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Research Article

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Mathematics Teachers' Assessments Of The Impact Of Universal Basic Education Programme On The Implementation Of The 9-Year Basic Education Mathematics Curriculum

Unamba, Eugene Chukwuemeka, Dr. Okoro Ifeyiniwa Felicity

Department Of Primary Education Studies Alvan Ikoku University Of Education,Owerri
E-Mail: Unambaec@Yahoo.Com

Department Of Curriculum And Instruction Alvan Ikoku University Of Education
Email: Felicity5k@Yahoo.Com

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ABSTRACT

Corresponding Author:
Unamba, Eugene Chukwuemeka

Abstract

The study investigated mathematics teachers' assessment of the impact of universal Basic education (UBE) programme goals on the implementation of the 9-year Basic education mathematics curriculum. Based on the purpose of the study, three research questions and three hypotheses guided the study. The population consisted of all mathematics primary school teachers in Owerri Educational Zone of Imo State. A sample of one hundred and fifty (150) mathematics primary school teachers was randomly drawn from two (2) local governments(1 urban and 1 rural) Areas. Researchers made four points modified likert-type of questionnaire titled MATA19EMC with reliability coefficient of 0.82 was used for data collection. The data generated were analyzed using mean, standard deviation and Z-test statistical tools. The results of the study showed that irrespective of gender mathematics teachers at the basic educational level had positive assessment of the impact of universal Basic Education on teachers training and re-training and provision of instructional facilities/ instructional materials, poor assessment about the impact of UBE on provision of mathematics laboratory at the Basic educational level was recorded. It was recommended among others that mathematics laboratories should be provided in primary schools where mathematics teachers and pupils can use them to improve teaching and learning of mathematics.

KEYWORDS:.

Introduction

The world today is undergoing major transformations. The global transformations are multidimensional, affecting the technological, economic, social, cultural and political developing societies like Nigeria. Education has

remained an instrument of change and national development. it is a social process and the medium for the acquisition of relevant knowledge, skills and attitudes for survival in a changing world. The focus of education system all over the world is the development of the human capital required to meet present and future challenges of globalization and knowledge economy (Dike 2004) .Consequently, the second International Congress of Technical and Vocation Education held in Seoul, Korea identified challenges that would inform changes in education worldwide as:

- Population growth and rapid urbanization
- Poverty and lack of skills for income generation and
- Low participation rate in technical and vocational education (Obioma ,2011)

Hence the National Economic Empowerment and Development Strategy (NEEDS) recognizes that Nigeria's economy could only be transformed and sustained through education that empowers the people and assures the technological development of the country. No wonder education is a foundational component of Nigeria transformation. Hence between 2008 and now, the country has witnessed two major curriculum reform initiatives at the basic education namely; the 9-year Basic Education Curriculum (BEC) September 2008-August 2014 and (2) the revised 9-year Basic Education Curriculum September 2014-date. The 9-year Basic Education Curriculum was particularly developed for the attainment of the Education for All (EFA). It was developed in response for Nigeria's need for relevant, dynamic and globally competitive education that would ensure that learners at the basic education level are capable to compete favorably anywhere in the world in terms of knowledge, skills, techniques, values and aptitude. The philosophy of the 9-year basic education curriculum as stipulated by the Nigeria Educational and Development Council (NERDC) is that every learner who has gone through the 9-year of basic education should have acquired appropriate levels of literacy, numeracy, manipulates, communicative and life-skills as well as the ethical, moral and civic-values required for laying a solid foundation for life-long learning as a basis for scientific and reflective thinking. In line with the philosophy, the revised 9-year basic education curriculum was development by the Nigeria Educational Research and Development Council from the primary and junior secondary curricula. The new curriculum has been approved by the Federal Government and the existing primary and junior secondary curricular have been reviewed to meet the needs of the pupils and students, respectively. The revised 9-year basic educations curricular in Nigeria were categorized according to levels and the age of the pupils and students from primary 1-3, 4-6 and JS 1-3. The basic education curriculum has three components namely:

- Lower basic education curriculum for primary 1-3 age 6-8 years
- Middle basic education curriculum for primary 4-6 age 9-11 year
- Upper basic education curriculum of junior secondary age 12-14 year

The revised BEC comprises ten (10) subjects namely: English studies ,Mathematics, Basic science and technology, Religion and natural value ,Cultural and creative arts, Business studies ,Nigerian languages Pre-vocational studies , French and Arabic (FME, 2012).

In the revised 9 years basic curriculum, mathematics is one core compulsory subjects .The restructured mathematics curriculum for the primary schools is focused on giving the children the opportunity to acquire mathematical literacy, numeracy, manipulative, communicative skills and cultivate understanding of the skills necessary for the changing technical world. According to Ojerinde (1999) mathematics is a tool to use in science, technology and industries, and if mathematics is really the tool for use in science, technology and industries then the mathematics curriculum should be such that will have leading contents to those areas and involvement of competent mathematics teachers that will be abreast with the new changes. Obioma (2006) also noted that the total development of the learner will depend to a large extent on the implementation of an appropriate curriculum by teachers. For easy implementation of the mathematics curriculum in the primary school effort have geared towards teacher's capacity building on the use and selection of instructional materials, and orientation and sensitization of teachers at basic education level. This sensitization project is aimed at equipping the teachers on the innovative strategies that enhance teaching and learning especially in mathematics and one agency responsible for basic education at the primary school is universal Basic Education (UBE).

The Universal Basic Education programme, an educational reform programme of the federal government of Nigeria was introduced to serve as a catalyst for achieving free, compulsory and universal 9-year education for all school age children irrespective of their socio-economic circumstance (Federal government of Nigeria 2006). The Universal Basic Education (UBE) programme was launched on 29th September 1999 by former President Olusegun Obasanjo in Sokoto, Sokoto State. UBE Act (2004) which was signed into law in May 2004 provided the legal framework for the programme and an indication of its effective take off. The UBE was launched with a wider scope, which provides a nine year universal, free and compulsory education covering primary and junior secondary education. The objectives of the Universal Basic Education are as follows;

1) Provision of free Universal Education training for Nigerian child of school age
2) Non-formal skills and apprenticeships training for adolescent and youth who have not had the benefit of formal education.
3) Development in the entire citizenry a strong consciousness for education and strong commitment to its vigorous promotion.

Ahmed (2006) also highlighted the roles of the UBE in teachers development to include; training and re-training of teachers, provision of basic instructional materials to schools, school based assessment and basic computer skills, sensitization of teachers on the four core subjects in the 9-year basic education curricula i.e. English Studies, Mathematics, Social Studies and Basic Science and Technology through the Nigerian Educational Research and Development Council (NERDC) and the National Teachers Institute (NTI). Ivowi (2008) noted that right from basic education to tertiary education level, there are shortages of trained teachers and even the available ones are not properly provided with textbooks, conducive classrooms, laboratory equipments, and refreshing courses. Mehmet (2007) analyze the newly developed elementary school mathematics curriculum by considering 5th grade students and classroom teacher's views. The findings indicated that several changes have been done and reflected into the classroom implementation and student-centered approaches have incorporated into the instruction.

Meremikwu & Kalu (2013) investigated National mathematics curriculum for BEP (Basic Education Programme) and the MDG (Milleimium Development Goals) for mathematics teachers in Nigeria. The findings revealed inadequacy in both human and material resources for implementation of the UBE projects , public primary school teachers also higher attendance to re-training programmes than others but attendance were still low(below 50%) and inadequacies in availability of resources for implementation and proper for taking off.

Awofala , Oluwa & Fatade (2012) investigated the perception of primary and junior secondary mathematics teachers on the new 9-years basic education mathematics curriculum in Nigeria. Results showed that teacher's perception of the revised 9 years basic education mathematics curriculum was high and their perception were neither gender sensitive nor academic qualification specific. However, teacher showed a high degree of ownership of the content of the new basic education mathematics curriculum despite their lack of necessary training in the principles of understanding the curriculum.

The study, therefore, intents to investigate (lower and middle Basic Education) mathematics teacher's assessment of the role of universal basic education programme in implementing the 9-years basic education mathematics curriculum with emphasis on UBE goals as re-training of teachers, provision of classroom blocks and libraries, and provision of laboratories and laboratory equipments

Purpose of the Study

The main purpose of the study is to investigate primary school mathematics teachers assessment of the role of UBE programme in implementing education mathematics curriculum specifically seek;

1. To find out primary school mathematics teachers assessment about the impact of universal basic education programme on training and re-training workshop in the implementation of the 9-years basic education mathematics curriculum.
2. To find out the extent primary school mathematics teachers assessment about the impact of universal basic education programme on provision of mathematics laboratory to primary schools to improve the teaching of mathematics.
3. To find out the extent primary school mathematics teacher assessment about the impact of universal basic education programme on adequacy of infrastructural facilities to primary schools for effective implementation of new curriculum.

Research Questions

The following research questions guided the study;

(1) To what extent do primary school mathematics teachers' assessment of the impact of Universal Basic Education (UBE) programme on training and re-training of teachers in improving teaching of mathematics?

(2) To what extent do primary school mathematics teachers' assessments of the impact of Universal Basic Education (UBE) on provision of mathematics laboratory to primary schools improve the teaching of mathematics?

(3) To what extent do primary school mathematics teachers' assessments on the impact of Universal Basic Education (UBE) on provision of adequate infrastructural materials to schools improve the teaching and learning of mathematics?

Research Hypotheses

The following hypotheses were tested at 0.05 level of significant.

1. Primary school mathematics teachers' assessment on the impact of Universal Basic Education (UBE) programme on training and re-training of teacher on the implementation of the 9-years Basic Education mathematics curriculum is not significantly dependent on gender.
2. Primary school mathematics teachers' assessment on the impact of the UBE programme on provision of mathematics laboratories to primary schools to improve teaching of the mathematics on the implementation of the 9-years Basic education mathematics curriculum is not significantly dependent on gender.
3. Primary school mathematics teachers' assessment on the impact of UBE on provision of adequate infrastructural facilities/instructional materials to school to improve the teaching and learning of mathematics on the implementation of the 9-years Basic Education mathematics curriculum is not significantly dependent on gender.

Methodology

The study adopted the analytical survey research design. According to Maduakolam (2004), a descriptive survey research seeks to collect detailed factual information that describes the nature of existing conditions. It assesses the characteristics of the whole population and usually study sample drawn from the population of the study. The population of the study comprised of all the public primary schools mathematics teachers from two (2) local government area in Owerri educational zone of Imo State with a population size of one hundred and fifty (150) teachers. This includes ninety (90) teachers from primary schools in one (1) local government in rural area and sixty (60) teachers from urban area. The researchers used purposive sampling technique in selecting schools that have at least four arm classes (A, B, C, and D) in every level (1-6) and simple random sampling technique was used to select the teachers. The instrument used for data collection was a modified likert four (4) points type of questionnaire titled Mathematics Teachers Assessment of Universal Basic impact on 9-years Education Mathematics Curriculum (MTAI9EMC) made up of two sections A and B. section A comprised of the demographic data of the respondent and section B comprised of the objective of the study. For any item to be accepted it must score above 2.50. The face and content validity of the instrument was determined by three experts, two from mathematics education and one from Curriculum Education. A trail- test was carried out on primary school teachers outside the sample of the study using Cronbach Alpha Coefficient method and reliability coefficient of 0.80 was established. The data collected were analyzed using mean and standard deviation for research question and chi-square statistical tools were used to test the hypotheses at 0.05 level of significant.

Research Question 1 : To what extent do mathematics teacher's assessment on the impact of Universal Basic Education programme on training and re-training of teachers improve the teaching of mathematics.

Table 1: Mathematics teachers' assessment of UBE on the implementation of the 9-years basic Education Mathematics Curriculum

S/n	Items	M	SD	Remark
1.	UBE workshops involved interaction with the mathematics teachers to change their approach to teaching from teacher centered to learner centered as the curriculum demands.	3.45	1.8	Accepted
2.	UBE workshops are intensive teacher professional development programmes	3.49	1.8	Accepted
3.	UBE workshops as intensive teacher professional development programmes should involve all mathematics teachers	3.63	1.9	Accepted
4.	UBE workshops on training and retraining of mathematics teachers should be done every year	3.40	1.8	Accepted
5.	UBE workshops for mathematics teachers enables them to learn new approaches for facilitating active learning of the subject	3.66	1.9	Accepted
6.	Mathematics teachers need UBE training and retraining workshops to provide opportunities for them to learn from one another as it concerns the 9-years Basic Education Curriculum	3.47	1.8	Accepted
7.	UBE workshops enable the mathematics teachers to update their knowledge and fill the gaps on the subjects as contained in the curriculum	3.58	1.8	Accepted
8.	UBE workshops for teacher ensures the realization of the objectives of the Basic Education Curriculum	3.47	1.8	Accepted
9.	UBE workshops aims at improving the performance of mathematics teachers through the use of instructional materials	3.43	1.8	Accepted
10.	UBE workshops aims at improving the performance of mathematics teachers through the improvisation of instructional materials	3.46	1.8	Accepted

Result in table 1 shows that all the items scored above 2.50. This implies that mathematics teachers had good assessment about the impact of universal basic education programme on training and retraining of teachers in the implementation of the revised 9-years basic education mathematics curriculum.

Research Question 2 : To what extent do Mathematics Teacher's Assessment on the impact of Universal Basic Education (UBE) on provision of mathematics laboratories to primary schools improve the teaching of mathematics?

Table 2: Mean and Standard Deviation on provision of mathematics laboratory

S/n	Items	Mean	S.D	Remark
11.	UBE provide mathematics laboratory in our primary schools	1.3	08	Rejected
12.	UBE provides laboratory equipments for teaching mathematics	1.9	1.0	Rejected
13.	Provision of mathematic laboratory by UBE is of educational standard	1.7	0.9	Rejected

Result in table 2 shows that, all the item were rejected and scored below 2.50. This implies that mathematics teachers had very low assessment on the impact of Universal Basic Education (UBE) on provision of mathematics laboratory to improve teaching of mathematics in the implementation of the revised 9-years Basic Education Mathematics Curriculum.

Research Question 3 : To what extent do Mathematics Teachers' Assessment about the impact of Universal Basic Education (UBE) on provision of infrastructural facilities and instructional materials to schools to improve teaching and learning of mathematics

Table 3: Mathematics teachers' Assessment of the UBE provision facilities and materials to schools to improve teaching and learning of mathematics

S/n	Items	M	Sd	Remark
1.	UBE provision of instructional materials to schools aid the teaching and learning of mathematics	3.44	1.8	Accepted
2.	UBE provision of instructional facilities to schools improves the teaching and learning of mathematics	3.29	1.8	Accepted
3.	UBE provision of infrastructural facilities to schools should go round all the schools	3.44	1.8	Accepted
4.	UBE construction of classrooms blocks to schools is a moral buster to effective teaching and learning	3.35	1.8	Accepted
5.	UBE construction of classroom blocks to schools should cut across all the primary and junior secondary schools.	3.36	1.8	Accepted
6.	UBE support in the distribution of the 9-years Basic Education Mathematics Curriculum to	3.55	1.8	Accepted

schools aid the teaching and learning.

Result in table 3 shows that, all the items scored above 2.50. This implies that mathematics teachers had a positive assessment of the impact of UBE on provision of infrastructural facilities and instructional materials to schools to improve the teaching and learning of mathematics.

Hypotheses Testing

HO1: Mathematics Teachers' assessment on the impact of Universal Basic Education (UBE) programme on training and re-training of teachers on the implementation of the revised 9-years Basic Education Mathematics Curriculum is not significantly dependent on genders.

Table 4: Chi-square analysis on gender

X^2	X^2_{tab}	df	α	Decision
14.432	5.991	2	0.05	Reject H_O

Results in table 4 shows that $X^2 = 14.432 < X^2$ 0.05, 2 = 5.991, we reject H_O and conclude that Mathematics Teachers assessments is dependent on gender.

HO2: Mathematics Teachers assessment on the impact of UBE programme on provision of mathematics laboratories to primary schools to improve teaching of mathematics on the implementation of the revised 9-years Basic Education Mathematics Curriculum is not significantly dependent on

Table 5: Chi-square analysis on gender

X^2_{cal}	X^2_{tab}	df	α	Decision
14.732	5.991	2	0.05	Reject H_O

Results in table 5 shows that $X^2 = 14.732 < X^2$ 0.05, 2 = 5.991, we reject H_O and conclude that mathematics teachers assessment is dependent on gender.

Ho3: Mathematics Teachers' assessment on the impact of UBE on provision of adequate infrastructural facilities and instructional materials to improve the teaching and learning of mathematics on the implementation of the 9-year Basic Education Mathematic Curriculum is not significantly dependent on gender.

Table 5: Chi-square analysis on gender

X^2_{cal}	X^2_{tab}	df	α	Decision
23.247	5.991	2	0.05	Reject H_O

Results in table 6 show that $X^2 = 23.247 < X^20.05, 2 = 5.991$, we reject and conclude that mathematics teacher's assessment is dependent on gender.

Discussion

The findings of this study showed that the mathematics teachers at the Basic Education level had positive assessment of the impact of the UBE on the teacher training and retraining. The hypothesis showed that teacher training and retraining is dependent on gender. This result is in line with the findings of Awofala , Oluwa & Fatade (2012) investigated the perception of primary and junior secondary mathematics teachers on the new 9-years basic education mathematics curriculum in Nigeria. Results showed that teacher's perception of the revised 9 years basic education mathematics curriculum was high and their perception were neither gender sensitive nor academic qualification

The findings of the study also revealed that, mathematics teachers had a very low assessment about the impact of UBE on provision of mathematics laboratory to improve teaching of mathematics. The hypothesis showed that provision of mathematics laboratory is dependent on gender. This result is in accord with the findings Adeniran (2000) stated that on single standard laboratory for primary, secondary and colleges of education in Nigeria where the students and teachers of mathematics are being trained.

Also the results showed that, mathematics teachers in primary schools had a positive assessment on the impact of UBE provisions of instructional facilities and instructional materials. The hypothesis showed that provisions of instructional facilities and instructional facilities are dependent on gender. The result of the study is in accord with the findings of Awofala , Oluwa & Fatade (2012) investigated the perception of primary and junior secondary mathematics teachers on the new 9-years basic education mathematics curriculum in Nigeria. Results showed that teacher's perception of the revised 9 years basic education mathematics curriculum was high and their perception were neither gender sensitive nor academic qualification specific

Conclusion

The implementation of 9-years Basic Education Curriculum especially in mathematics curriculum is a collaborative effort between the teacher, the learner and non-governmental agencies. The mathematics teacher assessment in the implementation of the 9-years Basic Education Mathematic Curriculum have showed that UBE have effectively prepare teacher for teaching and learning, provision of infrastructural facilities and instructional materials while lack of mathematics laboratory has been identified

Recommendations

(1) Regular training seminars and workshops should be organized for mathematics teachers to enable them acquire the pedagogical disposition for implementing the revised 9-years Basic Education Curriculum in Nigeria.
(2) The training of teachers by UBE should cut across all subjects at the basic Education levels and all teachers should be trained.

(3) Follow up activities should be introduced to ensure that what the teachers learnt at the training workshops were implemented after the workshop.

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