

## IMMIGRANT STUDENTS' MATHEMATICS LEARNING EXPERIENCES IN CANADIAN SCHOOLS

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Because of global mobility of populations, mathematics classrooms in many parts of the world are becoming linguistically and ethnically diverse. In the school district in which we conducted the research reported here, more than 25% of students are considered to be English language learners. Previous studies have found that teachers tend to assume that mathematics learning is universal, while immigrant students and parents can bring different expectations and norms (e.g., Gorgorió & Abreu, 2009). In order to better understand immigrant students' trajectories of mathematics learning, we examine their lived experiences of learning mathematics as revealed through autobiographical interviews and artistic renderings.

The broader study of which this is a part investigates students' experiences of learning mathematics in Canadian schools, and the ways that these experiences contribute to students' images of mathematics and their mathematical identities. To date, 94 autobiographical interviews have been conducted with Kindergarten to Grade 9 students. This project also utilized drawings in order to reveal students' experiences that cannot necessarily be verbalized. In this poster, we focus only on students who had prior schooling in countries other than Canada. To interpret this element of our data, we draw from sociocultural theory, which seeks to understand how cultural practices and artifacts mediate human learning (Cole, 1996).

Our results indicate that the majority of immigrant students in our study described differences in mathematics learning experiences between Canadian schools and schools in other countries. Differences were commonly identified in the following areas: practices of homework, individual learning and group work, the way teachers reward "good mathematics students," and support and help from teachers. These differences tended to contribute to some immigrant students' confusions, struggles, and frustrations in school mathematics learning in Canada. For example, some students reported how they were negotiating multiple norms regarding group work. Another significant common thread was pressure from parents to succeed in mathematics. Many immigrant students in our study were learning additional mathematics at home with their parents or supplementing school learning by afterschool mathematics learning programs. Some of the student drawings and narratives revealed how students conceptualized mathematics as a competitive, performance-oriented discipline, an orientation that seemed to be at odds with the educational cultures of the Canadian schools in which they found themselves.

Despite the common teacher belief that mathematics learning is universal, our study unveils ways in which immigrant students are navigating different norms and practices of mathematics learning. Our research implies that language learning is not the only support needed, but negotiation of meaning attached to school mathematics practices is also necessary to better support immigrant students.

### References

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Gorgorió, N., & Abreu, G. (2009). Social representations as mediators of practice in mathematics classrooms with immigrant students. *Educational Studies in Mathematics*, 72(1), 61-76. doi: 10.1007/s10649-009-9183-3