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Using ICTs to facilitate multilingual mathematics teaching and learning.

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Summary: Many mathematics teachers and learners are living in a world where Information and Communication Technologies (ICTs), including computers and mobile phones, are common: they are digital natives. Many devices of the information and communication technologies are also connected to the Internet, meaning that an unprecedented audience and unparalleled knowledge can both be reached: the world is connected far beyond language, country, or social boundaries. ICTs offer access to numerous online knowledge sources, several of which are multilingual. ICTs also connect a large number of learners to text discussions of mathematics. The community exposure or peer-to-peer nature of this communication allows it to use a language that is highly relevant for these learners and enables them to use their own language within a shared repertoire. Finally, ICTs support exploration of mathematical objects: they commonly transcend languages through the expressivity and interactivity of representations they offer to view and manipulate mathematical ideas. This chapter surveys research that studies such innovations in the ICT and mathematics education literature. It pinpoints the gap related to the scarcity of literature on the possibilities of using ICTs to facilitate multilingual mathematics teaching and learning. To this end, the first section reviews literature about ICTs for mathematics learning, identifying a few opportunities where the language diversity is considered. It then describes how multilingualism can affect tools of the ICTs for mathematics learning. Finally it describes a few tool types, which may support the teaching and learning of mathematics in multilingual environments.

Classification: C50 U70

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