

# BUILDING THE STEM PIPELINE FROM THE GROUND UP: THE CONFLUENCE OF FIRST NATIONS PERSPECTIVES AND SUSTAINABILITY IN SCIENCE TEACHER TRAINING

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There are global concerns regarding students' declining engagement in STEM subjects as they transition from primary to secondary school (Freeman et al., 2015). This comes at a time when increasingly complex global socio-scientific issues and future labour markets demand scientifically literate citizens (Timms et al., 2018). According to the Australian Office of the Chief Scientist, transforming STEM education begins in primary schools, through a capable STEM teaching workforce (Prinsley & Johnston, 2015).

In this presentation, we draw on two concurrent developments in education to highlight the considerations for the content, design, and delivery of science education units for future primary science teachers. The first involves the growing interest in the place-based knowledges and wisdoms inherent in First Nations cultures across the globe (e.g., Cajete, 2000). These knowledges not only provide insights on the natural world, but are also complementary with contemporary ways of teaching and learning science (Cirkony et al., in press). The second involves a (re)vision of the factory model of the education system, towards a new paradigm where students contribute to the well-being of their communities and the planet (OECD, 2019). Instead of simply acquiring knowledge, young people learn the relevance of science through their exploration of socio-scientific issues (OECD, 2019, 2020).

With this backdrop, we highlight key content and considerations for the design and delivery of science education units for future primary science teachers in the University of Tasmania Bachelor of Education program. Through this approach, we aim to develop teachers' capability to engage all students through 'multiscience' (Ogawa, p. 594) perspectives that not only offer unique knowledges and innovations (Mistry & Berardi, 2016), but also build cultural awareness and competencies for respectful collaborations with First Nations communities in order to address complex socio-scientific issues.

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