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Seeking more than nothing: Two elementary teachers' conceptions of zero.

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Summary: Zero is a complex and important concept within mathematics, yet prior research has demonstrated that students, pre-service teachers, and teachers all have misconceptions about and/or lack of knowledge of zero. Using a hermeneutic approach based upon Gadamer's philosophy, this study examined how two elementary mathematics teachers understand zero and how and when zero enters into their teaching of mathematics. The results of this study add new insights into the understandings of teachers and students related to zero and the origins, relationships between, and consequences of those understandings. Significant gaps and misconceptions within both teachers' understandings of zero suggest the need for pre-service education programs to bring attention to the development of a more complete and meaningful understanding of zero.

Classification: E49 D79

Keywords: zero; in-service teacher education; professional development; teacher research; misconceptions; concept formation