Future's all about skills

JOHN ROSS

Career paths are largely a thing of the past, says Australia's most celebrated quantum computing scientist. Skill sets are taking over, signposting the way to success in a STEM-saturated world.

Michelle Simmons said maths, statistics, coding and even touch typing would become must-have skills as computer technology infiltrated "every walk of what we do", superseding some occupations and spawning new ones that today's workers could not anticipate.

"The (key) is to make sure you've got your options open and you're as skilled as possible to grab whatever's going to be there when you come through," said Professor Simmons, who heads the University of NSW's Centre for Quantum Computation.

Canadian Prime Minister Justin Trudeau recently won plaudits for his off-the-cuff explanation of quantum computing, an extraordinarily complex field based on the bizarre behaviours of subatomic particles.

The UNSW team is considered a world leader because of its progress in developing quantum computing systems in silicon, the underpinning material of contemporary computing technology.

But Professor Simmons told last week's REWIRE forum in Sydney that the field was not an exclusive refuge for physicists. There was a need for mathematicians, engineers, material scientists, chemists — even wood and metal workers.

"It covers the STEM subjects in their entirety," she said. "It's not just about the one application of the technology — it's the creation of the technology, and everything that has to come together for it to work. It's an area where I see huge potential for Australia to get involved and start skilling up."

JAMES CROUCHER

Michelle Simmons at Sydney's Kincoppal-Rose Bay School, where the REWIRE forum took place

Google Australia outreach manager Sallyann Williams said the hype around STEM ignored the unpredictability of the future job market. "It's not just about doing engineering and becoming an engineer," she told the forum. "It is about skills in certain areas. When you combine those skills together, that's what's going to lead to an exciting career."

Ms Williams said there was a "huge translation issue" around what STEM careers really looked like, and what STEM subjects could foster. "We've got to talk about what it is you want to achieve (and) what skills you think you need to get there. These subjects matter because the association isn't clear when you're studying. It's only when you get out into the world that you kind of say, 'I see where this fits.' "

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> MICHELLE SIMMONS
> UNIVERSITY OF NSW

Professor Simmons said an aversion to technological subjects, particularly among women, was symptomatic of an Australian penchant for taking easy options. "We've shied away from doing the difficult things, and as a consequence we've dumbed down a bit," she said. "We've reduced our opportunities. The best thing you can do is the subjects you find most challenging. As you go through your career, opportunities will open up."

She told the seminar maths and coding should be compulsory at school. But beyond that, students of all ages should be guided by their interests.