# DIVERSITY IN NUMBERS: CONNECTING STUDENTS TO THEIR WORLD THROUGH QUANTITATIVE SKILLS

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## BACKGROUND

Student underperformance on quantitative skills (QS, e.g. numeracy, statistics) is an enduring and increasing challenge in the tertiary education sector globally.  A review of science programs across 13 Australian universities suggests QS teaching is often focused on one 100-level units and between 1-3 units later in the degree (Matthews et al., 2012), providing little opportunity for vertical QS development.

## AIMS

The Diversity in Numbers (DiN) project – Australian Council of Deans of Science (ACDS) funded – evaluates an alternative curricular model for numeracy skills development: scaffolded, course-wide implementation of digital numeracy modules with embedded interactive content and rich automated feedback to maximise learning.

## DESCRIPTION OF INTERVENTION

Four pilot modules have been developed, each focusing on a core QS concept (e.g. statistical testing, unit conversions) and framed around a published article relevant to unit content, to expand student awareness of numbers as a tool to explore global diversity. This lens is central to the projects' intention of addressing the ongoing lack of diversity among STEM graduates and within the STEM workforce.

## RESULTS AND CONCLUSIONS

Preliminary data will explore the impact of DiN modules on student engagement (through student feedback and Learning Management System analytics), numeracy anxiety (through pre- and post-module anxiety assessments) and learning (through performance on numeracy-related assessments).

## REFERENCES

Matthews, K. E., Belward, S., Coady, C., Rylands, L., Simbag, V., Adams, P., Peleaz, N., Thompson, K., Parry, M., & Tariq, V. (2012). *The state of quantitative skills in undergraduate science education: findings from an Australian study*. Australian Government, Office for Learning and Teaching.