28th Australasian Association for Engineering Education Conference (AAEE2017)
MACQUARIE University

10-13 December, Manly, Sydney

Characterising the learning dispositions of first year engineering students

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SELECT SESSION

C1: Integration of theory and practice in the learning and teaching process

CONTEXT

While the increased adoption of blended learning designs, such as flipped instruction, by STEM academics has brought learning benefits for many students, it relies heavily on students being able to take much more responsibility for their own learning than in traditional lecture-based subjects. Previous research has shown that students who perform poorly in flipped learning environments typically do not demonstrate the agency and self-efficacy necessary to take responsibility for their own learning and hence have difficulty achieving the cognitive changes expressed as learning outcomes in subjects. Self-efficacy has also been linked to attrition. Researchers have also discussed the link between learning dispositions, agency and identity and how students' thinking about these concepts frames their future learning trajectories.

PURPOSE

Conceptual frameworks are useful for guiding data collection and analysis in a research environment, however they are also useful in practice for guiding thinking about the various aspects of a phenomenon and the relationships between these aspects. This paper reports how the use of a learning framework, the Crick Learning for Resilient Agency (CLARA) with first year engineering students in two Australian universities has provided us with information about their learning aptitudes.

APPROACH

After ethics approval the CLARA survey was administered to first year engineering students in the first few weeks of the Autumn 2017 semester at a Go8 and a regional university in NSW, and again in the final weeks of the Autumn 2017 semester.

RESULTS

There was no significant difference in the shape of the overall profile and the mean values of each university's results. The early semester results show that these first year engineering students are weakest in creativity and mindful agency. Post semester results are not available but these should demonstrate what changes have occurred after intentional focus on elements of the CLARA learning framework.

CONCLUSIONS

The survey tool provides immediate feedback on an individual's profile against the eight dimensions of the model in the form of a radar diagram which can be used for reflection and a starting point for changing the habits of mind that shape the way an individual responds to a learning opportunity.

KEYWORDS

Self regulated learning