

MEDIA RELEASE

Problem solved? Teach coding in all schools

4 August 2016: Coding should be a key component of meeting the digital technology curriculum objectives, Emeritus Professor Leon Sterling of Swinburne University of Technology will tell delegates at ACER's *Research Conference 2016* in Brisbane next week.

Research Conference 2016 will consider educational research that investigates how best to improve science, technology, engineering and mathematics (STEM) learning.

Professor Sterling will address ways in which coding and other computing projects can be structured to give students experience with important generic skills such as persistence, collaboration and communication.

"There has been an explosion in mobile devices over the past decade, with the associated issue of developing the skilled workforce needed to write the apps that run on the devices. This has been a significant factor in highlighting what is taught in schools – STEM education in particular."

"It is not necessary or realistic to expect all students to become coders, but it is important that they appreciate what computers do and how they do it," Professor Sterling said. "The best way I know of conveying the understanding is by having students code. Some students struggle to learn to code. However, without attempting to code, something essential is missing."

Professor Sterling will also address how coding can be added to the school curriculum.

"Space can be made in the curriculum by connecting coding to mathematics and science lessons. Computing examples and well-designed exercises can highlight the relevance of maths and science," he said.

"Recognising faces, translation between languages, and searching in large collections can all be explained in terms of data, and provide practical and interesting experiences for using coding and scientific methods.

Also speaking at *Research Conference 2016*, Professor Tim Bell of the University of Canterbury in New Zealand will explore the importance of teaching coding and programming, and how schools can introduce it into the curriculum.

"If teachers aren't given proper support, the initiative can end up backfiring as both teachers and students can end up confused about what to do, and find the topic frustrating instead of exciting and engaging. It is important that school management understand what the changes are about to avoid giving well-intentioned but misdirected "support" – for example, computer programming is difficult to do without desktop machines with large screens, yet some schools are removing computer labs and giving students mobile devices with small screens," Professor Bell said.

"Students can engage with many of the concepts of computing and computational thinking without using a computer, using approaches like Computer Science Unplugged, which enables them to think deeply about issues in computing without having to learn programming first.

"There are age-appropriate ways of engaging students with the ideas that underpin coding and programming, but if we are to teach these, we need to be clear about the key underpinning concepts and why we are mandating that they be taught. Getting teachers and management up to speed with this requires properly resourcing the transition to having this engaging subject in the curriculum."

Research Conference 2016 takes place in Brisbane from 7 to 9 August.

Further information is available from www.acer.edu.au/rc

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