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Exploring one student's experience of learning calculus through a reflection interview

In this presentation I explore how both past and present experiences in mathematics can affect one student's embodied and proceptual understanding of calculus, based on the framework of Tall's theory of Three Worlds of Mathematics. The student's understanding was investigated through the use of calculus task questions designed to show embodied or proceptual understanding as well as a reflection interview geared towards seeking an understanding of the student's experiences in mathematics classes. The results of the study show that for this particular case study, a proceptual understanding dominated the embodied understanding, which could be linked to the student's experiences inside the mathematics classroom. As well, the data indicated a number of socio-mathematical norms which likewise could be linked to the student's in-class experiences.