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Teaching,
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A PHENOMENOLOGICAL STUDY OF PROPORTIONAL REASONING AS
EXPERIENCED AND DESCRIBED BY BASIC ALGEBRA UNDERGRADUATE
STUDENTS (274 pp.)

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The present study addressed gaps in the current literature on proportional reasoning by conducting a phenomenological study that examined the proportional reasoning experience of undergraduate students in Basic Algebra courses at a Midwestern University. Participants were videotaped during the interviews in which they worked through each of four multipart tasks and their respective journal prompts. The data gleaned from what participants wrote and spoke, organized around the operational definition of proportional reasoning and cross-referenced with appropriate tasks, yielded units of meaning from each operational definition component. From these units of meaning the researcher formed the textural and structural descriptions of the participants' experience of proportional reasoning. Further analysis generated the culminating aspect of the phenomenological study, namely, the composite description of the experience of proportional reasoning for the undergraduate participants. The researcher sculpted this composite description into a circular model with four quadrants, namely, (a) experience, (b) representation, (c) forming and iterating or partitioning an appropriate ratio, and (d) strategies. Each of the quadrants can be viewed as one of the facets of proportional reasoning as it was experienced and described by the participants when they engaged in the research tasks. Several aspects of each of the facets were also presented in the researcher's evolved model of proportional reasoning.