

Improving Proficiency in Mathematics through Website-based Tasks: A Case of Basic Algebra

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ABSTRACT Understanding how university students make sense of mathematics is always of concern to their lecturers. A group of lecturers at a South African university studied written responses of first year students to explore what mental conflicts arose during their students' formulations of solutions to assigned tasks. The mental conflicts as illustrated by their responses were categorized. One of the sections considered was basic algebra which is the case discussed in this paper. After detecting the common conflicts, the lecturers designed website-based tasks. The tasks were meant to target mental conflicts with the hope of removing these from students' cognition. The website-based tasks were designed in accordance with the principle of scaffolding. The researchers analysed the various conflicts within the framework of Kilpatrick's five strands of mathematical proficiency. In this paper the researchers discuss the design of the activities and interactive collaborations during tutorial sessions with students. We found that the website material seemed to have helped in removing common mathematical conflicts of some of our undergraduate mathematics students. Also it was found that non-mathematical terminology used could contribute to students' mental conflicts.