VISION AND MISSION OF PRIMARY MATHEMATICS EDUCATION IN THE 2J[ST] CENTURY

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Abstract

Mathematics has generally been accepted as the foundation of science and technology. In this 21[SI] century, Mathematics has become the central focus of all scientific investigation and also the only language culture common to all studies and human development. The foundation of education is (he primary level, and a house built on a weak foundation will collapse with time. There is need for a revamping of primary mathematics education in order to ensure that Nigerian students get a strong foundation in the knowledge of mathematics. This paper therefore discusses the vision and mission of primary mathematics education in the 21st century and proffers strategies for making the vision realizable and the mission attainable.

Introduction

The commencement of this century has witnessed a lot of break through in science and technology. We are very much aware of the high levels of sophistication on the use of computers and its application in INTERNET services and information technology. These break through are the results of pain staking research work of science and technology. There is no doubt that the foundation of science and technology is mathematics. The desire of the nation is national development using education. No national development can take place in this 21st century without emphasis being place" on science and mathematics oriented subjects. The nations of the world are advancing in industrialization and this can be done if the education of Nigerians result in high manpower in science, technology and industrial engineering. For this to occur, our students must be mathematically equipped.

Education can be regarded as an edifice constructed specifically for meeting the needs of the society. In building construction theory, the foundation of a house determines the quality, strength and durability of that house. If the foundation is good, the house will be very solid. The reverse is the case if the foundation is very poor. The primary level forms the foundation of this education edifice Developmental psychologists affirm that the early years of a child's life determine the future physical-social, emotional and intellectual capabilities of the child. Proper and sound exposure to the right stimulation will ensure that the child who as Fafunwa (1971) asserts is "the father of the man", grow; up to become a useful and responsible member of the society.

Since the foundation of mathematics is primary level and a house with weak foundation will collapse with time, there is need to ensure that Nigerian students get a strong foundation in the knowledge of mathematics. This paper therefore focuses on the vision and mission of primary school mathematics education and discusses some strategies for making the vision realized and missions attainable.

Concept of Vision and Mission

Vision is a mental creation; a mental and intellectual perception of what is desired and; a situation, outcome, condition or environment that an individual or group, organisation or system would deliberately wish to create and see materialized. Vision according to Obani (1998) is a compelling force, a scenic painting on the mental canvas of the individual or on the policy canvas of an organization or a system such as the education system. A vision invariably has an in-built time frame and broad guidelines of actualizing factors. In short a vision is an idealized perception of future conditions or outcomes with in-built routes and suggested means of achievement. Vision is often about new realities, often futuristic and often idealistic. Another related concept to vision is mission.

Mission is the act of sending to perform a function; the purpose of being somewhere or the aim of doing something. Mission can also be described as the actualization of visions, which are sometimes ambitious dreams. Whereas vision is more conceptual, mission is more practical - a kind of translation of the ideals or realities of visions into pragmatic actualities. Mission is a single-minded

activity or set of activities directed at achieving definite goals.   Mission represents the processing of the raw materials provided by vision into the finished products - the desired ends.

Vision **of Primary** School **Mathematics Programme of the** 21st **Century**

The Universal Basic Education (UBE) scheme which was inaugurated by the present civilian head of state, President Olusegun Obasanjo in September 1999, is the boat through which the nation hopes to sail to the port of educational development. The primary level is the foundation of the UBE scheme. Proper implementation is essential at this level if the scheme is not to collapse. Numeracy or development of basic arithmetic skills is highlighted in the scheme.

In the 21st century, the primary mathematics curriculum should be the type that will enhance the adaptation of the child to the changing world of technological advancement and enable him to function properly within his limited capability. It is anticipated that this twenty-first century will witness an era of gender equality in African countries especially Nigeria where the effect has not yet been found. It is a well-acclaimed fact that girls tend to shy away from mathematics, Ezugbo (1996) observed that in various faculties in any Nigerian University, there are more females in Arts, Law and Social Science than in Mathematics related professional courses such as engineering, Medicine and Science. The mathematics curriculum for the twenty-first century should include activities that will promote gender equality in mathematics at the foundation stage of exposure to mathematics learning.

More training facilities for primary mathematics would be provided. There will be more colleges of education for the training of primary mathematics teachers. Parents will play more prominent role in the education of their children and will no longer be persuaded to enroll their children for the compulsory education.

It is anticipated that the world will witness more global computerization in the 21[si] century. We expect that by the next decade, our children will be able to log in on the INTERNET at primary level. The primary mathematics teachers of the 21st century in Nigeria will be computer literate and will thus be able to pass their knowledge to their pupils as we cope with the challenges of the society.

The primary mathematics teacher of the 21[sl] century will be characterized by marked flexibility and versatility. He will be more amenable to innovations due to the emergence of new technologies. He will be a repertory of new knowledge and a facilitator of learning.

Mission of Primary Mathematics Education in Nigeria

Primary education is the "education given in an institution to children aged normally six (6) to eleven (11) plus years (NPE, 2004). The mission (objectives) of primary education (NPE, 2004) are as follows:

(1) The inculcation of permanent literacy and numeracy, and the ability to communicate
    effectively.

(2) The laying of a sound basis for scientific and reflective thinking.

(3) Citizenship education as a basis for effective participation in and contribution to the life of the society.

(4) Character and moral training and the development of sound attitude.

(5) Developing in the child the ability to adapt to his changing environment.

(6) Giving the child opportunities   for developing manipulative skills that will enable him function effectively in the society within the limits of his capacity.

(7) Providing basic tools for further educational advancement including preparation for -trades and crafts of the locality.

The missions of primary mathematics education are therefore dependent on the mission of primary education. The mission of primary school mathematics education according to Kalejaiye (1985) are as follows:

To provide the child with the necessary basic skills in numeracy.
To expose him into ways of applying these skills to his problems.
To provide the child with the basic manipulative skills useful in ordinary life.
To provide the child with the basic skills in logical thinking.
To introduce the child to the basic concept of spatial relationships.
To introduce the child to the basics of record keeping and all aspects of accounting.

The inculcation of permanent numeracy as first among the stated goals for primary education stresses the need for every child to be mathematically literate.

Developing in the child the ability to interact and manipulate with numbers according t; Salman (2002) would afford the child the opportunity to compare and estimate values of articles... determine prices of foodstuff, reckon distances and time, prosecute daily business, interpret mathematical graphs and charts, weigh evidences and think logically.

Rabiu (2000) was of the view that one of the primary goals of mathematics instruction at the primary school level   is to develop in the child computational skills because the child needs proficiency in recalling basic number facts, using a standard algorithm with reasonable speed and I accuracy and estimating of computational procedure.

Johnson and Rising (1972) assert that to learn mathematics and use it requires a mastery of computation. A mastery of computation skill according to the author requires practice, repetition and i drill.   It is therefore necessary for primary school teachers to expose children to variety o: computations, especially the basic concepts in arithmetic, such as addition, subtraction, multiplication and division of numbers.

Recommendations

The following modest strategies on how to make the visions realizable and missions attainable are discussed below:

Odogwu (2003) noted that continuous in-service training is needed for effective implementation of the primary mathematics programme of the 21[bl] century. This training should exploit the potentials of new information technology for adequate re-training of practicing teachers. The training of mathematics teachers using new technologies challenges teachers' conception o:" mathematics, the teaching and learning of mathematics with technology.

Presently, emphasis is on acquisition of computational skills and mastery of ideas. However, it is expected that in this 21[sl] century, objectives should be broadened so as to attain a high level of creativity, positive attitudes, values and learning to learn (Tunde, 2000). "

Mathematics involves problem solving and pupils should be taught the problem-solving heuristics at this level. Teaching according to Adeniran (2003) should emphasize the relevance or mathematics to every day life. This naturally sparks up curiosity in a child e.g. (i) I saw 8 motor cycles on my way to school this morning. How many tyres did they have altogether? In addition to stirring up curiosity, the child can estimate the consumer to the problem and tell when the magnitude or size of the answer is wrong.

The evaluation of pupils' achievement, which is part of the teaching process, should be better implemented. Currently, tests measure content goals. In addition some textbooks now provide learners with self-testing exercises. However, in this century, the test should be constructed to measure creativity, attitudes, aptitudes and problem-solving skills. For effective evaluation of pupils' achievement, the issue of overcrowded classrooms should be properly tackled.

The teaching of mathematics with provision of high quality teachers in adequate quantities, provision of relevant textbooks and teaching aids is essential. The teaching materials presently in use are models, charts, measuring instruments, workbooks, and mathematical tables. But in this 21[sl] century, materials like computer devices, laboratory equipment and tools, audio-visual equipment should be introduced.

There is need for peace and progress in this century, which the world desires. Peace education according to Adedayo (2000) can be incorporated in subtle way in the primary school curriculum. Incorporating group work, projects in both teaching activities and assessment procedure can go a long way in developing pupils who will work peacefully towards a desired goal.

The present primary school curriculum needs improvement. Decimal fractions should be introduced at a much earlier period than is presently practiced. Number-bases is the backbone of the development of computers. There is need to introduce simple concepts of number bases at a much earlier period in the primary school mathematics curriculum.

The 21st century primary mathematics curriculum needs to place more emphasis on estimation since in every day life, one has to do one type of mathematical estimation or the other. Consumer mathematics should be given greater prominence and modern topics such as stocks and shares included. In the present primary mathematics curriculum everyday statistic is taught from primary four to six. Human beings are involved in statistical collection of data and relevance and importance of this should be taught right from primary one.

Teachers currently being trained to teach the primary school mathematics should be exposed to computer education and in-service computer training given to the other teachers teaching mathematics. If computers are available for the use and training of our pupils at the primary level, the gifted children can be encouraged to write programs and also to develop their mathematical skills through the use of Computer Assisted Instruction (CAI).

Conclusion

The 21^{sl} century calls for greater attention to the teaching of basic mathematics concepts at the foundational level of the school system since mathematics is the bedrock of scientific knowledge.

The paper advocates the need for exposure of all pupils at the primary school levels to computer literacy programmes. The government should ensure adequate power supply for the use of computers and INTERNET being advocated.

In order to improve the teaching and learning of mathematics in primary classes' the teacher should be able to create simple mathematics activities relevant to learners' level as well as the environment of the learner rather than being glued to the textbook activities which may or may not be very relevant to the learners' situation or experiences.

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