



R&D minister backs computer skills for all

New Zealand falling behind in computer science education, says Wayne Mapp

By Stephen Bell Wellington | Thursday, 5 February, 2009

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New Zealand needs a broad boost in ICT expertise to help see its way out of hard economic times, says Research, Science and Technology Minister Wayne Mapp.

Improving the ICT capability of the general population and using the power of the internet on offer are two ways to deal with the economic recession, he says. However, this will require educating the workforce in what ICT can do for their particular sector, he told the Australasian Computer Science Week cluster of conferences (ACSW 2009), held in Wellington late last month.

"We will need our tertiary institutions to take responsibility for this," he told an audience largely drawn from the tertiary sector. New Zealand is falling behind in computer science education, he claims.

This is not just a matter of increasing innovation, he says. ICT facilitates all facets of industry and life.

"It will arguably be the most important sector in driving New Zealand out of recession."

Mapp's address neatly dovetailed into the theme of the first keynote speaker, Mark Guzdial, from the Georgia Institute of Technology (Georgia Tech), who has been framing and delivering first-year courses in computer science designed for students who are not computer-science majors.

This has led to similar experimental courses in other educational establishments and in the wider community.

The key lies in establishing the proper context, says Guzdial. The computer science syllabus is used as a "lens" through which to view other disciplines, so basic algorithms can be explained in ways that make them relevant to those disciplines.

Students of media, for example, learn about the manipulation of an array of variables by approaching it from the context of manipulating pixels in a photograph or modifying sound files. Those with engineering majors approach algorithms by programming robots, while architects learn through graphical manipulation.

Georgia Tech first experimented with a one-size-fits-all computer science course for arts and humanities students. Statistics on failure grades and withdrawals from the course showed this was not a success; but with the introduction of contextually relevant courses, pass rates improved significantly.

Some students, moreover, said their learning of some computer-aided parts of their major courses had improved with comments received such as; "now I know what's going on behind the scenes".

A significant proportion of the students went on to take a second-year computer science course, though Guzdial says he is just as gratified to know that many of them were going on to law degrees and may be headed for high political or judicial posts.

The world can only benefit from having people in these positions with a background knowledge of computing science, given the pervasive role of computers and the internet in the future of

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business and government, he says.

ACSW2009 embraces 10 mini-conferences on topics ranging from computer science and modelling to databases and security.

It attracts computer science professionals and academics from Australia, New Zealand and further afield. It was last held in New Zealand in 2004, in Dunedin.

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