondary schools as a subject. The policy provisions on language in the NPE are very explicit; however, the implementation had been plagued with a lot of challenges. Language of instruction may hinder or trigger pupils' interest in learning mathematics.

Therefore, according to Alio and Okafor (2018) interest is one of the inhibiting factors to mathematics achievement among pupils. For mathematics achievement to be awakened in the children, they must have interest in mathematics. Studies like the works of Eriksson (2020) have shown that female pupils show less interest in mathematics and have negative attitude towards mathematics than boys, hence they perform poorly in lower classes. Interest developed by children are highly motivated by several factors such as family background, parental attitudes, peer-group, etc. In helping children become motivated learners and producers of mathematical knowledge successfully, the teachers' main instructional task is to create a learning environment where pupils can engage in mathematical thinking activities, in addition to using the language of the immediate environment during teaching of mathematics. Also, according toOkigbo and Okeke (2011) as cited by MainaKajuru & Tundunkaya (2018),interest is an important variable in learning because when one becomes interested in an activity, one is likely to be more deeply involved in that activity. That is, interest is a subjective feeling of concentration or persisting tendency to pay attention and enjoy some activity or content. Apart from lack of application of instructional material in teaching mathematics, another factor of concern that leads to poor performance is the lack of interest in mathematics though some students may be intellectually and physically capable of learning, they may never learn until their interest is stimulated. Once the students are stimulated, they will continue to learn as long as the teacher is capable of sustaining their interest in the subject. MainaKajuru & Tundunkaya (2018) went further to say that, this is so because interest is a mother of attention. Once there is direct interest, attention is guaranteed and learning is assured. The low interest in mathematics evolves from anxiety and fear. Studies such as Prendergast (2011) and Lazarides and Ittel (2012), asserted that interest has a powerful influence on

academic performance and they demonstrated the function of interest in fostering, remembering and understanding material, and stimulating students' positive attitude towards a topic. Interest has a profound effect on students' recollection and retrieval processes, their acquisition of knowledge, and their effort expenditure. Consequently, an interested individual is more likely to develop high competency and to receive positive feedback from others (Prendergast, 2011; Bolaji et al, 2015).

Statement of the Problem

The problem of poor academic achievement by Nigerian students in mathematics has been of concern to all mathematics educators in the country. At the school certificate level, the West African Examination Council, chief examiners' reports from WAEC, (2022) confirm this observation. Several factors contributed to deterioration in Pupils' academic achievement in mathematics which includes language of instruction used at the early stages of pupils' education, pupils' interest and their inability to retain the concepts learnt among others. It is possible that these factors jointly or singly affect pupils` academic achievement and interest in mathematics. It is also possible that language of instruction in teaching mathematics contributes to students' abysmal academic achievement and interest in the subject (Kioko, 2015). It is in line with this that, the researchers investigated on the effect of mother tongue on primary school pupils` academic achievement and interest in mathematics in Abia State.

Purpose of the study

This study determined the effect of mother tongue on primary school pupils` academic achievement and interest in mathematics in Abia State.

Specifically, the study:

1. Determine the difference in the mean achievement scores of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language.
2. Determine whether there is a difference in the mean interest rating scores of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language.
3. Examine the difference in the mean achievement scores of lower basic three male and female pupils who were taught mathematics using mother tongue.
4. Examine the difference in the mean interest ratings of lower basic three male and female pupils who were taught mathematics using mother tongue.

Research Questions:

The following questions were formulated to guide the study:

1. What is the difference in the mean achievement scores of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language?
2. What is the difference in the mean interest ratings of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language?
3. What is the difference in the mean achievement scores of lower basic three male and female pupils who were taught mathematics using mother tongue?
4. What is the difference in the mean interest ratings of lower basic three male and female pupils who were taught mathematics using mother tongue?

Hypotheses:

In order to further guide the study, the following hypotheses were formulated and tested at 0.05 alpha levels.

1. There is no significant difference in the mean achievement scores of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language
2. There is no significant difference in the mean interest ratings of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language
3. There is no significant difference in the mean achievement scores of lower basic three male and female pupils who were taught mathematics using mother tongue
4. There is no significant difference in the mean interest ratings of lower basic three male and female pupils who were taught mathematics using mother tongue

Research Method

Research Design: Research design for this study was quasi-experimental, specifically, the non-equivalent control group research design. Intact classes were randomly assigned to experimental and control groups.

Area of Study: The study was carried out in Ukwa-West Local Government Area of Abia state.

Population: The population of the study was 1,136 lower basic pupils in the schools. (Source: Ukwa-West Universal Basic Education Board). There are 144 government primary schools in Ukwa-West

Local Government Area of Abia state as of the time of the study 2021 / 2022 section.

Sample and sampling technic: The sample size of the study comprised 221 basic three pupils located in 144 government primary schools in Ukwa-West Local Government Area of Abia state, were used for study. The sampling procedure was a multi-stage approach. The first stage was the purposive sampling which was used in the selection of six schools from the Local Government Area. The schools selected were the ones the authorities permitted the use of their schools. The researcher further used simple random sampling to select one intact class from each school through balloting. Assignment to treatment conditions for the six schools was by simple randomization. The researchers assigned three schools for experimental group (EGP) while the other three were used for control group (CGP) with the language of instruction being Igbo language and English language respectively.

Instrumentation: The data for this research were obtained through two major instruments. These were Lower basic mathematics achievement test (LBMAT) and Lower basic mathematics Interest Inventory (LBMII) developed by the researchers. The Lower basic mathematics achievement test (LBMAT) was constructed in line with a test print on the six levels of specification based on Bloom taxonomy; knowledge, comprehension, application, analysis, synthesis and evaluation. It was divided into two parts: pre- LBMAT and post-LBMAT which were described as test one and test two respectively. They consisted of 25 objectives test items with options A-D and Students were expected to tick the correct option. The test items were prepared based on lower basic 3 mathematics curriculum. The pre-LBMAT was used to ascertain the equivalence and level of Mathematics achievement of the sample pupils before treatment. The post-LBMAT was used to determine the extent of students' Mathematics achievement after the treatment. The Lower basic mathematics Interest Inventory (LBMII) was also prepared by the researcher which consisted of 30 items interest scale. The instrument was designed to asses' students' interest in arithmetic concepts skills. Each item was rated on a four-point scale with the positive statements response as Strongly Agree (A), Agree (A), Disagree, (D) and Strongly Disagree (S.D) which was coded 4, 3, 2, and 1 respectively. The aim was to ascertain the level of interest generated by the pupils in Mathematics when taught with mother tongue as compared to the English language.

Validity of the Instruments: The LBMAT and LBMIl were given to three experts, one from Mathematics Education option of the Curriculum studies and Educational Technology Department, two from Measurement and Evaluation all from the

Faculty of Education, University of Port Harcourt, to look at the contents, scope of coverage, ambiguity and vagueness of expression. The experts 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. The validators also checked the lesson plans whether they actually conveyed the activities involved in the teaching and learning approach

Reliability: The Lower basic mathematics achievement test (LBMAT) Lower basic mathematics Interest Inventory (LBMII) were subjected to a trial test in order to establish the reliability of the instruments. The instrument was trial tested in schools which was not one of the schools sampled for the study. The trial testing was conducted in two intact classes of forty-two lower basic 3pupils. Twenty-two students formed the experimental group while twenty formed the control group. The pre-test was administered first then posttest was administered immediately after treatment to both the experimental and the control groups to ascertain the different levels of achievement. The Kuder-Richardson Formula 21was used to determine the reliability co-efficient of LBMAT which was found to be 0.97. The reliability co-efficient of LBMII was calculated using Cronbach Alpha Method and found to be 0.89. Both instruments were considered reliable enough to be used for the study

Method of Data Collection: The intact classes randomly sampled were assigned to experimental and control groups which were not in the same school. The researcher spent one week in training the research assistants (teachers) in the sampled schools. The training focused on the lesson plans and the selected topics in geometry of lower basic 3pupils. Pre-LBMAT and LBMII were administered before the treatment while post-LBMAT and LBMII were administered after the treatment. The experimental groups were taught with the mother tongue while the control groups were taught with English language. At the end of six weeks the post-LBMAT and LBMII were administered to both groups. Pre-LBMAT was recorded as 1 for a correct answer and 0 for wrong answer and the LBMll was rated according to the points assigned to each item respectively (that is 4, 3, 2 and 1).

Method of Data Analysis: The four research questions raised by the study were answered by descriptive statistics of mean and standard deviations while the four null hypotheses were tested using inferential statistics of Analysis of Covariance (ANCOVA) at 0.05 level of significance with the pre-test scores as covariate. The choice of ANCOVA was made because the

study employed the quasi-experimental non-equivalence control group research design.

Presentation of Results

Research Question One: What is the difference in the mean achievement scores of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language?

Table 1: Mean achievement scores and standard deviations (pre-test and post-test) of lower basic three pupils for the experimental and control.

Group	Pre-Test		Post-Test		
	Mean	Std Deviation	Mean	Std Deviation	Mean Gain
Experiment	7.69	2.94	16.70	5.54	9.01
Control	7.31	2.36	11.72	3.37	4.41
Mean Diff	0.38		4.98		4.60

Table One presents mean achievement scores and standard deviations of lower basic three pupils in experimental and control groups. The table showed the difference in the mean between the two groups at pre-test was 0.38 while at post-test, it was 4.98. The mean gained by the experimental group was 9.01 while that of the control group was 4.41. The difference in the mean gains between the experimental and control groups was 4.60. This means that students in the experimental group achieved more than those in the control group.

Hypothesis 1: There is no significant difference in the mean achievement scores of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language

Table2. Summary of One-way ANCOVA on the effect of using mother tongue and English language on lower basic three pupils` academics achievement in mathematics

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	3142.34	2	1571.17	93.56	0.00
Intercept	2084.79	1	2084.79	124.15	0.00
Pre- test	1376.90	1	1376.90	81.99	0.00
Group	**1544.57**	**1**	**1544.57**	**91.98**	**0.00**
Error	4752.39	283	16.79		
Total	66757.00	286			
Corrected Total	7894.73	285			

Table 2 presents summary of one-way ANCOVA on the effect of using mother tongue and English language on lower basic three pupils` academics achievement in mathematics. The table reveals that $F(1,283) = 91.98$ and $p = 0.00$. With $p<0.05$, the study found the test statistic significant. The null hypothesis of no significant difference in the mean achievement scores of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language was rejected. This indicated that the mean difference between the pupils in the experimental group and the control group was statistically significant. The study therefore concluded that lower basic three pupils taught using mother tongue significantly attained higher mean achievement scores in LBMAT as compared to those who were exposed to the English language.

Research Question 2: What is the difference in the mean interest ratings of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language?

Table3: Mean interest ratings and standard deviations (pre-test, post-test) of lower basic three pupils for the experimental and control.

Group		Pre-Test		Post-Test	
	Mean	Std Deviation	Mean	Std Deviation	Mean Gain
Experiment	2.02	0.31	2.84	0.23	0.82
Control	2.01	0.20	2.61	0.16	0.60
Mean Diff	0.01		0.23		0.20

Table 3 presents mean interest ratings and standard deviations of students in experimental and control groups. The table reveals the difference in the mean interest rating between the two groups at pre-test as 0.01. The difference between the groups at post-test was 0.23. The mean interest rating gained by the experimental group was shown as 0.82 while that of the control group was 0.60. The difference in the mean interest rating gains of the experimental and control groups was 0.22. This indicates that the experimental group showed more improvement in the pupils' interest ratings in mathematics.

Hypothesis 2: There is no significant difference in the mean interest ratings of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language.

Table 4. Summary of One-way ANCOVA on the mean interest ratings scores of lower basic three pupils who were taught mathematics using mother tongue and those taught using English language

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	3.87	2	1.94	47.29	0.00
Intercept	40.52	1	40.52	990.33	0.00
Pre- test	0.14	1	0,14	3.46	0.06
Group	**3.75**	**1**	**3.75**	**91.70**	**0.00**
Error	11.58	283	0.04		
Total	2145.28	286			
Corrected Total	15.45	285			

Table 4 presents summary of one-way ANCOVA report on the effect of mother tongue on lower basic three pupils' interest in mathematics. The table reveals that $F(1,283) = 91.70$ and $p = 0.00$. With $p<0.05$, the test statistic was also found to be significant. The null hypothesis of no significant difference in the mean interest ratings of lower basic three pupils exposed to mother tongue and those exposed to English language was therefore rejected. This indicated that, the mean difference between the lower basic three pupils in the experimental group and the control group were statistically significant. The study thus concludes that lower basic three pupils taught using mother tongue significantly had higher mean interest ratings as compared to those who were taught via English language

.**Research Question 3:** What is the difference in the mean achievement scores of lower basic three male and female pupils who were taught mathematics using mother tongue?

Table 5: Mean achievement scores and standard deviations of lower basic three male and female pupils who were taught mathematics using mother tongue

Gender	Pre-Test		Post-Test		
	Mean	Std Deviation	Mean	Std Deviation	Mean Gain
Male	7.34	2.96	17.40	5.84	10.06
Female	2.01	0.20	2.61	0.16	0.60
Mean Diff	-0.76		-0.46		0.30

Table 5 presents mean achievement scores and standard deviations of male and female lower basic three pupils in experimental group. The table revealed the difference in the mean achievement scores of male and female pupils at pre-test as 0.76 favour of female pupils. At post-test, the table revealed the mean difference as 0.46 for the females. The mean gained by male pupils was 10.06 while that of females was shown as 9.76. The difference in the mean gain between male and female was revealed as 0.30. This means that, there exists a difference in the mean achievement scores in favour of the male.

Hypothesis 3: There is no significant difference in the mean achievement scores of Lower basic three male and female pupils who were taught mathematics using mother tongue

Table 6: Summary of One-way ANCOVA on the effect of mother tongue on mean achievement scores of Lower basic three male and female pupils in Mathematics.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1332.63	2	666.32	30.11	0.00
Intercept	1508.86	1	1508.86	56.16	0.00
Pre- test	1242.92	1	1242.92	56.16	0.00
Sex	**194.73**	**1**	**194.73**	**8.80**	**0.82**
Error	3275.35	148	22.13		
Total	46697.00	151			
Corrected Total	4607.99	150			

Table 6 presents summary of one-way ANCOVA on the effect of mother tongue on male and female lower basic three pupils' achievement in mathematics. The table reveals that $F(1,148) = 8.80$ and $p = 0.82$. Since $p>0.05$, the test statistic was considered not to be significant. The null hypothesis of no significant difference in the mean achievement scores of female and male lower basic three pupils exposed to mother tongue was accepted. This indicates that, the difference in mean achievement scores between male and female students in the experimental group as reported in Table 6 was not statistically significant. The study concluded both male and female students equally benefitted from the lesson.

Research Question 4: What is the difference in the mean interest ratings of Lower basic three male and female Pupils who were taught mathematics using mother tongue?

Table 7: Mean Interest Rating Scores and Standard Deviations of Lower basic three male and female Pupils who were taught mathematics using mother tongue.

Gender	Pre-Test		Post-Test		
	Mean	Std Deviation	Mean	Std Deviation	Mean Gain
Male	2,02	0.31	2.86	0.25	0.84
emale	2.01	0.31	2.81	0.21	0.80
Mean Diff	0.01		0.05		0.04

Table 7 presents mean interest ratings and standard deviations of male and female students in experimental group. The difference between male and female students at pre-test was shown as 0.01 however, at post-test; the mean was 0.05. The mean gained by male students was 0.84 while that of females was shown as 0.80. The difference in the mean gain between the male and female students was 0.04. The conclusion drawn was that there exists some difference in the mean interest ratings in gender in favour of male students.

Hypothesis 4: There is no significant difference in the mean interest ratings of lower basic three male and female pupils who were taught mathematics using mother tongue

Table 8: Summary of One-way ANCOVA on the effect of mother tongue on lower basic three male and female pupils` mean interest ratings in Mathematics

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1.56	2	0.78	17.74	0.00
Intercept	41.94	1	41.94	951.39	0.00
Pre- test	1.50	1	1.50	33.97	0.00
Sex	**0.07**	**1**	**0.07**	**1.67**	**0.20**
Error	6.52	148	0.04		
Total	1223.31	151			
Corrected Total	8.09	150			

Table 8 presents summary of one-way ANCOVA on the effect of mother tongue on lower basic three male and female pupils` Interest in Mathematics. The table revealed that F(1,148) = 1.67 and p = 0.20. Since p>0.05, the test statistic was considered not to be significant. The null hypothesis of no significant difference on the effect of mother tongue on lower basic three male and female pupils` mean interest ratings in Mathematics was accepted. This indicates that the difference between the male and female students' mean interest ratings in the experimental group as reported was not statistically significant. Thus, male and female equally benefited from the use of mother tongue on mean interest rating in teaching Mathematics

Discussion

The result of this study therefore showed that lower basic three pupils taught using

mother tongue significantly attained higher mean achievement scores in LBMAT as compared to those who were exposed to the English language. This finding is in agreement with the finding of Anyagh, O'kwu, &Imoko (2016) which revealed that the students taught mathematics using Tiv language achieved higher than those taught using English language. It also agreed with the study by Abubakar, Umar, and Musawa (2015) where statistical analysis showed there was a significant difference between those taught Mathematics in Hausa and students taught Mathematics in English language ($p \leq 0.05$) which means that those taught Mathematics in Hausa performed better than the students taught Mathematics in English language, as well as Oginni and Owolabi (2013) which showed pupils taught science in the mother-tonguehad higher science achievement scores compared to those taught in English. Likewise, the study of Igbojinwaekwu, and Dorgu (2015) showed that the Primary 3 Pupils who were taught Mathematics using Igbo Language as medium of instruction had a higher achievement level than those who were taught in English Language. The reason for these results is that there is more effective communication between the teacher and the pupils in the mother-tongue. This is because the child talks, believes and reasons in the mother-tongue.

This study also,concluded that lower basic three pupils taught using mother tongue significantly had higher mean interest ratings as compared to those who were taught via English language. The null hypothesis of no significant difference in the mean interest ratings of lower basic three pupils exposed to mother tongue and those exposed to English language was rejected. This indicated that, the mean difference between the lower basic three pupils in the experimental group and the control group were statistically significant. The finding agrees with the findings ofOyekola (2020), Maina,Kajuru & Tundunkaya (2018), Hamza and Timayi (2018), MainaKajuru &Tundunkaya (2018) which indicated significant change in interest of students in experimental and control groups, students in the experimental group developed higher interest than the subjects in the control group as shown in their mean, rank scores. However, the present study is not in agreement with work of Atetwe (2013) in his work Analysis of the Influence of Mother Tongue on Students' Performance in English in KCSE in Public Day Secondary Schools in Gatundu District, Kiambu County, Kenya whose study found out that use of mother tongue had a negative influence in performance of English students in public day secondary schools of Gatundu. It emerged from the study that use of mother tongue influences the way students write and pronounce in English, hence negatively influencing the performance of English.

It was also, found that there was no significant difference between the mean achievement scores of male and female students taught mathematics using mother tongue, that is the difference between the mean achievement scores of both students is not statistically significant. This finding is in line with the findings of Igbojinwaekwu, and Dorgu (2015) which revealed that there

is no significant difference in mean achievement scores between the female and male primary three pupils who were taught Mathematics in Igbo Language. This finding is also, in agreement with the finding of Anyagh, O'kwu, &Imoko (2016) which revealed that there is no significant difference in mean achievement scores between the female and male Primary three pupils who were taught mathematics using Tiv language. It also agreed with the study by Abubakar, Umar, and Musawa (2015) where statistical analysis showed there was no significant difference in mean achievement scores between the female and male Primary three pupils who were taught Mathematics in Hausa as well as Oginni and Owolabi (2013) which showed there is no significant difference in mean achievement scores between the female and male pupils who were taught science in the mother-tongue.

The result of this study therefore showed that, the null hypothesis of no significant difference on the effect of mother tongue on lower basic three male and female pupils` mean interest ratings in Mathematics was accepted. This indicates that the difference between the male and female students' mean interest ratings in the experimental group as reported was not statistically significant. Thus, male and female equally benefited from the use of mother tongue on mean interest rating in teaching Mathematics. This finding is in agreement with the findings of Ajai & Imoko, (2015) when they undertook a study to assess gender differences in mathematics achievement and retention by using Problem-Based Learning (PBL) found out that there was no signification difference between the mean interest scores of pupils taught with the mathematical games due to sex. Which also agrees with the work of MainaKajuru &Tundunkaya (2018) who compared the change of interest of male and female students. The result showed that, male and female students have mean rank values of 180.00 and 179.46 respectively. The Mann Whitney (U-test) value arrive at was 4.20 and the p-value was 0.19. Since, the p-value of 0.19 is greater than p <0.05level. This indicated that, there was no significant difference in the interest of students taught algebraic processes using peer tutoring strategy. Therefore, the null hypothesis which stated that, there is no significant difference on interest between the interests of students taught with peer tutoring strategy was retained.

Conclusion

From the results of this study, it has been empirically proven that using mother tongue in teaching mathematics enhances higher mean achievement scores than the use of English language.

This study also, concluded that lower basic three pupils taught using mother tongue significantly had higher mean interest ratings as compared to those who were taught via English language.

It was also, found that there was no significant difference between the mean achievement scores of male and female pupils taught mathematics using mother tongue

The result of this study also showed that, there was no significant difference on the effect of mother tongue on lower basic three male and female pupils` mean interest ratings in Mathematics

Recommendations

Based on the findings and conclusions generated from the study, the following recommendations are made by the researchers:

1. It is recommended that having found mother tongue to be effective in teaching and learning mathematics at lower basic classes, government should enforce the mother tongue policy as stated in National policy of Education.
2. Teacher training institutions should incorporate instructions in mother tongue in their teacher training programme so as to produce teachers that will be able to teach all subjects in their mother-tongue at the basic education level.
3. Curriculum developers should develop mathematics curriculum in the mother-tongue for easy planning and presentation of mathematics lessons in mother-tongue. Authors and publishers of educational books should endeavor to write and publish mathematics books and other instructional materials in the mother-tongue.
4. Federal government should further re-enforce the use of mother tongue as recommended in National policy of Education.
5. Parents should endeavor to speak and encourage their children to speak and study in their mother-tongue.

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