Ariel's cycle of problem solving: An adolescent acquires the mathematics register

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Abstract: This talk will illustrate the interdependency between developing mathematical understanding and using the specialized language unique to the discipline to express those understandings employing the mathematics register by analyzing the problem solving of a 7th grade bilingual student, Ariel, over an 18-month period. The findings underscore the assertion that students may not be in full command—for production and comprehension—of the mathematics register until they understand the underlying mathematics. Teachers should be encouraged to create situations in which students deploy all of their diverse repertories of mathematics knowledge and skills to the instructional tasks at hand, and to refine their use of the mathematics register.

Dr. Sigley received his PhD from Rutgers University and came to Texas State University this year. His current research interest is in the design of learning environments using open-ended problem solving and classroom videos to promote teachers attending to student mathematical reasoning.