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200 000 mathematicians in Manitoba: Determining the nature of mathematics through mathematics in practice

What would it mean to our understanding of our discipline, if we considered learners of mathematics to be mathematicians? Of course, the number of mathematicians in Manitoba would be considerably larger. This presentation will discuss two possible repercussions regarding philosophical considerations about the nature of mathematics, illustrated with data from two research studies. Repercussion one: we would have the opportunity to describe mathematics as an ontological process, a dynamic phenomenon positioned as part of the development of every individual. Repercussion two: the study of the nature of mathematics could rely, along with theoretical positioning, on an empirical element, with the mathematics that each teacher and learner does serving as data. Because we can determine the mathematics that student mathematicians experience, mathematics would have an active normative quality as well: what we think mathematics should be, we could aim to enact. One of the two studies, a longitudinal study that listened to students as they completed their four years of high school, will provide exemplars of mathematics as a developmental phenomenon. In the other study, teachers engaged in curriculum design to enable their students to see the learning of mathematics as an inquiry process. The teaching activities they developed can illustrate what it might mean for deliberations about the nature of mathematics to have empirical and normative elements.