

Chapter 9

Ethnomathematics and Modern Globalized Curriculum

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ABSTRACT

The mathematical knowledge consumed in schools can and does influence culture and communities. There is a close connection between development of culture and idea of mathematics. Cultural thinking, practices, and products are mathematically intertwined. Cultural practices show mathematical thinking and operations and culture are better communicated through them. This goes on to confirm the practical fact that mathematics can be understood in cultural game, analysis of local arts, daily work procedures, and skills. Mathematical idea as a science of logical reasoning is better presented from natural/familiar base of culture of the people or else it will not be understood ultimately. Hence, development and human progress cannot be based on it. Mathematics will be useless to humanity. Thus, students need to develop abilities, such as creativity and a sound set of research habits, as they learn the required mathematics. This study focused on ethnomathematics and modern globalized curriculum.

DOI: 10.4018/978-1-5225-6158-3.ch009

ETHNOMATHEMATICS

The prefix *ethno* originally refers to races, tribes, or groups of relatives. Correspondingly, *ethno-mathematics* has been associated with the mathematical practices of particular tribes or indigenous, ‘primitive’ peoples, as well as those of a nation or human race. Until the early 1980s, the notion ‘ethno-mathematics’ was reserved for the mathematical practices of ‘non-literate’ – formerly labeled as ‘primitive’ – people. Furthermore, culture means peoples’ language, place, traditions, and ways of organizing, interpreting, conceptualizing, and giving meaning to physical and social worlds. The systems of indigenous knowledge included, particularly, ways of dealing with space and time and different ways of observing, classifying, ordering, comparing, measuring, quantifying, inferring, inventing, plus coherent systems of explanations of facts and phenomena, based on sophisticated founding myths. These are the basic supporting elements of every cultural system and include mathematical ideas present in all these systems, particularly in the Western cultural system, where they are organized as what is called Mathematics.

Ubiratan D’Ambrosio provided a more extended version of this idea, with the aim of encompassing the whole range of cultures. Thus he presupposes “a broader concept of ‘ethno’, to include all culturally identifiable groups with their jargons, codes, symbols, myths, and even specific ways of reasoning and inferring”. Here the word ‘ethno’ has ceased to refer to anachronistic concepts such as racial groups, primitive peoples or illiterates, and is instead given a comprehensive meaning, pointing to any group of people who share a cultural identity. D’Ambrosio who became the “intellectual father” of the ethno-mathematics program proposed “a broader concept of ‘ethno’, to include all culturally identifiable groups with their jargons, codes, symbols, myths, and even specific ways of reasoning and inferring”. As a result, today, within the ethno-mathematics discipline, scientists are collecting empirical data about the mathematical practices of culturally differentiated groups, literate or not.

The Brazilian mathematician and educationalist Ubiratan D’Ambrosio was the first, from the late 1980s, to propose a research program for ethno-mathematics, he stated that as individuals become integrated into humankind as solidarity, we will be able to contribute to the preservation of a common inheritance”. Many people, authors and others, have been attracted to Western-academic mathematics for its elegant, yet powerful sense of logic, form, as well as its scientific, cultural, and artistic qualities. Thus each culture has investigated mathematics in the light of its own needs and activities but the results of their investigation are in agreement with the results of other cultures, i. e the cultural “products” that are observed are common to all cultures included counting, locating, measuring, designing, playing, and explaining.

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