



The Perceived Influence of Mother Tongue Interference on Secondary School Students Performance in Mathematics in Makurdi Local Government Area of Benue State

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ABSTRACT

The study investigate the Perceived Influence of Mother Tongue Interference on Secondary School Students Performance in Mathematics in Makurdi Local Government area of Benue State. The study had two (2) research questions from which two (2) null hypotheses were formulated, which were tested at 0.05 level of significance. The study employed survey research design. The target population comprised all secondary school students in Makurdi local government area of Benue state. Out of nine thousand three hundred and sixty-two (9362) students involved in the study, two hundred and four (204) students were purposefully selected for the study. The instrument for data collection was Perceived Influence of Mother Tongue Interference on Students Performance in Mathematics Questionnaire (PIMTISPQ). Data collected were analyzed using, mean and standard deviation and T-test statistics. The result of the findings showed that there is no significance influence of mother tongue interference on secondary school students performance in mathematics in Makurdi local government area of Benue state. It was therefore recommended that secondary school students in Makurdi local government area of Benue state should not be taught mathematics in their mother tongue.

Key Words: Mother Tongue Interference, Mathematics, Performance

Introduction

Mathematics is a fundamental part of human thought and logic, and integral to attempts at understanding the world and resources. Mathematics is a science subject that deals with arithmetic and computation of numbers and figures. All students deserve to become mathematically literate regardless of gender, socioeconomic background, language, cultural background, learning ability or previous mathematics experiences (Njagi, 2015). The students have a wrong image of mathematics that mathematics is many formulae to learn, without knowing why; mathematics is a never changing, not lively subject; something for nerds and loners, and thus, maybe, also something for boys and men and not for girls and women John T. Ajayi & Benjamin I. Imoko (2015).

Gender differences in mathematics achievement and ability has remained a source of concern as scientists seek to address the under-representation of women at the highest levels of mathematics, physical sciences and engineering (Asante, 2010). Gender refers to the social construction of diverse physical, biological, mental and behavioural characteristics relating to differences between the male and female sex. It is a social and cultural construction of roles, access to and control over resources between men and women, or boys and girls in society Akena, 2020). Accordingly, gender characterizes the differing social roles, responsibilities, constraints, opportunities and needs of females and males in any given social context (Filgona, 2016; Akena, 2020).

Mathematics is called the language of science. "The universe cannot be read until we have learnt the language and become familiar with the characters in which it is written. It is written in mathematical language, and the letters are triangles, circles and other geometrical figures, without which means it is humanly impossible to comprehend a single word (Anne, 2019). There are conflicting views on the influence of mother tongue on the performance of students in mathematics. There are those who believed that students will comprehend mathematics better if taught using their mother tongue while others disagreed Olanrewaju & Akinwunmi (2021).

Mother tongue interference means the influence of the learners' native language on second/foreign language learning. The general usage of the term "mother tongue" denotes not only the language one learns from one's mother, but also the speaker's dominant and home language, that is, not only the first language according to the time of acquisition, but the first with regard to its importance and the speaker's ability to master its linguistic and communicative aspects (Richard, 2019).

Objective of the Study

This study has the following objectives 1. examine the perceived influence of mother tongue interference on secondary school students performance in mathematics 2. determine the perceived influence of mother tongue interference on male and female secondary school students performance in mathematics.

Research Questions

1. what is the perceived influence of mother tongue interference on the performance of secondary school students in mathematics?
2. What is the perceived influence of mother tongue interference on male and female students performance in mathematics?

Research Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance;

1. there is no significance influence on mother tongue interference on secondary school students performance in mathematics
2. there is no significance influence of mother tongue interference on male and female students performance on secondary school student in mathematics.

METHODOLOGY

This study employed the survey design. The study was carried out in Makurdi Local Government area of Benue State. The sampling technique that was employed in the selection was the simple random sampling. The sampling comprises 78 secondary schools; the researcher picked five (5) schools out of the entire population randomly. The sample size of 204 students was considered in the study. The questionnaires were administered by the researcher with the help of the mathematics teacher in the selected schools. Research questions were answered using descriptive statistics of mean and standard deviation while the hypotheses were tested using chi-square.

RESULTS

Based on the data gathered, tables are presented below.

Table 1: Mean and Standard deviation for the perceived influence of mother tongue interference on the performance of secondary school students in mathematics

	Items	Mean	SD	Remarks
1	I understand mathematics better when concept are explained using mother tongue	1.85	1.042	Disagreed
2	I find it easier to recall basic concept in mathematics when taught using mother tongue	1.81	0.975	Disagreed
3	I transfer problem-solving strategies or approaches from my mother tongue to the language of instruction and vice versa which has helped me developed better problem-solving skills and flexibility in thinking	2.00	1.087	Disagreed
4	I often ask questions to clarify my doubt using mother tongue which helps improve my understanding of more complex mathematics	1.89	1.023	Disagreed
6	Using mother tongue and its associated mathematics terminologies can enhance my cognitive flexibility and has improved my ability to approach complex mathematical problems from different perspectives	1.78	1.034	Disagreed
	Using mother tongue and its assumed mathematics terminologies can enhance my performance in mathematics	1.84	1.094	Disagreed

The result from table 1 indicate that, the mean for items 1 to 6 are 1.85, 1.81, 2.00, 1.89 and 1.84 with their respective standard deviations of 1.042, 0.975, 1.087, 1.023, 1.034 and 1.094. From the mean of the items which are all less than 2.50, the result shows that the students disagreed that mother tongue interference has influence on their performance in mathematics.

Table 2: Mean and standard deviation of the perceived influence of mother tongue interference on male and female students performance in mathematics

Gender		Item1	Item2	Item3	Item4	Item5	Item6
Male	Mean (\bar{X})	1.99	2.00	2.12	2.06	1.95	2.00
	N	135	135	135	135	135	135
	Std. deviation	1.096	1.051	1.166	1.105	1.128	1.172
Female	Mean (\bar{X})	1.57	1.45	1.77	1.55	1.45	1.54
	N	69	69	69	69	69	69
	Std. deviation	0.866	0.676	0.877	0.738	0.718	0.850

From table 2, the mean and standard deviation for item 1 is 1.99 and 1.096 for male students while that of female students is 1.57 and 0.866; for item2 is 2.00 and 1.051 for male students while that of female students is 1.45 and 0.676; for item3 is 2.12 and 1.166 for male students while that of female students is 1.77 and 0.877; for item4 is 2.06 and 1.105 for male students while that of female students is 1.55 and 0.738; for item5 is 1.95 and 1.128 for male students while that of female students is 1.45 and 0.718; for item6 is 2.00 and 1.172 for male students while that of female students is 1.54 and 0.850 respectively. From the mean of the items of both gender which are all less than 2.50, the result shows that both the male and female students disagreed that mother tongue has interference on their performance in mathematics.

Table 3: Chi-square statistics for the perceived influence of mother tongue interference on secondary school students performance in mathematics

Chi-square	Degree of freedom	Asymp. significance	Decision
192.353 ^a	17	0.000	Rejected

The result for table 3 shows that p-value is 0.000. Hence 0.000 is less than 0.05, the null hypothesis which state that there is no significance influence of mother tongue interference on secondary school students performance in mathematics is accepted. This implies that there is no significance influence on mother tongue interference on secondary school students performance in mathematics.

Table 4: Chi-square statistics for the perceived influence of mother tongue interference on secondary school student performance in mathematics

Chi-square	Degree of freedom	Asymp. significance	Decision
15.777 ^a	3	0.001	Rejected

The result for table 4 shows that p-value is 0.001. Hence 0.001 is less than 0.05, the null hypothesis which state that there is no significance influence of mother tongue interference on male and female students performance in mathematics is accepted. This implies that there is no significance influence of mother tongue interference on male and female students in mathematics.

DISCUSSION OF FINDINGS

Result for table3 shows that the P-value is 0.000 less than 0.05 which implies that there is no significance difference in the perceived influence of mother tongue interference on secondary school students performance in mathematics. This finding disagree with the findings of Olanrewaju (2021) who found that mother tongue have significance effect on the achievement of Junior and Senior Secondary school students taught mathematics.

The result from table 4 indicate that the P-value is 0.001 less than 0.05 which shows that there is no significance influence of mother tongue interference on male and female student performance in mathematics. These findings disagree with the finding of Siyang (2018) who found that the use of mother tongue as a medium of instruction is more effective than English language.

Recommendations

Based on the findings, the following recommendations were made;

1. The States Ministry of Education with the help of the Federal Government should not allow students to be taught mathematics in their mother tongue.
2. Students in all the secondary schools of Makurdi local government area of Benue state should be discouraged from conversing in mother tongues. Moreover, stringent language policies that are feasible should be developed.
3. Schools should come up with a reward-punishment system to encourage use of English and discourage use of mother tongue.
4. Teachers should come up with teaching methods that are interactive to ensure that students are given an opportunity to interact with each other so that they can have good performance in mathematics.

5. Schools should revamp their debating clubs. They should reward the winning teams so that they can nurture a competitive environment that will improve the performance of student in mathematics
6. School administrators should enforce strict rules and regulations prohibiting the use of mother tongue within the school premises.

Conclusion

The study has established that mother tongue interference has no influence on secondary school students performance in mathematics in Makurdi local government area of Benue state. Further research would need to be undertaken to examine the trends that emerged in this study in greater depth.

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