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Morrone, Anastasia Steffen; Harkness, Shelly S.; D'Ambrosio, Beatriz; Caulfield, Richard
Patterns of instructional discourse that promote the perception of mastery goals in a social constructivist mathematics course.

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Elementary education students enrolled in an experimental mathematics course participated in this study. The course is taught using a social constructivist approach and is designed to improve students' mathematical problem-solving ability and deepen their understanding of mathematics. The research question for the present study is as follows: In what ways does the instructional discourse in a social constructivist college mathematics course influence the perception of mastery goals in the classroom? To determine the extent to which students perceived their classroom to be mastery goal focused, we matched anonymous student comments from end-of-semester course evaluations with items from the Patterns of Adaptive Learning Scales (PALS). Every class session was videotaped and transcribed, with an emphasis on instructor statements during whole group discussion. The transcripts were analyzed using the Observing Patterns of Adaptive Learning (OPAL) instrument. The present study suggests that social constructivist teacher practices promote mastery goals through instructional discourse that supports students as they move toward higher-order mathematical thinking. Specifically, the results suggest that this was realized through the instructional discourse pattern of scaffolding, pressing for understanding and higher-order-thinking.

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