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Critical numeracy and abstraction: percentages.

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Summary: Being numerate involves using mathematical ideas efficiently to make sense of the world, which is much more than just being able to calculate. What is needed is the accurate interpretation of mathematical information and the ability to draw sound conclusions based on mathematical reasoning. This skill may be called "critical numeracy", defined as "being able to critique or make critical interpretations of mathematical information." There is a clear analogy with critical literacy, which involves the realisation that all texts represent different views of the world and requires students to go beyond acceptance to analysing and challenging. How should students be taught mathematics to develop critical numeracy? The traditional approach – sometimes called the "ABC method" because "A"bstract concepts and procedures are taught "B"efore "C"oncrete examples and applications – certainly seems inadequate. In the ABC method, "knowledge acquired in "context-free" circumstances is supposed to be available for general application in all contexts" – but research consistently shows that, in practice, this intention is rarely fulfilled. In this article, the authors describe an approach to teaching percent that puts contexts and application before abstract concepts and procedures. This approach, which the authors call "teaching for abstraction", is the reverse of the ABC method. (Contains 1 table and 6 figures.) (ERIC)

Classification: F83 D43

Keywords: numeracy; teaching methods; abstract reasoning; social justice; learner engagement

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