SELF-AUTHORSHIP TO CREATE AND SHAPE THE IDENTITY OF WOMEN IN STEM

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Problem

The very low and declining percentage of females undertaking advanced science and mathematics subjects in Year 12 has been noted by the Office of the Chief Scientist (2014) and the Australian Mathematical Sciences Institute (Roberts, 2014). In 2011, only 28% of STEM-employed Australians were female, and this figure dropped to 14% for engineering students (Professionals Australia, 2014). Similar figures are evident in the US where Nobel Laureate Carol Grinder notes not only a deficit of women entering STEM-related fields, but also that many women experience many practical, psychological, and social barriers to continuing and advancing in their STEM careers[1]. Given the low level of females employed in STEM-related careers and the high proportion of female primary pre-service teachers, the focus on supporting and developing female STEM teachers is crucial. This study asserts that the communication and collaboration between female STEM teachers and females employed in STEM-related industries is key to raising the profile of females in this space, creating communities, and sharing expertise.

Plan

To support the development of empowered and resilient women in STEM, the project employed a process of *self-authorship* (Kegan, 1994) to support and capture the emergent STEM identity of pre-service teachers and engineering students. Self-authorship is "the ability to collect, interpret, and analyse information and reflect on one's own beliefs in order to form judgements" (Baxter Magolda, 1998, p. 143). Self-authorship is "about the cognitive process people use to make meaning" (Creamer & Laughlin, 2005, p. 14).

Action

Whilst working as members of a STEM Community of Practice comprising pre-service teachers and engineering students at Curtin University, members (students and academics) participated in guided reflective writing. Guiding questions asked about participants' interest in STEM, influential others, their self-view as *Steminists*, how their self-view developed over the period of the project, and how they envisaged their future STEM selves. The Community of Practice was formed during an internally funded *Makerspace in STEM* project in 2016 that engaged higher education students on campus, virtually (via a closed Facebook site), and at an Independent Catholic girls' school in Perth.

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[1] http://www.news.com.au/finance/work/women-in-stem-industries-time-to-fix-the-pipeline/story-fnkgbb3b-1226873381168

Reflection

This presentation reports on the initial questions of influence and impact of the project. It was evident that the narratives authored by the students XXXXXX