

STUDENTS' EPISTEMOLOGICAL IDEAS IN MATHEMATICS

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This study reports on the epistemological ideas of a group of students who have been participating in a longitudinal study on the development of mathematical ideas. In particular, the research identifies and characterizes the students' epistemological ideas based on the students' articulations of their learning experiences. The study also addresses the students' mathematical thinking along with their epistemological views.

OVERVIEW

This study reflects a growing interest on students' ideas about the nature of knowledge and the process of coming to know (Hofer & Pintrich, 1997). Students are regarded as one of the components of the "classroom culture" (Roth, 1994) and failure in constructing "shared meaning" has been attributed to different views on the nature of knowledge between students and teachers (Roth, 1994). Some studies have also examined the relation between students' epistemological ideas and other research issues (Schommer & Rhodes, 1992).

In this study the students' epistemological accounts are viewed as ideas rather than beliefs, as it assumed that they were constructed in the longitudinal study. The study uses a phenomenological approach and open-ended interviews. However, more structured interviews and stimulated recall around videotaped past events were also used to obtain further characterizations of the students' epistemological ideas. The videotaped data was analyzed using a method suited for video data (Powell, Maher, Francisco & O'Brien 2001). The domain addressed is probability thinking. The results support a view of the student's epistemological ideas as complex and multidimensional (Schommer, 1992) and make epistemological contributions to the theory and practice of mathematical education.

References

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