

Preservice Secondary Mathematics Teachers' Knowledge of Students

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Abstract

The aim of this paper is to present the nature of preservice secondary mathematics teachers' knowledge of students as emerged from a study investigating the development of their pedagogical content knowledge in a methods course and its associated field experience. Six preservice teachers participated in the study and the data were collected in the forms of observations, interviews and written documents. Knowledge of students is defined as teachers' knowledge of what mathematical concepts are difficult for students to grasp, which concepts students typically have misconceptions about, possible sources of students' errors, and how to eliminate those difficulties and misconceptions. The findings revealed that preservice teachers had difficulty in both identifying the source of students' misconceptions, and errors and generating effective ways different than telling the rules or procedures to eliminate such misconceptions. Furthermore, preservice teachers' knowledge of students was intertwined with their knowledge of subject matter and knowledge of pedagogy. They neither had strong conceptual knowledge of mathematics nor rich repertoire of teaching strategies. Therefore, they frequently failed to recognize what conceptual knowledge the students were lacking and inclined to address students' errors by telling how to carry out the procedure or apply the rule to solve the given problem correctly.

Keywords: *Knowledge of students; pedagogical content knowledge; mathematics; preservice teachers*