

Critical Mathematics Education and School Education in India: A Study of the National Curriculum Framework 2022 for Foundational Stage

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Abstract : Literature around Mathematics education suggests that democratic attitudes can be strengthened through teaching and learning Mathematics. Furthermore, connections between critical education and Mathematics education are observed in the light of critical pedagogy to locate Critical Mathematics Education (CME) as the theoretical framework. Critical pedagogy applied to Mathematics education is identified as one of the key themes subsumed under Critical Mathematics Education. Through the application of critical pedagogy in mathematics, unequal power relations and social injustice can be identified, analyzed, and challenged. The research question is: have educational policies in India viewed the role of critical pedagogy applied to mathematics education (i.e., critical mathematics education) to ensure social justice as an educational aim? The National Curriculum Framework (NCF), 2005 upholds education for democracy and the role of mathematics education in facilitating the same. More than this, NCF 2005 rests on Critical Pedagogy Framework and it recommends that critical pedagogy must be practiced in all dimensions of school education. NCF 2005 visualizes critical pedagogy for social sciences as well as sciences, stating that the science curriculum, including mathematics, must be used as an “instrument for achieving social change to reduce the divide based on economic class, gender, caste, religion, and the region”. Furthermore, the implementation of NCF 2005 led to a reform in the syllabus and textbooks in school mathematics at the national level, and critical pedagogy was applied to mathematics textbooks at the primary level. This intervention led to ethnomathematics and critical mathematics education in the school curriculum in India for the first time at the national level. In October 2022, the Ministry of Education launched the National Curriculum Framework for Foundational Stage (NCF-FS), developed in light of the National Education Policy, 2020, for children in the three to eight years age group. I want to find out whether critical pedagogy-based education and critical pedagogy-based mathematics education are carried forward in NCF 2022. To find this, an argument analysis of specific sections of the National Curriculum Framework 2022 document needs to be executed. Des Gasper suggests two tables: The first table contains four columns, namely, text component, comments on meanings, possible reformulation of the same text, and identified conclusions and assumptions (both stated and unstated). This table is for understanding the components and meanings of the text and is based on Scriven’s model for understanding the components and meanings of words in the text. The second table contains four columns i.e., claim identified, given data, warrant, and stated qualifier/rebuttal. This table is for describing the structure of the argument, how and how well the components fit together and is called ‘George Table diagram based on Toulmin-Bunn Model’.

Keywords : critical mathematics education, critical pedagogy, social justice, ethnomathematics

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