

THE LIMIT NOTATION: WHAT IS IT A REPRESENTATION OF?

Beste Güçler
bgucler@umassd.edu
University of Massachusetts Dartmouth

Abstract

Student difficulties with the notion of limit are well-documented by research. These studies suggest that students mainly realize limits through dynamic motion, which can hinder further realizations of the concept. Some studies mention the overemphasis on the dynamic aspects of limits in classrooms but research on the teaching of limits is quite scarce. This work investigates the development of discourse on limits in a beginning-level undergraduate calculus classroom with a focus on the limit notation and uses a communicational approach to learning, a framework developed by Sfard (2008). The study explores how the limit notation is utilized by an instructor and his students and compares the realizations of limit in their discourse. The findings indicate that the shifts in the instructor's word use when talking about the notation supported students' realizations of limit as a process despite the frequency with which the instructor talked about limit as a number in his discourse.

Keywords: teaching of calculus, limits, the limit notation, discourse analysis