BIG STEP FORWARD IN MATH SKILLS

(Applicable to Q10 What role should higher education play in helping to develop high quality general learning capabilities across all age groups and industries? Q15 What changes are needed to grow a culture of lifelong learning in Australia? Q16 What practical barriers are inhibiting lifelong learning, and how can they be fixed?)

Mathematical skills are widely recognized as very important for national productivity. They are also a big factor in equity. They are less well taught in lower SES schools. They provide an important pathway to more reliable and better-paying jobs. We are now within reach of developing AI that can seriously strengthen the teaching of maths (e.g. https://www.gatesnotes.com/The-Age-of-AI-Has-Begun). AI can do better than classroom teaching in a number of ways. It can (1) keep track of what individual students understand and what they don't (2) nudge towards alternative ways of framing a problem (3) give fresh-instance exercises to reinforce a point (4) provide continuous feedback and encouragement, and (4) very importantly, let different students go at their own speeds. It would really make a difference to Australian universities, and to the Australian economy, if math skills could be seriously upgraded widely through the school and university and TAFE systems. No doubt several of the burgeoning AI firms on the international scene are thinking about this as one of their product-types. But I would like to see Australia ahead of the game on this, not trailing along a few years after everyone else. It should be possible to develop a national-moonshot sort of program to develop AI maths education, driven by the relevant talent in Australian universities.