

THE AUSTRALIAN

Stealth fighter approach to STEM learning – futureproofing students

NICK WYMAN THE AUSTRALIAN 11:04AM January 29, 2018

It's not every day Year 9 students get to see and touch F-35 Strike Fighter hornets en masse. Recently a group of Hunter River High School students from Port Stephens (NSW) took up BAE System's invite to do just that.

"Our guides showed us the insides of the hornets as well as letting us see the production line of these beasts. We felt so excited. We could have run a marathon. To us, this will be forever in our memory and the start of a passion for our own P-TECH journey at school," said students Tiane and Gabby.

This is Science, Technology, Engineering and Maths (STEM) teaching in action and it's not a one-off. Hunter River High is one of the early schools piloting the P-TECH, Pathways in Technology, program. Kicking off last year, the program borrows from a New York idea that's expanded across the US and internationally. The first US P-TECH school was established by IBM in 2011 in collaboration with the New York City Department of Education, The City University of New York, and the New York City College of Technology.

In Australia, it has the backing (and seed funding) of the Australian Federal Government plus key driver the Skilling Australia Foundation. The program builds long-term partnerships between schools, industry and tertiary education institutions.

Actually, it's giving high school students the knowledge and skills to seek out STEM pathways. P-TECH is bridging an oft-quoted supposed dichotomy – the hot debate about what schools should focus on – job ready skills or knowledge. Foster students' engagement to build their knowledge of STEM and they have the foundation upon which to develop skills to forge interesting and cutting-edge career paths.

And the penny's dropped for Hunter River High students says one of the teachers: "P-TECH is opening up the minds and hearts of our young students". As of July, 10 schools in six states were running P-TECH programs with more to follow. Apart from the focus on real job opportunities for students, it also nurtures essential workplace skills such as leadership, communication and problem solving. P-TECH gives senior secondary certificate students an industry-supported pathway to a STEM-related diploma, advanced diploma or degree.

We're seeing something of a scramble within schools to get up to speed on STEM to tout it as one of their offerings. Putting a 'STEM' shingle on a school chicken shed does not make a STEM school – yes we've actually seen that shingle out there. It's not about anointing the newbie enthusiastic teacher as the school's STEM-co-ordinator – a move guaranteed to trigger burnout if not a career change. We don't need to demean what teachers do in their daily battle of delivering the crowded curriculum while tackling behaviour management issues. It's too crushing for teachers to expect they have STEM expertise as well as pedagogy. That's what's special about P-TECH, it recognises teachers have teaching expertise and pulls into students' learning experiences the people and companies with cutting-edge expertise in STEM industries.

P-TECH is an example of real support the Federal Government has given to support new education and training models promoting STEM knowledge, skills and training for young Australians. It's unfurled from the Fed's innovation agenda and has been happening when most of us have been mesmerized by digital-tech startup disruptors.

We're in a period of rapid technological change and global competition is a key pillar of Australia's economic growth and prosperity. P-TECH shows how Australia can future-proof our educational models to address jobs that haven't even been invented yet. The program is not really an add-on to the relatively new(ish) national curriculum; it resides neatly and naturally within it. P-TECH ticks off plenty of cross-curricula and key learning areas with ease and importantly, schools that run the program offer students enormous opportunities to reach their full potential.

Australia's pilot P-TECH schools opened in Ballarat and Geelong in 2016, responding to the critical need among parents, educators and employers to give students with relevant and meaningful pathways to employment. In 2016, 100 students took part. IBM partners directly with the Ballarat school, and the Geelong school operates with a consortia of other private companies including Barwon Health, Bendigo Bank, Opteon Group, GMHBA and Tribal Campus. Each pilot represents a multi-sector partnership among educators, local industry, government and community stakeholders to engage and energize young people.

Since then, funding has been allocated to initiate 12 extra P-TECH schools across Australia with many of them already opening this year. This year, we're expecting around 800 students to take part. What's particularly nifty about this program is that each new school that signs on directly correlate with its area's labour market needs. These span growth industries such as aeronautics, defence, financial technology services and food science. For example, Prime Minister Malcolm Turnbull spoke about McCarthy Catholic College in Emu Plains as a P-TECH site partnering with Telstra and PwC, close to the new Badgerys Creek airport. This

airport alone is expected to create an extra 9,000 jobs, and therefore the school may be critically important for upskilling this region.

Industry leaders are also stepping up with 25 employers now signed up. By forging partnerships with industry and educational institutions, P-TECH fosters cross-disciplinary experiential learning, incorporating industry mentors, workplace learning and paid internships. Partners committed so far Ampcontrol, BAE Systems, Telstra, Ergon Energy, Canegrowers Burdekin, SAAB, Century Engineering, Defense Teaming Centre, Jayben, Jetstar Airways, Maltec Engineering, Mars Foods Australia, Sanitarium, Varley Group and Wilmar Sugar and Austal.

By offering students a window into the enterprise world of today, P-TECH and the new education model allows students to develop transferable workplace skills and enterprise mindsets. These are exactly what industry and employers are demanding today and for the future. The pace of change will continue to accelerate and bring with it opportunities. The future belongs to those who can think differently and take risks in the name of innovation.

Nick Wyman is CEO of the Skilling Australia Foundation



MARGIN CALL

Who's who at the tennis

WILL GLASGOW, CHRISTINE LACY

A year after Amber Harrison forced Tim Wornor to lay low, the Seven boss didn't miss Roger Federer triumph last night | PIX



Ten Questions: Janine Perrett

STEPHEN BROOK

Janine Perrett takes over hosting Sky News' late-night panel program Heads Up.



Netflix hits top ranking

STEPHEN BROOK

Global streaming service Netflix has jumped from seventh to first.



COMMENT

Memo to DFAT: This is grotesque

CAROLINE OVERINGTON

When you think about Australian women, do you think 'modest'? 'Covered up'? 'Veiled'? Well, that's how DFAT is promoting us.



EXCLUSIVE

Lottoland covers itself for payoffs

BEN BUTLER

Lottoland covers itself against the risk of having to pay out huge jackpots by buying physical lottery tickets.



EXCLUSIVE

Monkey aims to get grip on kids

STEPHEN BROOK

At 28, it is not Chai Hansen's job to decide what children should watch on television.

Reader comments on this site are moderated before publication to promote lively and civil debate. We encourage your comments but submitting one does not guarantee publication. We publish hundreds of comments daily, and if a comment is rejected it is likely because it does not meet with our comment guidelines, which you can [read here](#). No correspondence will be entered into if a comment is declined.

A NOTE ABOUT RELEVANT ADVERTISING: We collect information about the content (including ads) you use across this site and use it to make both advertising and content more relevant to you on our network and other sites. This is also known as Online Behavioural Advertising. You can [find out more about our policy and your choices, including how to opt-out here](#)

[^ Back to top](#)



Terms of Use

[Editorial Code of conduct](#)
[Standards of Practice](#)
[Subscription terms](#)
[Group Subscription Terms](#)
[Accessibility](#)
[Privacy Policy](#)
[Relevant Ads Opt-out](#)
[Cookie Policy](#)

Contact Us

[Help](#)
[Contact Us info](#)
[Photo Sales](#)
[News Archive](#)

About Us

[About The Australian](#)
[Advertise with us](#)
[Our journalists](#)
[Subscribe](#)
[The Australian Plus member benefits](#)
[Sign up to Newsletters](#)
[Manage Your Newsletters](#)

Copyright The Australian. All times AEST (GMT +10:00)