DIGITAL TECHNOLOGIES, CULTURES AND MATHEMATICS EDUCATION

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In this lecture, I will focus on several aspects of cultures related to digital technologies and mathematics education. One first aspect is that any integration of digital technologies for mathematical (or other) teaching and learning creates and transforms the classroom culture. On the other hand, in order for learning to be meaningful through the use of digital technologies, these may need to be embedded in a certain "surrounding culture" (Papert, 1980) to empower students to engage pro-actively with those technologies. I will present different types of teaching and classroom "cultures" that have been found when using digital technologies, how these impact mathematical learning, as well as different conditions and teacher-training opportunities for the use of digital technologies found in different countries, illustrating all of these with examples from my own experience and from literature (Sacristán, 2017; Hoyles et al, 2020; Sacristán et al, in press; Faggiano et al, in press). I will discuss how the different conditions and access opportunities in different regions and cultures create digital gaps. Finally, I will end by discussing what could be done to support teachers to create meaningful contexts and classroom cultures when integrating digital technologies within established school systems (but at the same time transforming these), so that these can empower learners (e.g., to "do mathematics") and promote the construction of knowledge.

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