

CREATING SAFE SPACES FOR ONLINE LEARNING IN ENABLING MATHS COURSES

Jane Stratton^a and David Vender^a

Presenting Author: Jane Stratton (Jane.Stratton@utas.edu.au) and David Vender (David.Vender@utas.edu.au)

^aPre-Degree Programs, University College, University of Tasmania, Hobart TAS 7001, Australia

KEYWORDS: enabling education, equity, online learning

AIMS

Transition Maths is a foundational maths unit offered fully online in pre-degree programs at the University of Tasmania, as well as through Open Universities Australia. The unit aims to prepare non-traditional and underrepresented students (such as first-in-family or of low socio-economic status) for tertiary study. Many of our students lack access to technology and established support networks; they often lack core mathematical skills and frequently recount previous negative experiences of formal maths education. These are both risk factors for maths anxiety (Khasawneh & Gosling, 2021).

PEDAGOGICAL CONTEXT

Our teaching approach is grounded in adult learning theory (Tate, 2012) and evidence-based practices (Brown, Roediger, & McDaniel, 2014) that lead to efficient learning for time poor students. We provide a rich suite of resources with a coherent structure and clear workflow for familiarity of process which assists with reducing anxiety. The workflow is closely aligned with weekly online contact sessions to enable real-time interactions which are designed to nurture a growth mindset where mistakes are celebrated as learning opportunities for all, rather than being seen as a failure of the individual. This has been shown to assist students with anxiety or depression to better cope with the stresses of university life (Dweck, 2017; p.38). We also use a differentiated instruction model and assessment framework to empower students to select the difficulty level at which they wish to work.

LEARNING MODEL

To overcome the isolation which can arise in online learning environments we focus on building relationships of trust through multimodal communication, both synchronous and asynchronous. We use team-teaching to create a learning community where participants have shared goals, space, and agency to decide how best to go about their learning (Hord, 2009). Activity-based sessions encourage group work and peer collaboration, and the presence of two teachers enables timely assistance, helping us to sustain the lively learning environment. Self-reflection is promoted at regular waypoints to ensure students achieve mathematical fluency and avoid the 'illusion of knowing' (Oakley, 2014).

REFLECTION

With a focus on open communication and relationship building we create safe spaces for effective online mathematics learning. Students report increasing confidence and they specifically acknowledge how motivated they became with our online team-teaching approach.

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Proceedings of the Australian Conference on Science and Mathematics Education, The University of Tasmania, 30 August – 1 September 2023, page 67, ISSN 2653-0481.