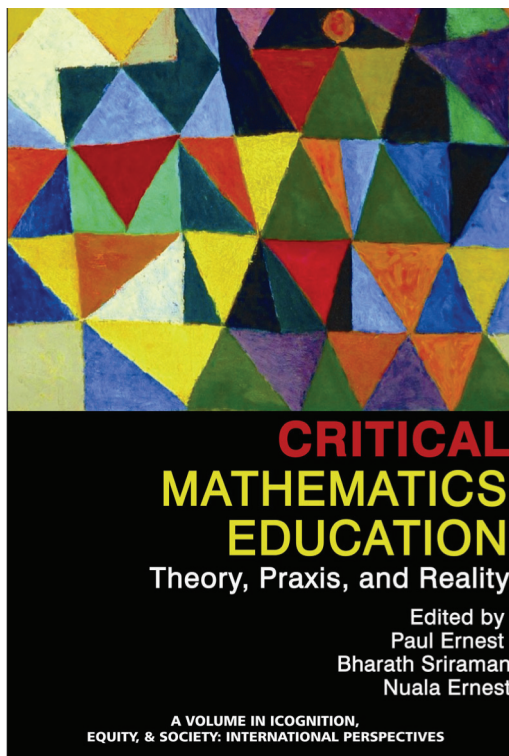


Book review

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Critical Mathematics Education: Theory, praxis, and reality,
edited by Paul Ernest, Bharath Sriraman and Nuala Ernest

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Critical Mathematics Education: Theory, praxis, and reality is a volume in the series *Cognition, Equity and Society: International Perspectives*. It has contributions from a range of international authors. For readers who are conversant with the area of critical mathematics education, there may be an element of familiarity in some chapters. However, the book offers a number of different perspectives in the context of critical mathematics education (CME). As articulated in the Foreword, the 17 chapters in this book draw together theoretical contributions and explore the practical implications of these views in a global context. According to the editors, the book demonstrates a shared concern of CME by linking three recurring themes in the book:

- the nature of mathematics and the critical mathematics education issues of epistemology and ethics

- ideology, the hegemony of mathematics, ethnomathematics and real-life education
- capitalism, globalization, politics, social class, habitus, citizenship and equity.

Contributions from authors such as Ole Skovsmose, Ubiratan D'Ambrosio and Paul Ernest, who are seminal in the field of CME, lend authority to the book. A criticism of CME is that it is often presented from a theoretical perspective with little reference to the practical. As the title suggests, this book offers a balance of both theoretical and practical chapters, covering historical aspects of CME as well as examples of CME in practice. As Sriraman mentions in the introduction, the book 'not only theorises the "critical" aspect of mathematics education but also provides avenues for praxis situated in current reality' (p. xii). As such, the book is aimed at both researcher and practitioner.

Critical mathematics education incorporates various ideas and many of these are presented in the book. Francois (p. 187) discusses the shift in meaning of the term 'ethnomathematics' and its role in the classroom, focusing on its increasing prominence in Western classrooms. Also in the context of ethnomathematics, D'Ambrosio considers the political dimension of mathematics education by discussing how the human mind responds mathematically to real world problems, so demystifying the idea that mathematics is a value-free subject, a theme which runs through the chapters (p. 23). This is supported by a number of illustrations throughout the book. For example, in Chapter 1, Skovsmose discusses the CIA's rationality when using unmanned aircrafts to launch missiles at identified targets. The mathematics behind such pattern recognition has to factor in decisions such as the cost of the airplanes and the lives of non-targeted civilians in areas with schools or hospitals. He also suggests a situation often experienced at airports where passengers, on the one hand, are 'bumped' from overbooked flights based on computer-based probability models used to calculate the proportion of passengers likely to be 'no shows' for a departure. The customer, on the other hand, is simply told of an unfortunate error made by the airline, which has led to overbooking.

Other chapters discuss recent projects, such as Arlo and Johnsen-Hoines' chapter on 'Real-life education' (p. 227) and Anderson and Valero's report of three teaching episodes which introduce critical pedagogical discourse into the mathematics classroom (p. 208). The latter is a particularly valuable set of examples of how CME can operate in practice. In Chapter 13 Aguilar and Blomhoj also discuss how to integrate politics into mathematical teaching and present two examples from a Mexican sociopolitical context.

Some chapters take a more theoretical approach. In Chapter 6, Jorgensen draws from the work of Bourdieu to discuss the ways in which the working class are marginalized in the study of school mathematics, focusing on ability grouping, differentiated mathematics, functional mathematics and language. Wedege, in Chapter 7, also draws on the work of Bourdieu by connecting Skovsmose's notion of student's foreground with Bourdieu's theory of habitus.

In Chapter 8, Greer and Mukhopadhyay demonstrate how school can be an alienating experience for learners, by comparing the experiences of learning English with learning mathematics. By selecting quotations from *The Hegemony of English* (Macedo et al., 2003) and transposing them into a mathematical domain, thus replacing words like 'literature' or 'language acquisition' with 'mathematics' and 'learning mathematics', they conclude that the anti-multicultural approach to English teaching in the United States mirrors the typical mathematical experiences of many children in relation to their lived experiences.

Historical aspects of CME are also covered in the book. In Chapter 14, Nikolakaki addresses the historical context of mathematical education and discusses how it has been essential to capitalism to construct a desired citizen. He goes on to describe citizens who are critically literate through mathematics. Corlu, in Chapter 16, also takes a historical approach by critically analysing the history of mathematics and mathematics education from the perspective of democracy and investigating the emergence of mathematics as a universal language.

In Chapter 5, Ernest discusses the scope and limits of CME – in many ways, this is a theme that runs through much of the book. As well as offering a historical backdrop, Ernest warns of the dangers of CME being reduced to a teaching technique and becoming a feature of normalized education. It would be fair to say that by presenting theoretical and practical perspectives of CME through a critical lens, the chapters in this book contribute to avoiding the dangers that Ernest identifies.

In drawing together the theory, praxis and reality, this book makes a significant contribution to the field of CME. It serves as a valuable resource for both initial researchers and classroom practitioners of critical mathematics education.

Reference

Macedo, D., Dendrinos, B. and Gounari, P. (2003) *The Hegemony of English*. London: Pluto.