PUBLICATIONS

Closing the ITC Skills Gap

We have a real opportunity to look at secondary education differently in Australia.

Secondary education is working for many Australian students, but a sizeable percentage is not being equipped for the workplace. We see the evidence in the high rate of youth unemployment among 15-19-year-olds, which is 24 per cent nationwide and about 45 per cent in many urban areas.

We cannot blame the economy for this alarming situation. Too many young people graduate from secondary school without employable skills in computer technology, engineering, electronics, robotics, auto diagnosis and repair, "mechatronics" or other fields in which demand is high. When they go looking for a job, they have too little to offer. Many of these graduates, failing to get on to an upward career track, will languish in low-paid jobs. This also hurts businesses, which routinely complain that they can't find enough people with the right skills. And so we have a paradoxical situation: young people without jobs and jobs that go unfilled for lack of skilled applicants.

The information and communications technology industry is only one of the industries feeling the pinch. But ICT is an important and growing sector, contributing some $42 billion to the Australian economy and employing nearly half a million people. It's also an area that our youth are most typically adept in, having grown up as digital natives. Yet ICT faces a shortage of skilled hands – not just people with four-year and graduate engineering degrees, but people with high-school-plus technical training. If we fail to find those skilled people, the ICT industry will not achieve its growth potential and the country will be the poorer for it.

The ICT skills gap is not unique to Australia; Europe, India, China, and the Americas are facing similar problems. Some are experimenting with schools that aim to close the gap with novel approaches – often in collaboration with industry. A few are really shaking things up.

In France, for example, 42 is a new computer tech school launched in Paris by telco entrepreneur Xavier Niel. Despite record high youth unemployment, French businesses cannot find enough programmers. Niel's school aims to do something about it, breaking most of the rules of the educational establishment in the process.

Applicants are selected without regard for past academic achievement. Many are school drop-outs. What matters to Niel are their drive, talent, and ability to solve problems. The small percentage of applicants who pass through 42's rigorous screening tests are treated to a curriculum that includes problem-solving sessions that sometimes run for 15 hours a day. Think of it as a boot camp for techies.

Many US states and municipalities are also experimenting with new approaches to reinvent high school. In 2011, New York City's Department of Education, in partnership with New York City College of Technology, City University of New York, and IBM, launched P-TECH (Pathways in Technology Early College High School). P-TECH's grade 9-14 program provides an integrated high school and two-year college curriculum with a heavy focus on science, technology, engineering and math, while also teaching workplace skills such as teamwork and problem solving.

Graduates will receive both a high school diploma and an associate degree in computer information systems or electromechanical engineering technology. The goal is to give students the knowledge and practical skills they need to either go on to four-year colleges or step into entry and mid-level jobs with technology companies.

Educational outcomes from P-TECH have been extremely positive. Attendance is approaching 97 per cent, fabulous by New York City standards, and students are scoring very well on achievement tests – so well that the state of New York is now replicating P-TECH in 16 other communities in partnership with some of the biggest ITC companies in the US, such as IBM,

SAP and General Electric.. About 6000 students will be enrolled overall.

The same model is being adopted in four Chicago schools in partnership with companies such as IBM, Cisco, Motorola and Verizon, a major US telco.

New York City opened two more P-Tech modelled schools and will open another three next year.

The formula for P-TECH includes a focus on technology and a structure that integrates workplace skills into the curriculum; there is a low teacher-to-student ratio (1 to 10); there are overt corporate partnerships; and standards and expectations are high

Whatever it is, P-TECH should bottle its formula and send it around. We could use a dose of it in Australia.

High youth unemployment and our skills gap in IT, manufacturing and other industries will not go away by themselves; we need to do something about them. Reforms to traditional schools and extensive VET system would help but to create game-changing improvements, we need to experiment with radically different educational models that really shake things up.

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