

Mathematical Knowledge for Teaching: Exemplary High School Teachers' Views

Preliminary Research Report

Kathryn Rhoads

Rutgers University

Abstract:

Eleven exemplary high school mathematics teachers were interviewed to investigate their views on mathematical knowledge for teaching. Teachers took part in a one-hour interview and discussed a written lesson plan. Results indicated that these teachers believed the following aspects of mathematical knowledge for teaching to be important: (a) making connections between mathematical ideas in the high school curriculum and beyond, (b) recognizing key examples that illustrate a mathematical concept, (c) knowing appropriate applications of a concept, (d) recognizing several approaches to problem-solving for a particular concept, and (e) understanding various representations of a concept. Teachers also discussed the development of their mathematical knowledge for teaching, which they believed came from their teaching experience and personal experiences rather than formal coursework. These results point to suggestions for areas of focus in undergraduate mathematics teacher education.

Keywords:

Mathematical knowledge for teaching
High school mathematics teachers
Interview study