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RESEARCH ARTICLE

ETHNOMATHEMATICS

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Abstract

In mathematics education ethnomathematics is the study of the relationship between mathematics and culture. Often associated with "cultures without written expression", it may also be defined as "the mathematics which is practiced among identifiable cultural groups". It refers to a broad cluster of ideas ranging from distinct numerical and mathematical systems to multicultural mathematics education. The goal of ethnomathematics is to contribute both to the understanding of culture and the understanding of mathematics, and mainly to lead to an appreciation of the connections between the two.

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Introduction:-

The term "ethnomathematics" was introduced by the Brazilian educator and mathematician Ubiratan D'Ambrosio in 1977 during a presentation for the American Association for the Advancement of Science. Since D'Ambrosio put forth the term, people - D'Ambrosio included - have struggled with its meaning (An etymological abuse leads me to use the words, respectively, ethno and mathema for their categories of analysis and tics from techne).

The term Ethnomathematics is used to express the relationship between culture and mathematics. The term requires a dynamic interpretation because it describes concepts that are themselves neither rigid nor singular namely, ethno and mathematics.

The term ethno describes all of the ingredients that make up the cultural identity of a group: language, codes, values, jargon, beliefs, food and dress, habits, and physical traits.

Mathematics expresses a broad view of mathematics which includes arithmetic, classifying, ordering, inferring, and modeling.

Sampling of some of the definitions of Ethnomathematics

1. The mathematics which is practiced among identifiable cultural groups such as national-tribe societies, labour groups, children of certain age brackets and professional classes.
2. The mathematics implicit in each practice.
3. The study of mathematical ideas of a non-literate culture.
4. The codification which allows a cultural group to describe, manage and understand reality.
5. Mathematics...is conceived as a cultural product which has developed as a result of various activities.
6. The study and presentation of mathematical ideas of traditional peoples.

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Ethnomathematics

It is the study between mathematics and culture. Ethnomathematics curriculum differs from multicultural curricula because it is reconstructed from cultural knowledge rather than just including some examples.

Ethnomathematics has been investigated from three approaches:

1. Mathematical knowledge of traditional culture.
2. Mathematical knowledge in non western societies.
3. Mathematical knowledge of different groups in society.

Three major issues related to socio cultural background in mathematics education are:

1. Language of the learner
2. Culture of the learner
3. Socio economic status of the learner

How Ethnomathematics Can Help Children In Schools?

Many educators may be unfamiliar with the term, yet a basic understanding of it allows teachers to expand their mathematical perceptions and more effectively instruct their students. Teachers and the public in general do not commonly say that mathematics and culture are connected. When teachers do acknowledge a connection, often they engage their students in multicultural activities merely as a curiosity. Such activities usually refer to a culture's past and to cultures that are very remote from that of the children in the class. This situation occurs because teachers may not understand how culture relates to children and their learning. An important component of mathematics education today should be to reaffirm, and in some instances to restore, the cultural dignity of children.

Although multicultural mathematics activities are important, they should not be our final goal. As our students experience multicultural mathematical activities that reflect the knowledge and behaviors of people from diverse cultural environments, they not only may learn to value the mathematics but, just as important, may develop a greater respect for those who are different from themselves. To acquire these skills while maintaining cultural dignity and to be prepared for full participation in society require more than what is offered in a traditional curriculum. Much of today's curriculum is so disconnected from the child's reality that it is impossible for the child to be a full participant in it. The mathematics in many classrooms has practically nothing to do with the world that the children are experiencing. Just as literacy has come to mean much more than reading and writing, mathematics must also be thought of as more than, and indeed different from, counting, calculating, sorting, or comparing.

Practices To Overcome The Problem Of Exclusion In Classroom

1. Teachers must ensure that they are not excluding students by the language that they are using in the classroom.
2. Teachers must ensure that they do not judge a student's work on their background.
3. Teachers must ensure that they are open minded.

The goal of mathematics education should be to foster students' ability to successfully use modern technology to solve problems and communicate their thinking and answers as they gain an awareness of the capabilities and limitations of technological instruments. We can help students realize their full mathematical potential by acknowledging the importance of culture to the identity of the child and how culture affects how children think and learn. We must teach children to value diversity in the mathematics classroom and to understand both the influence that culture has on mathematics and how this influence results in different ways in which mathematics is used and communicated. We gain such an understanding through the study of ethnomathematics.

Conclusion:-

Today's children are living in a civilization that is dominated by mathematically based technology and unprecedented means of communication. Much of the content of current mathematics programs does little to help students learn the information and skills necessary to function successfully in this new world. It is important to recognize that students and parents have a real expectation that school will improve opportunities for employment. This requirement means that educators must understand the evolution of the job market. As Forrester (1999) states, we are mostly preparing students for jobs that will not exist in the future. Students should be encouraged to construct personal mathematical understandings and be able to explain their work.

When cultural characteristics of the children's invention, experience, and application of mathematics are realized and respected, these students more closely resemble the budding mathematicians we desire.

Mathematics is a compilation of progressive discoveries and inventions from cultures around the world during the course of history. Its history and ethnography form a wonderful mosaic of cultural contributions.

Today, we too are playing a part in the evolution of the discipline of mathematics. It is time for educators to improve their understanding of the role that culture has played and continues to play in shaping mathematical development. It is time for educators to empower their students with this vital knowledge.

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