

ABSTRACT

Consensus exists in mathematics education that effective *classroom assessment* is an essential component of effective practice; however, an important part of classroom assessment, teacher interpretation of student artifacts, is not often discussed. The purpose of this interpretative qualitative research study was to examine teachers' interpretations of student artifacts. In particular, I sought to understand: (a) the personal resources teachers used to construct their interpretations, and (b) the products of teacher interpretations, which included inferences teachers constructed about students and the instructional responses teachers planned. Toward these ends, nine *experienced* and *professionally active* teachers participated in two interviews. The first interview was semi-structured and focused on the participants' professional experiences, conceptions of assessment, and assessment practices. The second interview was task-based and involved teachers in the interpretation of student artifacts collected from second grade students. The results indicate that teachers applied to the act of interpretation their: (a) conceptions of levels of student performance, (b) expectations for student performance, (c) awareness of common student difficulties, and (d) awareness and understanding of mathematical ideas. Teachers' interpretations of *what occurred* and *student mathematical understanding* were sometimes varied for the same student artifact, and sometimes involved statements about *what occurred* that were inconsistent with or could not be observed in the artifact. Teachers' planned instructional responses were related to their interpretations, and also differed for the same student artifact. These results provide support for the conclusion that professional development related to classroom assessment should address the interpretation, with instruction focused on personal resources used in the act of interpretation and the importance of accurate interpretations.