

Effective Mathematics Study Techniques: A Panacea for Examination Malpractice

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ABSTRACT

Examination malpractice is a scourge and thorn in the flesh of our educational sector in Nigeria. In mathematics, the primary cause of examination malpractice is deeply rooted and buried in fear of failure which is caused by inadequate preparation and lack of effective utilization of mathematics study techniques by students. This creates a fertile breeding ground for mathematics phobia leaving many students who are bent on passing at all cost in the cold black hands of examination malpractice as their only way to success. Educational scholars have placed much emphasis on teaching methods and strategies at the expense of learning strategies. If teachers are aided with much teaching methods and strategies to teach, what of the learning strategies or techniques to help students improve on their learning?

This paper summarizes the right Mathematics study techniques that serve as important, interesting and motivating tools for students' success that break the jinx of Mathematics phobia and examination malpractice to make anyone who applies them accurately to be successful in mathematics. The outstanding techniques emphasized here are the mathematics study model, Practice, and mathematics rough work.

Key Words: Examination malpractice, Effective mathematics study techniques, Mathematics learning model, Mathematics practice and Rough work.

INTRODUCTION

Examination as part of evaluation is aimed at determining a learner's level of skill acquisition or intellectual competence and understanding after a given training. When examinations are not properly conducted, the expected feedback may not result. Consequently the result of such evaluation leads to wrong decision and judgment which affects the teacher, the learner, the entire education industry as well as the society. One of the paramount realities on the goals of education that cannot be ignored is that, no matter how lofty, how enviable, how laudable, how

gigantic the education goals are and how relevant the school curriculum is organized, if no provision is made for accurate evaluation of learning progress, all these efforts will be a wasteful venture (Duse in Okwori 2014)

To be regarded as an educated person, an individual is expected to pass through the whole process of examinations conducted by a competent and recognized body. Adequate and proper acquisition of relevant knowledge and skills in school subjects and disciplines of study is invariably a function of quality education (Okara in Okwori 2014).

Examinations could be conducted for various reasons among which are: promotion, selection, classification and certification of the candidates. For an examination to be valid and reliable, it has to be administered under conducive and uniform conditions where candidates are made to adhere to stipulated rules, regulations and ethics of such an examination. When these rules and ethics are violated, it constitutes what is called examination malpractice.

As a result of frequent cases of examination malpractice in Nigeria, the international community is losing confidence in the certificates awarded by some institutions and examination bodies (Emaikwu & Eba, 2007; Ogum, 2007). This has led to questioning the validity and reliability of the examinations as well as the authenticity of the results and certificates obtained. Cheating in examination has become so 'internalized and legitimized' that some people now regard it as a normal process of passing examination in Nigeria. This enveloped our entire educational sector and has become an epidemic in the nation's educational system, which needs a prompt attention (Adeyemi, 2012; Okwori, 2014). It is worthy to note that, examination malpractice has over the years caused a lot of grief, anxiety, worries and other psychological imbalances due to its adverse negative effects on all facets of the society, the individual, the home, the school, the government, the private organization and the international community (Obasi, 2009).

In mathematics, the major cause of examination malpractice is deeply rooted and buried in fear of failure which is caused by inadequate preparation and lack of effective utilization of mathematics study techniques by the students because they are the major participants and direct beneficiaries of examination malpractice. This creates a fertile breeding ground for mathematics phobia and hence, leaving many students who are bent on passing at all cost in the cold black hands of examination malpractice as their only way to success.

Many participants and factors contribute to this menace and accusing fingers are pointed to school owners, examination bodies, supervisors, parents, teachers and students because of their involvement in the act either directly or indirectly (Okwori, 2014). This paper however is concerned with the right mathematics study techniques as an important, interesting and motivating tool for students' success that breaks the jinx of mathematics phobia and examination malpractices.

What then is examination malpractice?

Several educational scholars view examination in various perspectives and forms. It could be internal, external, oral, written or both.

Examination as the process through which students are evaluated or tested to find out the quality of knowledge they have acquired within a specified period of teaching and learning process (Balogun in Okwori, 2014). According to Maduabum (2008), examination is a way to ascertain how much of a subject matter in a particular field of study the candidate has mastered. Hornby (in Okwori 2014) views examination as a formal test of somebody's knowledge or ability in a particular subject, especially by means of answering questions or practical exercises.

On the other hand, examination malpractice refers to any illegal or unauthorized act before, during and after examination that presents false information on a candidate's achievement in an examination. It is also seen as any deliberate act of wrong doing contrary to the rules and ethics of examinations designed to give the candidate an unfair advantage (Tambawal in Okwori, 2014). According to Usman in Okwori (2014), it is cheating in the examination or any intention to benefit or give undue advantage to oneself or another by deceit or fraud, before, during and after examination.

Examination malpractice has already become a culture in Nigerian educational scene because it is been condoned by most

parents, students, teachers and lecturers (Ojerinde, 2010). Students often go into examination halls with pistols and daggers ‘to take care’ of anyone that would forestall them from cheating. This situation exposes invigilators and question papers at risk hence; the Nigerian educational system is gravely threatened. The frequency of occurrence of examination malpractice indicates a state of hopelessness and helplessness in our educational sector and has become so endemic that the penalties hitherto meted out to its perpetrators is almost having no significant statistical effect on them (Okwori, 2014).

EFFECTIVE MATHEMATICS STUDY TECHNIQUES.

Many people feel like knowing how to do well in mathematics is an inborn skill, something that can’t be learned by an ordinary person except the gifted ones; However, the truth is that anyone can be successful in mathematics if appropriate and effective study techniques are used.

In some courses, all it takes to excel is listening, note taking, memorization and the ability to recall. However, the nature of mathematics content takes a different form of study. It requires both active and passive participation and practice of the learner. This implies that, you cannot get into the mathematics class to only watch your teacher “talk” about mathematics; you actively need to study by practice, paying attention in class and working through problems.

According to Anyagh, Agbo-Egwu & Kalu (2017), the issue of how best to help the learners acquire knowledge, skills and values has been a problem to educationists over the years. In attempting to provide answers to this problem, educational scholars put forward different strategies, practices, methods or approaches of teaching.

The National Policy on Education (N.P.E 2007) in Nigeria also emphasizes effective teaching and learning of

mathematics with the use of a lot of strategies.

Teaching or learning strategies are systematic procedures used to help teaching and learning to effectively take place (Okarfor & Anaduaka, 2013).

Educational scholars have placed much emphasis on teaching methods and strategies at the expense of learning strategies. If teachers are aided with much teaching methods and strategies to teach, why not aid students with learning strategies or techniques to help them improve on their learning?

This paper places below three effective mathematics study techniques that will make mathematics learning much better.

1. PRACTICE, PRACTICE AND MORE PRACTICE

Mathematics is a discipline whereby the saying “*practice makes perfect*” is mostly needed. Most people who find mathematics difficult try to learn mathematics by simply memorizing facts and formulas the way they would have been done in debates and other literary subjects; while knowing facts and formulae is important, the best way to learn mathematics is by being actively involved in practice and working through problems.

The Academic Center for Excellence ACE (2015) maintained that, mathematics courses require understanding of concepts and not simply memorization of formulas; you need to understand the “how and why” behind these formulas if you want to do well in mathematics. There is no doubt that mathematics understanding can be achieved through active practice. This constitutes the saying

“Tell me, I forget, show me, I remember and involve me, I understand”.

The best way to plan for success in mathematics is through practice, practice and more practice. It is impossible to study mathematics by just reading and listening, the more you practice Mathematics, the better you become. This is because each problem in mathematics has its own

characteristic; therefore, it is important to attempt it in numerous ways and times to enhance deeper understanding (ACE, 2015).

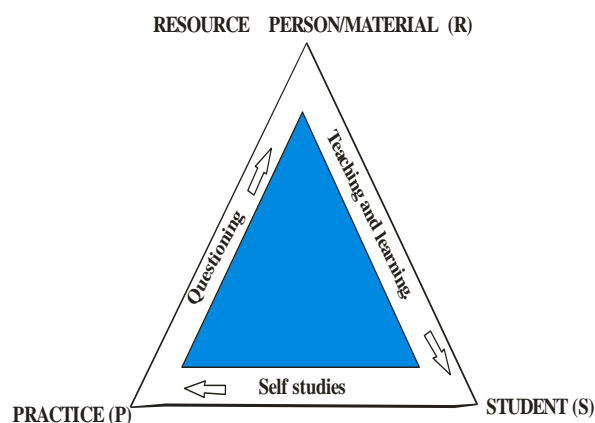
It is also important in your practice to attempt all examples given during the learning session and the exercises. The practice can be more meaningful when done alone and also in group where you can criticize, consult and share ideas with one another to install deeper understanding.

Time yourself adequately in the course of your practice, review your errors and consult your notes, study group members and also your resource persons/materials with questions for clarification of such errors to stimulate a better understanding. This takes adequate care of fear of failure and mathematics phobia that leads to examination malpractices.

2. THE TRIANGULAR MATHEMATICS STUDY MODEL

A model as opined by Doll in Akem & Aduloju (2003) is defined as a widely applicable format in which the major elements in a program are expressed in such a way as to make their functions and inter-relationship clear. The study of mathematics is as equally important as the teaching of mathematics itself hence, the need for this model becomes pertinent. This triangular mathematics study model was designed by Igba Tersoo to give mathematics learners a driving force or motivation for effective learning.

The model is presented below:



This study model is triangular in nature and continuous in nature. It has three sides; (RS, SP and PR.). All these sides must be effectively utilized by students in order to enhance a deeper understanding that will break the jinx if examination malpractice.

The model starts from the resource person or material, flows through *teaching and learning process* to students, the study process then flows through *self studies* to practice and finally to the resource person or material through *questioning* and the process starts again until all doubts and questions are cleared. At the practice stage, the learner makes no or little use of notes and thereafter refers back to the teacher or resource material through questioning in areas of confusion or misunderstandings. The whole process starts over and continues until the learner is sufficient enough to attain mental independence from the source.

The side of this triangular model that is mostly neglected by learners of mathematics is PR (practice to the resource person or material through questioning). When adequately put in “practice to the end”, this model avails the students with a greater level of understanding in mathematics that breaks the jinx of mathematics phobia and builds up their conceptual manipulative skills. Practice to the end here implies completing the journey through all the 3 sides of the triangle on a subject matter as many times as possible until self-confidence is built in the learner through understanding.

How to apply this model.

Application of this model is quite simple, all it requires is:

- A. Pick a subject matter.
- B. Meet the resource person or material for teaching/learning process.
- C. Put the content acquired to practice (self study) and make no or little reference to the resource material. (This could be examples or exercises available on that subject matter)

- D. Refer back to the resource person or material for clarification in areas of confusion and misunderstanding.
- E. Repeat the cycle until you attain a level of mental independence from the source or resource person/material.

3. MATHEMATICS ROUGH WORK

This is a silent but salient aspect of mathematics teaching that is mostly neglected by students. It is a pivot around which the content of the lesson revolves. Mathematics teachers only write it on the board to refresh Student's minds and later erase for the new concepts to be built upon.

It is worthy to note that, the knowledge of mathematics is cumulative; it follows a natural progression whereby each concept is built upon the knowledge gained or learnt in the past. Knowing this fact, the teacher brings the prerequisite knowledge to the students through rough work to build a solid foundation for the new concept.

Besides serving as a foundation for new concepts, rough work creates a link between mathematics steps to show their relationship and interconnection. Therefore, it is inherent on the part of students to take rough work seriously, paying attention to copy it out and later make references to it when the teacher is absent.

On the part of teachers, as you supervise your student's notes taking, always ensure that they create a little space for rough work. This will help to build the needed background knowledge and also refresh their minds to boost their interest and understanding of mathematics.

Students who neglect these important points seem to know mathematics in the class very well but later forget and find it difficult to make attempts as their foundation knowledge diffuses away.

They can only be likened to a person who tries to build a house in the air without anything to support the building at the foundation. How possible is it to attain success in this situation without the foundation? Your guess is as good as mine. This throws their mind off Mathematics

completely and later causes them to hate the subject and develop great fear each time the subject is mentioned. They are the students who have nothing good to lay their hands upon except to consider examination malpractice as their only way or route to success.

CONCLUSION

Examination malpractice is a scourge and a thorn in the flesh of educational sector in Nigeria. In mathematics, its primary cause is deeply rooted and buried in fear of failure which is caused by inadequate preparation and lack of effective utilization of mathematics study techniques. This creates a fertile breeding ground for mathematics phobia leaving students who are bent on passing at all cost in the cold black hands of examination malpractice as their only way to success. This problem can be solved through effective utilization of these techniques as summarized in practice, practice and more practice, the triangular mathematics study model and mathematics rough work. They are the right Mathematics study techniques that serve as important, interesting and motivating tools for students' success that breaks the jinx of Mathematics phobia and examination malpractices to make anyone who applies them accurately to become successful in mathematics.

SUGGESTIONS

This article suggests the following points with a view to ameliorating the situation of examination malpractice in Nigeria through effective utilization of mathematics study techniques:

1. Teachers should emphasize Students' attention to practicing mathematics problems as many times as possible until a mental self sufficiency is attained.
2. Teachers should teach their students how to use this mathematics model when studying mathematics as a tool for effective learning.
3. Teachers and students should pay more attention to mathematics rough work as

it builds a solid foundation for new concepts and creates a mathematical link between steps.

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