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Reflections on students’ school experience with mathematical concepts

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Students’ mathematical knowledge is marked by school experience, which occurs through various stages of their lives. This experience is social, since it is impregnated by interaction with parents, teachers, academic peers and with the cultural setting in which it develops and, in the same way, by the time spent in school. Let us say, therefore, that every student has a story and one that is not exclusively academic. If we ask ourselves, then, what his or her experience with certain mathematical concepts might be, the answer is complex, given that school has not been the only contributor. We would also need a biography of each student to understand the said experience in depth and obtain the elements necessary to describe it. Out of that would emerge tools, strategies and meanings along with various forms of communicating and representing them, together with beliefs, aspects of school practice, experiences, among other things.

Without a doubt, studies of this kind nourish the teaching of classroom mathematics and our discipline, Mathematics Education, with relevant information. More so in the case of university students, who have gone through several stages of an education system.

Classroom mathematics practices, therefore, are not beyond endogenous and exogenous factors. Thus, when we study what university students know or understand or perceive about certain mathematical concepts, previous knowledge emerges in their explanations that comes from mathematical experiences even as far back as elementary school and, likewise, alternative conceptions, beliefs, from their epistemology about knowledge, social representations, etc. All this will be in terms of the purpose of the investigation, as well as from the point of view and theoretical framework.

Cabañas and Cantoral’s paper in this special issue reports that, previous knowledge emerged from students arguments. Thus, we found that students alluded both the formula to calculate the area of the triangle and the movements to support their thesis. That is, the area of the convex polygons is conserved.

Our research is studying students’ perception of the notions of conservation, comparison and measurement of the area. It means that is part of students’ school experience with mathematical concepts.