

Relationship between sociocultural diversity and mathematics



The word that can simply describe the study of the interrelationship between culture and mathematics is ethnomathematics. In the late nineties, ethnomathematics was more related to the study of mathematical ideas of primitive peoples, (Ascher and Ascher 1986). Modernised and detailed definition of ethnomathematics was proposed by (D'Ambrosio 1985), the most well-known mathematician in Brazil and around the world. D'Ambrosio (1985), suggested a broader concept of the word (Francois, 2010).

Ethnomathematics “ ethno - within a cultural environment, characteristics related to the cultural identity of a group such as language, codes, values, jargon, beliefs, food and dress, habits and physical traits”, (D'Ambrosio, 2006), mathema - explaining and understanding in order to transcend, managing and coping with reality in order to survive and thrive tics - techniques such as counting, ordering, sorting, measuring, weighing, ciphering, classifying, inferring (Rosa and Orey 2011). A classroom setting these days is multicultural and it would be important that mathematics and culture are part of the mathematics curriculum. Another point is that it can help to develop critical thinking about mathematics because of that connection with the real world. Ethnomathematics is an intersection of three research fields: cultural anthropology, mathematics and mathematical modelling, (Rosa and Orey 2013). Ethnomathematics studies aim to focus on “ how students comprehend, articulate, process, understand and use mathematical ideas, procedures and practices that enable them to solve problems related to their daily activities”, (Rosa 2000 cited in Rosa and Orey 2013).

The essay aims to critically evaluate a specific aspect of a mathematics curriculum, place the curriculum within its social and educational context and suggests improvements to its design.

Ethnomathematics isn't a term that tenderfoot instructors might be comfortable with, yet put just, " The term ethnomathematics is utilized to express the connection among culture and arithmetic" (D'Ambrosio, U. 2001). The expression " ethno" portrays all components that make up a social character including language, race, convictions, propensities and qualities while science is the investigation of numbers, space, change and structure. While the term ethnomathematics is definitely not a typical term utilized in the Australian educational modules, an essential comprehension of it and how it tends to be executed in the study hall enables instructors to train their understudy's all the more successfully while developing their numerical recognitions. Despite the fact that this sort of hypothetical structure isn't seldom utilized, it is as yet basic for instructors to have the option to contextualize arithmetic to display a socially responsive teaching method. This is especially significant with the goal for students to ponder connecting arithmetic to the outside world. " Understudies need to learn in an agreeable domain. Instructors can help make such a domain by regarding and esteeming the arithmetic and the way of life that understudies convey to the study hall" (Anthony and Walshaw, 2009). The accompanying paper plans to talk about the significance of connecting science to culture in the homeroom (incorporating into an Indigenous study hall), the utilization of ethnomathematics as an educational apparatus, tending to arithmetic as a social build and methods for actualizing ethnomathematics into the

educational modules. A case of an exercise will be given so as to exhibit connecting arithmetic to culture in the study hall and to demonstrate that science goes past fundamental numeracy abilities. Incorporating ethnomathematics into the educational programs ought to connect with students in considering arithmetic past the homeroom and relating it to their own social character. The accompanying exposition intends to consolidate Indigenous students as well as a scope of socially differing learning encounters in the arithmetic homeroom.

“ As our understudies experience multicultural scientific exercises that reflect information and practices of individuals from various social situations, they not exclusively may figure out how to esteem the arithmetic yet, similarly as significant, may build up a more prominent regard for the individuals who are not quite the same as themselves” (D’Ambrosio, U. 2001). Schools and study halls must be receptive to culture and by connecting society into the arithmetic educational modules it guarantees that understudies feel protected, welcome and acknowledged in their learning condition. Now and again, teachers neglect to perceive the different societies in their homerooms, which thusly makes adjusting exercises for the assorted variety of students troublesome. It is pivotal for instructors to recognize and find out about societies inside the study hall and after that adjust their method for educating all together for their understudy’s to take part in all learning encounters. Indigenous students are known to be the absolute most burdened gathering of students in Australia, which implies that instructors are going to encounter these learning challenges all through their profession. As per Susan Matthews, Diminish Howard and Bounce Perry

(2002), “ Numerous Native understudies do not have the learning and comprehension of the social qualities and the social exercises that are related with numerical exercises in the more extensive culture. These understudies need to know why and where just as how in the event that they are to share social objectives in science action.” thus, it is critical that a more prominent accentuation is centered around the students social setting of school instructing and learning and their ordinary encounters of arithmetic.

Getting society and assorted variety in the study hall is tied in with valuing your students different social personalities and their methods for being and appreciating this present reality. Encouraging that empowers the students to coordinate foundation learning, home and network encounters into the educational programs is otherwise called culture pertinent instructing. When showing arithmetic in the homeroom, bringing an understudies culture into the educational programs will imply that the instructor is recognizing their way of life and foundation outside of the study hall. “ Socially responsive teaching method isn’t about ‘ social festivals’, nor is it lined up with conventional thoughts around multiculturalism. It includes affirmation, regard and a comprehension of contrast and is complexities” (Limit Building Arrangement, 2013). A socially responsive teaching method utilizes an assortment of instructional methodologies where different learning styles are connected to each other. Utilizing ethnomathematics in the homeroom as an educational apparatus will have real advantages over the long haul for all students. Actualizing ethnomathematics into exercises will guarantee that students are grasping the scientific contemplations, practices and thoughts

that societies all through time have created. Utilizing ethnomathematics as an academic apparatus will likewise get the students contemplating science and the utilization of it past fundamental numeracy aptitudes, for example, checking, including, subtracting and numbers. In spite of the fact that this kind of way to deal with instructing won't be used in each exercise, it is imperative to recognize this sort of teaching method in the study hall so as to connect with understudy's in connecting science and culture.

“ The investigation of the historical backdrop of science helps with recognizing the social and numerical commitments of various societies over the world” (Rosa and Orey, 2011). It is consequently that ethnomathematics can likewise be incorporated into different educational modules joins, including history. For instance: connecting an arithmetic exercise on the Roman numeral numbering framework to both history and science. Having the option to connect exercises into other educational programs regions is an important instructive apparatus, especially while adjusting instructing styles to singular students. Increasingly regular that not, the science homeroom neglects to recognize the pertinence of culture and accordingly numerous instructors and students neglect to see the association between the two. Neglecting to see this association persuades that arithmetic is absolutely acultural, which means a control without social noteworthiness. So as to wipe out this kind of reasoning, values, customs, language, propensities and convictions intelligent of societies should be installed in understudy getting the hang of, incorporating presenting utilizing ethnomathematics in the homeroom. Not exclusively will this guarantee students are picking up a more profound and theoretically important

comprehension of arithmetic, it will likewise guarantee that a comprehensive study hall is being advanced through coordinating social decent variety into the homeroom. “ Any investigation of ethnomathematics and scientific displaying speaks to an amazing methods for approving an understudy’s genuine encounter, and gives them the apparatuses to wind up basic members in the public eye” (Rosa and Orey, 2011). Teachers are the most critical asset understudies’ need so as to build up their scientific comprehension. By tending to their individual and differing needs in the study hall, for example, foundation, language, culture, qualities and home life, instructors are permitting the students frame of mind and comprehension to arithmetic to grow emphatically.

“ Similarly as every single human culture create language, religious convictions, customs, sustenance delivering systems, and so forth; so it appears do every single human culture produce science” (Priest, A. 1988). Likewise with any educational programs zone, tending to decent variety in the homeroom is basic in the present society in especially as multiculturalism spreads over the world. Tending to arithmetic as a social build can incorporate coordinating ethnomathematics and social viewpoints into the science educational programs. For instance: amid an exercise on fundamental numeracy, for example, expansion or subtracting, acquaint an Indigenous point of view with the exercise and furnish understudies’ models with arithmetic from the Indigenous culture. Diocesan (1994) made a structure that produced research adjusting to three dimensions of educational programs: the planned educational programs (what we need to instruct), the connected educational modules (what we really instruct) and

the accomplished educational modules (what is really learned by the understudies). Social contemplations are affected on each dimension of this system. As a piece of the educational modules, arithmetic must fortify and esteem the significance of keeping up an understudies social information instead of overlook it. Ethnomathematics ought to accordingly strengthen a socially significant educational programs and consolidate understudies' comprehension of the significance of arithmetic and culture. The Australian Educational programs presently bolsters understudy assorted variety and meeting the differing adapting necessities of every understudy through giving data including customized learning approaches.

“ Australian Native individuals utilized arithmetic to create complex family relationship frameworks, utilized examples like the Fibonacci grouping for weight frameworks, and utilized geometry to compute time from the holy messengers shaped by the places of the Sun, Moon and Stars” (Siemon et al. 2012, p. 86). This case of coordinating ethnomathematics in the homeroom is only one of numerous methods for exhibiting the connection among arithmetic and culture. As arithmetic is so generally educated aculturally in the homeroom, understudies' know almost no about critical numerical uses of developments, for example, the Egyptian or Roman numbering framework, the Babylonians or even Greek science. Numerous societies have added to the progression of science and there are numerous manners by which this can be conveyed in the homeroom. Connecting understudies to their very own way of life and how it identifies with science is a manner by which instructors can join ethnomathematics into the educational programs. These may incorporate; making an Indigenous point of view for exercises,

coordinating arithmetic into a history exercise on culture, exhibiting science from an alternate culture to appear

To sum up, ethnomathematics should be part of the mathematics curriculum as it gives an opportunity to the teachers to teach within today's context.

Making ethnomathematics part of the curriculum enables teachers to demonstrate that culture and mathematics can't be separated and that mathematics is not culture free. This part of the curriculum will ensure that students think out of the box, learn and see mathematics in a different aspect. It also ensures that mathematics has been tackled from all the angles. Relating content with the student's background and culture is important in their learning development as they are highly influenced by their own cultural environment. Building on already known knowledge whilst introducing new skills and concepts will enable students to be mind opened and link it to their daily life. It helps to assist students in becoming aware of not only their own culture but of others as well and brings a greater understanding about the significance of mathematics to taught lessons and various activities in the mathematics classroom while also promoting an inclusive classroom environment.

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