

## **A WEB-BASED MODULE ON FRACTIONS FOR PRE-SERVICE TEACHERS**

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This presentation outlines and analyses a web-based module for pre-service elementary teachers on the learning and teaching of fractions. The objectives of the course include developing their mathematical content knowledge, pedagogical content knowledge, and their beliefs about teaching and learning.

The course is structured to elicit optimal reflection. Students work through the course material in their own time (and to a certain extent at their own pace), but are required to attend contact sessions where whole class discussions are held and uncertainties clarified. Students have to submit assignments (which include several group assignments) by e-mail and can participate in on-line discussions throughout the module. Individual feedback to assignments is given electronically.

The content of the course includes reflection on the nature of understanding (Carpenter and Lehrer, 1999), studying research articles describing children's informal knowledge of fractions (Murray, et.al., 1996) and their misconceptions about fractions and the analysis of learning materials and video clips of children working on these materials (MALATI, 2000).

Almost the whole class indicated that they had not previously understood the underlying rationale for the rules for performing the operations with fractions and it only became clear to them during the course. There was a marked improvement in the students' formulation of their ideas which may be an indication of improved understanding. The electronic medium made more communication between lecturer and individual student possible, which lead to an increased awareness of students' misunderstandings.

### **REFERENCES**

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