

Factors that influence teachers of Years 7 – 10 Mathematics adopting pedagogies that support students' development of STEM capabilities and 21st Century skills

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Politics, globalisation, socioeconomics, industry and advancements in technology have influenced contemporary education curriculum and policy resulting in a shift towards an increased emphasis on 21st Century skills and competencies, coupled with a need for developing students' STEM capabilities (Fadel & Bialik, 2015; Organisation for Economic Cooperation and Development [OECD], 2019).

In defining 21st Century skills across multiple frameworks, the skills associated with creativity, critical thinking, communication and collaboration are consistently used (English, 2016; Fadel & Bialik, 2015). The Australian Curriculum (AC), in its three-dimensional framework, encompasses the development of 21st Century skills through addressing the Australian Curriculum: General Capabilities (AC: GC). The AC: GC are not intended to sit independently of the various learning areas, but to be incorporated into the delivery of content within the learning areas.

Although mathematics is considered by many as a crucial component of developing 21st Century learning (English, 2016; Fadel & Bailik, 2015), little is known about the factors influencing teachers of secondary mathematics adopting pedagogies that support that learning. Furthermore, the beliefs and attitudes of teachers of secondary mathematics, towards the role mathematics education plays in developing students' STEM capabilities (Ogan-Bekiroglu & Caner, 2018).

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