

REDIRECTING MATHEMATICS EDUCATION IN NIGERIA THROUGH ENTER-EDUCATE APPROACH

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Abstract

Current school mathematics curricula place some emphasis on developing skills of mathematics reasoning. This paper re-examines what is currently viable teaching-learning method (enter-educate approach) in school and how this compares with the general methods of teaching mathematics,

Introduction

Mathematics, a subject taught at school has distinct and peculiar nature, and problems different from science subjects. Some of these peculiarities are manifested in the ways of its teaching, and in its learning patterns. Mathematics teaching and learning in Nigerian classrooms is in a deplorable state. To the students, the subject is an abstract one difficult to learn. And to many teachers, the subject is all-important but its concepts are difficult to dispense. These two faces of mathematics instructional problems have continued to militate against satisfactory achievements in mathematics education in Nigeria.

Students' difficulty in learning mathematics is displayed in their poor achievements in various examinations beginning from the primary to the tertiary levels of education. Researches have been done to address these issues of teaching and learning of mathematics and the resultant poor achievement (Ezenweani, 1998; Umudhe, 1997) on principles and methods of mathematics instructions.

The needs for restructuring mathematics contents arise from the subject and research findings on its peculiarities. According to Badru (2000), the nature of mathematics as perceived by the students poses some difficulties that include:-

- (i) Difficulties experienced in problems solving in mathematics;
- (ii) Time involved in solving problems in mathematics; and
- (iii) Abstract nature of mathematics

Teachers consequently have been employing some of the modern methods in teaching specific topics as provided in the available textbooks and journals. Surprisingly, these inputs in the teaching-learning process have not improved the evaluation results in our schools.

This therefore forms the basis for this paper focusing on Enter-Educate Approach to the teaching and learning of mathematics at primary schools. In the next section, this paper discusses enter-educate approach at it is generally accepted, and how it can serve mathematical sciences.

Enter-Educate Approach/Characteristics

Enter-Educate is a coin-word for entertainment education. It is based on the premise that entertainment is powerful tool for education since it attracts people of all ages. Enter-Educate is didactical since it conveys instruction, information, entertainment and pleasure. According to Edozie (2003), entertainment is seen as something affording diversion or amusement especially in an exhibition or performance of some kind. Radio, television, music, videos, films, comic books and so on offer entertainment which can be exploited for educational purposes. Enter-educate is not new to traditional African societies because they have folklore, oral poetry, folk drama, folkdance, etc. with which they communicate messages.

According to Piotrow (1994) and McCauley and Salter (1995), the enter-educate approach is pervasive, popular, passionate, persuasive, practical, profitable, and proven effective (8ps). These eight characteristics of enter-educate approach are discussed:

- (i) **Pervasive** Entertainment is in every culture-therefore it is ubiquitous like the broadcast media which can reach people all over the world. Entertainment, consciously or unconsciously, is a part of human gathering and no matter the form it takes, it has the potential of conveying messages and bringing about learning,
- (ii) **Popular** Everyone loves entertainment. In fact, people seek out entertainment, pay attention to it. and spend good money to get it. But enter educate uses the same media to counter wrong information which glamorizes unsafe behaviour by using popular performers and entertaining formats to encourage responsible behaviour,
- (iii) **Personal** Entertainment can depict personal situations and relationships (McCauley and Salter, 1995). One may personally learn from the entertainment piece especially when it is close to the situation one is passing through,
- (iv) **Passionate** Enter-educate easily engages affective domain. It could be touchy and emotive, and thus can generate intense feelings, which can enhance teaching and learning,
- (v) **Persuasive** Enter-educate helps to change behaviour. This is because it is effective, compelling and influential. The entertainment piece, whether it be drama, films, videos, dance and so on can influence those watching it thereby changing their behaviour.
- (vi) **Practical** Enter-educate is practical, real and meaningful. The infrastructure for enter-educate encourages participatory learning and so, helps individuals to develop sense of responsibility and urgency to responsively find solutions to problems. This is demonstrated when teaching division, multiplication, addition and subtraction of numbers using oranges, etc in the classroom.
- (vii) **Profitable** Enter-educate is profitable in many respects for it easily attracts support from individuals, NGOs and corporate organizations.
- (viii) **Proven Effective** Research finding such as have shown the effectiveness of enter-educate approach in behaviour modification. It attracts and offers young people models of responsible behaviour, and helps them consider/make better decisions about personal relationships and primarily, education behaviours.

Methods of Teaching Mathematics

There are methods as ways of presenting subject matter contents to students called mathematics methods of instruction. Among these are lecture, discovery, discussion, project and field trip methods. These came into use as a result of anticipated improvement in mathematics teaching and learning. Mathematics is a subject that is supposed to be very exact and certain. Over thousands of years, mathematicians have learned to be extremely careful about what they accept as an established fact. There are several reasons for this. The most obvious is that much of mathematics is very abstract and even the most talented mathematician's intuition can be led astray.

Unfortunately, many mathematics teachers are confused about the use of these methods. In each case, the teachers are involved in solving some examples of related problems on the chalkboard for the students. In other words, any serious work in mathematics must involve reading and writing mathematical statements and proofs, since they are the only accepted way of definitively establishing new knowledge in the field.

Findings/Benefits of Enter-Educate to Mathematics Education

A good understanding of a mathematical statement should be a clear explanation of why the statement must follow from what you already know. In other words, if you have a clear understanding of why a mathematical statement must be true, then you should be able to convert that understanding into a good proof of that statement. But to make that conversion requires careful analysis of your own understanding, and the ability to explain the sources of that understanding.

In discussing the benefits of enter-educate to mathematics it must be noted that its characteristics are in themselves benefits. However, the findings/benefits synthesized from the exercise are:

- (i) Enter-educate provokes or stimulates problem solving in mathematics education since it helps

- for better analysis of the structure of the mathematical statement.
- (ii) Enter-educate helps to arrest and sustain the attention of interested parties in mathematics teaching and learning.
 - (iii) It is useful in out-of-school and in-school mathematics learning.
 - (iv) Learning experiences and core message in mathematics education are easily assimilated and remembered through enter-educate approach.
 - (v) Enter-educate enhances continuity, integration and sequencing learning in mathematics education.
 - (vi) Enter-educate helps permeate cognitive, affective and psychomotor domains.
 - (vii) Enter-educate helps in the forward and reverse reasoning abilities in mathematics education.

Recommendations

However, whatever the theory of mathematical statement and proofs practices, the value and relevance of the-lowest level of mathematical reasoning is very important, and this, enter-educate in mathematics education bridges. We therefore recommend that:

- (i) There should be a review of the mathematics curriculum in structure and content,
- (ii) There should be more emphasis on enter-educate methods of teaching them in the general teaching methods, this is in line with the strategic teaching advocated for All (1997) for effective teaching.

Conclusion

From the discussion above, it will be concluded that there are rooms for redirecting primary mathematics education in Nigeria through enter-educate approach.

Students and the many other mathematicians alike have a desire for human understanding of mathematics statements and proofs. But majority develop cold feet to these mathematical statements and proofs. We must of necessity be sensitive to and tolerant of students in these regards, lest we put them off mathematics forever.

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