Assessing aspects of competence in Basic Algebra.

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Abstract

The paper reviews the potential uses of Models in ICAI/CAI systems and outlines some of the earlier work in the area. The underlying design of the Leeds Modelling System, LMS, is outlined, and some details are presented of the current implementation, which given problem(s) and the student's answer(s) hypothesizes model(s) for the student.

The sets of rules and associated mal-rules used in the Algebra Modelling experiment are presented, together with the results of the recent experiment with pupils from a Leeds High school. A close correlation between the 'bugs' diagnosed by LMS and those discovered during conventional diagnostic interviews was noted. This experiment clearly shows the diagnostic power of the system but does point to some shortcomings in the formulation of the Modeller. These shortcomings are analysed and the necessary modifications are indicated.