



Challenges of early childhood instruction in mathematics in Nigeria: a case study of early childhood centres in Ondo town

Idiong US

Department of Mathematics, Adeyemi College of Education, Ondo, Nigeria; Email: usidiiong@gmail.com

Article History

Received: 22 January 2016

Accepted: 03 March 2016

Published: April-June 2016

Citation

Idiong US. Challenges of early childhood instruction in mathematics in Nigeria: a case study of early childhood centres in Ondo town. *Science & Technology*, 2016, 2(6), 115-120

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General Note

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ABSTRACT

This paper examines the challenges of early childhood instruction in Mathematics in Ondo West Local Government Area of Ondo State. The UNESCO goals for Early childhood Education is to expand and improve comprehension for early childhood, provide free and compulsory primary Education for all, promote learning and life skills for young people and adult and to improve the quality of Education. The results of the study provide the teaching technique to be possessed by the teacher for them to be effective. The objectives of the paper were to investigate the teaching techniques, instructional material, teaching qualification and mode of improving pupil's academic ability. 100 questionnaires were administered to gather the relevant information need. The statistical analysis was using chi-square statistic. Findings showed that majority of the teachers sampled were professionally qualified for the teaching of early childhood Mathematics and have interest and love for the profession. However, it is seen that there is significant relationship between teaching technique and children learning abilities.

Keywords: Early childhood, instruction, learning, teaching.

1. INTRODUCTION

1.1. Background of Study

Education for All (EFA) is a global commitment to provide quality basic education for all children. EFA was launched at the World Conference on Education for All in 1990 (UNESCO: in NCTM and NAEYC, 2010). Education for All is also goal number 2 of the Millennium Development Goals (MDGs). The children form a great proportion of the All mentioned. One of the goals of Education is to provide pupils with basic numeracy which Mathematics provides. Mathematics is an essential subject that is vital for human development and its study cuts across all age groups. The American National Council of Teachers of Mathematics (NCTM) and the National Association for the Education of Young Children (NAEYC) (2010), affirm that high-quality, challenging, and accessible mathematics education for 3- to 6-year-old children is a vital foundation for future mathematics learning. In every early childhood setting, children should experience effective, research-based curriculum and teaching practices. Such high-quality classroom practice requires policies, organizational supports, and adequate resources that enable teachers to do this challenging and important work. NCTM & NAEYC (2010) also took the position that:

Mathematics helps children make sense of their world outside of school and helps them construct a solid foundation for success in school. In elementary and middle school, children need mathematical understanding and skills not only in math courses but also in science, social studies, and other subjects. In high school, students need mathematical proficiency to succeed in course work that provides a gateway to technological literacy and higher education. Once out of school, all adults need a broad range of basic mathematical understanding to make informed decisions in their jobs, households, communities, and civic lives.

Early childhood education (nursery and kindergarten) are vital stage of education that offer concrete foundation for future educational nourishment and development of children through life. Researchers have shown that early childhood education provide the overall skills to the political development of a society. Since these are crucial stages in the education of the growing child, utmost care must be taken not to jeopardize their growth and development. Bruce (2011) concurs with this view when she posits that:

Children need adults who are trained to a high level in their knowledge and understanding of child development and educated in the humanities, arts and science so that they can help children to learn effectively, achieve, enjoy and make a contribution. The philosophy of early childhood education is embedded in the knowledge, attitudes and practical skills that children between the age brackets 0-5 years learn mathematics especially through practical activities.

Early childhood education is vital for equipping the child for the primary school level. It is believed that knowledge is further reduced into smaller bits for easy learning by the child. The philosophy of any early childhood educator emphasizes that teaching and learning mathematics process are through practical activities and based on what exists in the child's environment.

1.2. Statement of Problem

Stemming from the work of Osho *et al*(2014), since the inception of the implementation of the National Policy on Education in Nigeria lots of concerns have been raised by stakeholders in respect of the quality of education in Early Childhood Development and Education and its actual implementation. Despite all measures put in place by the Federal Ministry of Education in Nigeria, there are still some lapses in the implementation and non-implementation of this program. The evaluation of the level of success or failure of the implementation level of government policy on early child education as it relates to the teaching and learning of Mathematics has necessitated this study. The level of failure of students in junior and senior secondary school examinations in Mathematics has also necessitated this study. Could their failure at this point be traceable to their poor foundation and appreciation of the subject as pre-primary infants?

In relation to the present problem of insecurity in our nation, we notice that most of the insurgents today are a product of neglect of early childhood education. Most of the terrorists metamorphosized from the Alimanjeri's who are otherwise called "Holy beggars". Mathematics by nature induces a probing mind, enduring attitude and keeps children busy with problems to solve. But in its absence, the children put their energy to work, creating disturbances and eventually become problem to their parents and the society at large. If we can keep our children busy, the devil will not use them as tools of destruction.

1.3. Objectives of the Study

This project seeks to assess the level of implementation of ECE in Ondo West local government area of Ondo state, Nigeria. Ondo West local government hosts a great Educational institution, Adeyemi College of Education. Like we will normally say that charity begins at home we will start at our immediate environment to see the level of compliance and implementation by early childhood centers as it affects the teaching learning of Mathematics. From observation, the local government can be said to be the education town of Ondo state which is widely known for its high level of intellectual productivity in the South-Western part of Nigeria.

1.4. Research Questions

- a) Do we have adequate qualified teachers/instruction in early childhood and care education?
- b) Do they have mastery of mathematics at this level?
- c) Do they make use of instructional materials?
- d) Do the pupils learn better? When they are taught with instructional materials?
- e) Which are the teaching techniques for instructing children in this category?

2. LITERATURE REVIEW

According to Oyewunmi *et al* (2010) ECE in Nigeria started with the British colonial masters. At that time only wealthy parents could afford to send their children for such education.

The launching of Education for All at the World Conference on education held in 1990 and the Universal Primary Education (UPE), an initiative that afforded free education proved to be the lifeline for the children from poor homes. As more children were sent to school the availability of these children for household servants (child labour) declined rapidly (Osho *et al*, 2014).

Akinbote (2006) differed in the origin of pre-school in Nigeria. Church premises served as the venues for the schools, organized by missionaries, with their wives often in charge of their children and those of their members. In such settings, it was obvious that there was no standardized and uniform curriculum that was followed for pupils' instruction and hence there was no balanced development of the pupils. Also this was only a one sided view as the Islamic schools were left out in the teaching of children Arabic education which out-rightly omitted some vital contents which included the teaching of numeracy.

The proliferation of Nursery schools established by private individuals from the mid 70s till date has also helped in great deal the implementation of ECE in Nigeria. The need for increase in the number of nursery and daycare schools establishment during this era was due to the influx of Europeans and Americans into the country because of the rich business opportunities that was available to them. Career men and women who wanted their children out of home while leaving for their places of work also found solace in the day care/ nursery schools as they were commonly called in Yoruba language "Jelosimi". This trend has continued increasingly till date and has made establishment of such schools to be on high demand.

According to Federal Ministry of Education (2012), Nigeria subscribed to the Convention Rights of the Child (CRC). In order to domesticate it, a National Policy for Integrated Early Childhood Development (IECD) was developed and adopted in 2007. It was geared at accommodating children between the ages of 0 to 5. This was consequent upon the discovery that the growth, survival, and development of children within this age group are mutually dependent. The policy would incorporate and develop further interventions on the Nigerian child from relevant sectors. It is based on the premise that ECE for these children, which caters for their physical, mental and social development, is heavily dependent on families and caregivers support.

Pallas (2012) states that Educators and policy makers in Nigeria have come to recognize that Nigerian schools are under serving students in the area of mathematics, and mathematics needs to be a central component of early childhood education. Schools in the Nigerian have neglected mathematics in the early childhood years. Researcher indicates that pre-school children arrive with a competent informal understanding of mathematics.

Like in the United States of America that "No child left behind act" should be adopted and programmes should be put in place to ensure that all children have equitable high quality and challenging mathematics education.

3. RESEARCH METHODOLOGY

In this section, we discuss the research design, the population of study, sample and sampling technique, validation of Instrument, data analysis instrument, research hypothesis, instrument for data collection, administration of instrument.

3.1. Research Design

The research is basically designed to examine the status of challenges of early childhood instruction in mathematics in Ondo West Local Government Area in Ondo State. The research is experimental research were collected through the administration of questionnaire on teachers and inferences were from the outcome of the processed data collection.

3.2. Population of the Study

All the Teachers in Nursery and day care schools in Ondo Township constitute the population of the study.

3.3. Sample and Sampling Technique

The sample consists of ten selected Nursery and Day care schools for the purpose of this study. The school will be selected based on simple random sampling techniques in which all the school have equal chance of being selected.

3.4. Research Instrument

The instrument that was used by the researcher is the questionnaire; this was used to collect the relevant information to show the contribution of teachers on the challenges of early childhood instruction in Mathematics in Ondo West, Ondo State.

3.5. Validation of Instrument

The questionnaire used were constructed in such away that adequate answer were provided for findings in this research, the questionnaire consist of 17 statement which focused on the various component on the challenges of early childhood instruction in Mathematics, the questionnaire was designed for the teachers to be completed and this include: qualification, sex, age and years of teaching experience to be answered. The instrument was validated by two researchers before they were administered.

3.6. Research Hypothesis

1. Qualification for teachers versus pupils understanding:

H_0 : There is no significant relationship between qualifications of teachers and pupils understanding.

H_1 : There is significant relationship between qualification of teachers and pupils understanding.

2. Use of instructional material versus children learning in mathematics

H_0 : There is no significant relationship between use of instructional materials and children learning in mathematics.

H_1 : There is significant relationship between use of instructional materials and children learning in mathematics.

3. Teaching technique versus children learning

H_0 : There is no significant relationship between teaching technique and children learning.

H_1 : There is significant relationship between teaching technique and children learning.

3.7. Data Analysis Instrument

The data collected for the study was analyzed using chi-square statistics.

3.8. Instrument for Data collection

The instrument used for collection data for this study is questionnaire to be designed in the researcher the questionnaire is one of type and is for teacher alone, the qualification, sex, age and years of teaching experience is included.

3.9. Administration of instrument

The questionnaires were administered discretely and personal by the researchers in the selected, school, the assistance of some teachers of the schools to be used will also be sought during the course of the administration of the questionnaire.

4. DISCUSSION OF RESULTS

This section shows the results and data analysis of the data collected based on the challenges of early childhood instruction in mathematics chi- square was used to an analysis the data

4.1. Teaching Qualification versus pupils understanding

H₀: There is no significant relationship between qualification of teacher and pupils understanding.

H₁: there is significant relationship between qualification of teacher and pupils understanding.

Variable	Chi-square calculated	Chi-square table	Df	Remark
Teacher Qualification	18.00	14.67	9	Significant

From the table χ^2 - calculated (18.00) was greater than χ^2 - table (14.67) at 5% level of significant. Therefore, Null hypothesis was rejected, while alternative hypothesis was accepted this imply that there was significant relationship between qualification of teachers and pupils understanding.

4.2. Use of instructional material versus children learning in mathematics

H₀: There is no significant relationship between use of instruction materials and children learning in mathematics.

H₁: There is significant relationship between use of instruction material and children learning in mathematics.

Variable	Chi-square calculated	Chi-square table	Df	Remark
Instructional materials	24.00	23.50	16	Significant

From the table, χ^2 - calculated (24.00) was greater than χ^2 - table (23.50) at 5% level of significant. Therefore, null hypothesis was rejected, while alternative hypothesis was accepted. This implies that there was significant relationship between the use of instructional materials and children learning in mathematics.

4.3. Teaching technique versus children learning

H₀: There is no significant relationship between teaching technique and children learning

H₁: There is significant relationship between teaching technique and children varying.

Variable	Chi-square calculated	Chi-square table	df	Remark
Teacher Techniques	24.00	28.41	20	Not Significant

From the table, χ^2 - calculated (24.00) was less than χ^2 - table (28.41) at 5% level of significance. Therefore, null hypothesis was accepted, while alternative hypothesis was rejected. This implies that there was no significant relationship between teaching technique and children learning.

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary

Improving early childhood teacher preparation and organizing professional development is an urgent priority. In mathematics, as in literary and other areas, the challenges are formidable but research based solution are available. To support children's mathematical proficiency, every early childhood teacher's professional preparation should include these connected components

1. Knowledge of the mathematical content and concept must relevant for young children –including in –depth understanding of what children are learning point toward the horizons of later learning
2. Knowledge of young children's leaning and development in all areas- including but not limited to cognitive development and knowledge of the issues and topic that may engage children at different point in their development
3. Knowledge of effective ways of teaching mathematics to all young learners
4. Knowledge and skill in observing and document young children's mathematical activities and understanding
5. Knowledge of resources and tools that promote mathematical competence and enjoyment.

5.2. Conclusion

A positive attitude towards mathematics and a strong foundation for mathematics learning being in early childhood these good beginnings reflects all the characteristics of good early childhood education. Deep understanding of children development and

learning is necessary. A strong community of teachers, families and children, research based knowledge of early childhood curriculum and teaching practices, continuous assessment in the service of children's learning and abiding respect for young children's families, cultures and communities. To realize this vision, educators, administrators, policymakers, and families must work together raising awareness of the importance of mathematics in early education, informing others about sound approaches to mathematical teaching, learning and developing essential resources to support high quality, equitable mathematical experience for all young children

5.3. Recommendations

In the light of the findings the following recommendation are suggested:

- 1.To enhance children's natural interest in mathematics and their disposition to use it to make sense of their physical and social worlds
- 2.Build on children's experience and knowledge, including their family, cultural, and background, individual approaches to learning and informal knowledge
- 3.To provide for children's deep and sustained interaction with key mathematical ideas
- 4.Integrate mathematics with other activities and other activities with mathematics
- 5.Support children's learning by thoughtful and continually assessing all children's mathematical knowledge, skill and strategies.
- 6.Actively introduce mathematical concepts, methods, and language.
- 7.Teachers at this level need adequate financial motivation. Early childhood workers are among the least paid academic workforce. They earn far less than the minimum age in comparison to other employees.
- 8.Teachers at this level should be encouraged to go for further studies and training to enhance their teaching skills and competence as growing rate of ICT integration into early childhood instruction is taking a fast dole.

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