

# Misconception in Mathematics

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**Abstract:-** The view or opinion of most student have about mathematics is incorrect. The bases for this misconception are faulty thinking or understanding which had created difficulties and poor performance in the learning of mathematics. When an idea is wrong all others knowledge that follow is would be wrong and this would lead to the failure in understanding this knowledge. This is the basic problem seen in the teaching and learning of mathematics as a core subject to other subjects. The lack of interest in the subject mathematics is as a result faulty thinking or wrong fact and this had to be corrected. Most students often have their own notion on certain mathematics concept either right or not. The onus is on the teacher to detect those misconceptions and help the student, remedy them. It is also to note that the teacher may devise their own strategies based on the source of the misconception

## I. INTRODUCTION

Misconception could be seen when one put on a green sun shade eye glasses. The environment seems greenish by the interpretation of the sense about the environment and its application to mathematics as a core subject Ibe (2009). Man interact with the environment through the five sense, seeing with the eyes, smelling with the nose, hearing with the ears, tasting with the tongue and touching (or feeling) with the skin. Mental picture of whatever we are into can never be avoids if not constructed properly, it lead a wrough understanding. A few years ago, a British politician, Stephen Byers, made a harmless error in an interview. The right Honorable Minister was asked to give the answer to  $7 \times 8$  and he give the answer 54, instead of the correct 56. This does not mean he was not sure but it was as a result of the mental picture situation at the particular moment. The idea is to attempt to highlight some of those misconception in basic mathematics so that the mathematics teacher can adjust their methods and guide the learner effectively.

## II. MEANING OF MISCONCEPTION

Misconception as a wrong or inaccurate conception” Cavve 1991, to form a wrong idea of, to mistake the meaning of ..... Aysan (1999), citing Ivowi. Ivowi (988) state that misconception is an evaluation term which refers to an improper or incorrect conceptual framework or knowledge structure and the agreed correct one, indicates misconception. An individual’s internal mathematics ideas in mathematics which are not in agreement with what the mathematician accept, is misconception about mathematics. It is believed that

illogical or intuitive conceptions, misconception, prior conceptions or alternative frame work are mean the same.

## III. TYPES OF MISCONCEPTIONS

### A. *Preconceived notions*

That everyone is capable of learning mathematics. Many believe mathematics is innate. Nicole Joseph (2016) an assistant professor of mathematics education say “they believe mathematics is reserved for an elite group of students and you can either do it or you can’t” people will say they are not a “mathematics person” but they never thought of going into mathematics to do anything.

I would say that every student have what it takes to be mathematician or do it in a better way. But not every student learns the same way. This preconceived notion should be put aside by the math teacher and just need to find creative ways to reach the student as well as figuring out how each student learn best; as mathematics is for everybody.

Often I see students who are overwhelmed by mathematics or think it is too hard, but when the mathematics educator engages them, this spark their interest and they excel in mathematics. When mathematics is taken from the angle of what is taught in mathematics class, should be on bases of out of school experience.

### B. *Non-mathematics belief*

The non-mathematics belief is that, mathematics is only about memorization. When student learn math primarily through memorization they miss out on developing critical thinking skills that are vital to being successful in math late on. Rittle Johnson (2016) “Students need to have the ability to memorized a formula, but they also need the understanding of the concept behind it. This is true that most student forget or fail to understand the function of very common symbol, the equals signs, student adopt short cut in understanding the meaning of mathematics symbols. Symbol need to be understood before moving into complex math concept, when student are stuck with only one way of solving, they are only memorizing and not developing critical thinking skills. Student appreciates the learning of mathematics when numerous approaches are involved.

### C. *Conceptual misunderstanding*

Mathematics is not taught to be fun, Liza Fazio (2016) “Children learn mathematics faster through play, games or more specifically on a mobile app design and this was tested. All work and no play make Jack a dull boy” The signs of

frustration usually appear on student's faces when much calculation is done without introduction of fun in the classroom. Game like catch the monster, with fraction on a number line and mathematics on 4 sticks are full of fun, makes learning more easier.

A Game significantly improved the understanding of most topics in mathematics learning, A student on engagement in math is based activities and games makes teaching and learning of math interesting in the classroom. Such variety of activities and games include folding papers to different shape, creating symmetrical and pattern unit store, tittle and blocks life.

#### *D. Age and gender misconception*

This occurs when age and girls are seen as not capable doing very well in mathematics. Both the preschool and girls are taught counting and recognizing numbers but often are thought to be too young to be exposed to more complex mathematics concepts.

Rittle Johnson conducted a research on 3 and 4 years old. She found out that they are capable of engaging in pattern abstraction - identifying pattern with different colours or shapes. It is believed that where they are engage in pattern activities their brain begins to build a foundation for later mathematics proficiency. Johnson (2017) "Pattern abstraction teaches the child to look for regularity, repetition and rules, which are critical component of mathematical reasoning". Obviously, as the group progresses to more complicated patterning activities their mathematical foundation continue to grow.

#### **IV. SOURCES OF MISCONCEPTION**

This include

- Teachers (Wasagu 1998, Linn 2002)
- Cultural belief and practices (Desmuck and Demuck, 2007)
- Textbooks (Maduabuan 1993).

#### **V. ASSISTING THE LEARNER TO OVERCOME MISCONCEPTION**

- Identifying the fast and slow learners in the classroom as well as try to meet up with them.
- Identifying individual learner misconception and attending to them accurately.
- Provide learner, the forum to confront them misconception through discussion
- Assist learners reconstruct and internalize them and knowledge should be based on math model through persuasion of accurate mathematics knowledge.

#### **VI. CONCLUSION**

The write up is to point out the meaning, types and sources of misconception in mathematics. There is a call for teachers of mathematics to be very positive in their approach

to the teaching and learning, especially as it involved individual difference and their opinion towards mathematics.

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