IDENTIFYING TROUBLESOME KNOWLEDGE TO STRENGTHEN MATHEMATICS SUPPORT

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ABSTRACT

Identifying troublesome knowledge (Meyer & Land, 2003; Perkins, 1999) affecting students within the mathematics discipline and related science disciplines, can be a positive step for a subject developer, but it is almost essential for those developing or presenting mathematics support programs. Mathematics support should ideally accommodate the many facets of student development of mathematical competency and skill by addressing the issues of troublesome knowledge - ritual knowledge, inert knowledge, conceptually difficult knowledge and foreign knowledge (as defined by Perkins, 1999). Overcoming misconceptions and knowledge barriers is a challenge for any student, but particularly for those underprepared students who seek support because of their lack of mathematical skills. Students are inevitably at different stages in their transition towards deeper learning and often need individual guidance and instruction. Being aware of the problems students face, and trying to alleviate them, is part of the challenge for support program instructors. This presentation discusses the different aspects of troublesome knowledge that have become evident whilst running the Maths Skills Program at La Trobe University, a program of mathematics support for first year students of Chemistry, Physics, Biology, Statistics and Mathematics (Jackson & Johnson, 2013; Jackson, Johnson & Blanksby, 2014). The ways such problems are confronted within this program are also addressed.

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