COMMUNICATING MATHEMATICS: IMPLICATION FOR MATHEMATICS TEACHERS.

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Abstract

The issue of poor performance in mathematics has been a matter of concern, so many factors have been founded to be responsible for such performance. This paper considered the role of mathematics teachers in ensuring effective communication of mathematics, thus facilitating improved performance in mathematics.

Introduction

The desire for Nigeria to be a free, just, an egalitarian and democratic society, a land full of opportunities for all citizens, able to generate a great and dynamic economy and growing into a united, strong and self-reliant nation cannot be adequately and meaningfully realized without the use of education as a instrument. Based on this, the National Policy of Education made very clear that subjects like English language, Mathematics and the Sciences be made compulsory as core subjects in the school system.

For sometime, there has been underachievement in the field of mathematics. This means under development of the country's human resources thereby making it difficult for her to achieve her development goals. This could be seen in the poor level of students' performance in mathematics and the sciences as recorded by WAEC (1994) and JAMB (1995) Reports.

Communication

Farrant (1982) described communication as the process of passing an understandable message from one person to another. Adewoyin (1991) defined communication as the process of information exchange between two or more individuals or organizations, a process through which information or knowledge, ideas or messages are conveyed or transmitted from one source to another. The main purpose of any communication is to bring about changes in behaviour. There are four main components of communication: the sender, the message, the media, and the receiver.

The main purpose of any communication is to bring about changes in behaviour. The sender sends his message as to influence or modifies the behavior of the receiver. Ogunmilade (1984) listed five objectives of communication as: (i) to develop people (ii) to enhance morale, (iii) to get things done, (iv) for effective control and (v) to stimulate participate decision making and critical thinking. All these work towards influencing the receivers' behavior and thus effecting some form of change.

In the mathematics class the mathematics teacher (the sender) formulates, encodes and transmits his message (which could be in form of skills, attitudes, and information), to the student (the receiver) through appropriate medium. The student then decodes interprets and sends a message in form of reaction back to the teacher. In the process student's behavior is influenced. The student interprets the message based on his previous experience just as the message which the teacher transmits is also base on his own previous interaction with the environment as well as his background.

Effective Communication Of Mathematics:

Implication For Mathematics Teacher

Obemeata (1995) indicated that what matters most in the act of effective instruction generally is the medium of instruction. This could be in terms of the language of instruction and materials of instruction. For mathematics to be communicated effectively a lot of responsibility rest on the shoulders of Mathematics teachers. While other factors are also important, this paper will concentrate on those relating to teachers.

I. ***Language Of Instruction***

One of the means of communicating mathematics is that of use of spoken world or language. It must be started that Mathematics has its language, which are the embodiment of terms, symbols, signs and concepts inherent in the discipline. Every Mathematics teacher should as much as possible explain and interpret mathematical terms, concepts, symbols and rules using the language of instruction in the class and the learner's real life experiences.

//. ***Use of Textbooks***

The Mathematics teacher should ensure that his students do not rely entirely on his class examples. They should be made to procure good Mathematics textbooks and make effective use of them. The textbook must be written in a readable and understandable language within the levels of the learners. They should be illustrative with solved problems as examples so as to accommodate for the individual difference of the learners. For effective use, the teacher should be giving students assignments from the textbook.

Hi. ***Communicating Practical***

Every instruction of learning should be provided with a Mathematics laboratory, were teaching aids are lacking the Mathematics teacher should improvise. The students could be encouraged to provide substitutes, which can even be labeled in the students' name and kept for future use.

/V. ***Employing Variety Of Communication Strategies***

A good mathematics teacher must not stick to one particular strategy for communicating mathematics. He should study each topic and identify the best method of communication. He should also study his students and identify the methods they enjoy most. Where necessary a Mathematics teacher can employ two or more methods within a given period to increase efficiency. Each strategy has its merits and demerits but using two or more of them will make them complement one another.

v. ***Minimizing Noise***

Noise is an impending factor in communication. It shows and distorts message thus preventing communication. It is possible for the communicator to select the right codes and yet the receiver does not receive the right message due to noise in the medium. The implication for the Mathematics teacher is that the teacher identifies and selects the medium with minimum noise. Any factor that interferes with information or message is noise. According to Farrant (1982), it could be attention, lack of interest, limited experience or interruption. Noise could be (a) physical e.g. disturbance or distraction (b) mental or intellectual e.g. lack of understanding or limited experience (c) emotional e.g. mood of the teacher or student. The Mathematics teacher should therefore reduce noise to bearest minimum.

vi. ***Mathematics Teacher's Personality***

A Mathematics teachers' personality goes a long way in determining the success or otherwise of his communication. Thus, a mathematics teacher as much as possible should be a good example to his students. He should ensure he keeps psychologically and physiologically fit so as to have effective communication. A frustrated teacher cannot communicate Mathematics effectively. Therefore there must be no emotional imbalance to serve as barrier to effective communication.

vii. Mathematics Teacher's Skills

The Mathematics teacher should demonstrate appropriate mathematical skills. He should always motivate learning, reinforce students' performance, and also have effective class control. He should be creative and resourceful. Farrant (1982) listed skills associated with communication e.g. using appropriate instructional materials, explaining difficulties, helping clarity pupil's ideas. McFarland (1973) recognized other skills such as clearly defining objectives, acting with humanity and motivation. Ozigi and Cauham (1982) also identified sympathy, care, patience, orderliness, willingness to learn and abilities to set good examples as qualities of a good teacher.

Conclusion

We were able to identify seven effective ways of communication mathematics and their implications for the mathematics teachers. Amongst those highlighted it should be noted that the language of instruction and the use of appropriate instructional materials are very vital for effective communication of mathematics to the learners. Every teacher of mathematics should be made to design improvised instructional materials which would help to facilitate communication of mathematics.

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