

EMBRACING DIVERSITY IN THE CHANGING CLIMATE OF STEM HIGHER EDUCATION – TRANSFORMING TEACHER BELIEFS

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Efforts to promote diversity and inclusivity in STEM higher education have been ongoing for over a decade; however, the participation and success of traditionally underrepresented cohorts in these fields still fall short of national aspirations. Even for women in STEM, desired outcomes remain elusive (Australia Department of Industry, Science, Energy and Resources, 2021).

This presentation shares the findings of our research, which employed a questionnaire survey and interviews to explore the perspectives of STEM educators in Australian universities. The survey gathered information on educator perceptions of barriers to student success, while the interviews delved deeper into the beliefs and practices that shape their instructional behaviours. Our study sought to identify potential gaps and biases in educators' perspectives that may hinder the full embrace of diverse student populations.

Whilst participants generally demonstrated great empathy for their non-traditional student cohorts, not surprisingly, the research findings revealed that educators often perceived student attributes such as inadequate high school preparation, prioritization of work over study, mental health concerns, lack of motivation, and intelligence as barriers to student success in STEM higher education. These findings are similar to findings reported by Naylor, Baik, and James (2013). Importantly, this suggests that some educators may harbor concerns about including a broader diversity of students, viewing it as a potential compromise on educational standards.

We argue that educators' beliefs significantly influence their instructional behaviors, thus impacting student learning outcomes (Turner et al., 2009). It is crucial to recognise that these beliefs are often deeply ingrained and implicitly shaped through years of personal experiences with education (Pajares, 1992). In this presentation, we will discuss a model to engage educators to recognise and challenge their existing biases or preconceptions they may hold and, in this way, transform their teaching practices to better embrace the diversity of their students.

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