

Recognising Technology Education

The time has come for technology education to be recognised properly by universities.

It's an injustice to students and teachers that Technology is the only NCEA subject with a Scholarship level not to be on the approved list.

It's a controversial exclusion, with growing pressure for it to be reconsidered. Futureintech has been leading the charge by raising the issue with industry groups, featuring it in publications and lobbying for change.

The snubbing of technology

The traditional argument from universities has been that technology subjects have not yet proven they provide enough academic rigour for inclusion.

Technology advocates, including Futureintech, argue that this fails to reflect the strides technology education has made over the last 10 years. Another major concern is that this exclusion pushes talented and academic students away from a subject which is of vital importance to New Zealand's future.

Brian Allen, Head of Technology at St Patricks College (Kilbirnie), says he has seen this happen "time and time again".

"I've been teaching for 30 years and I've seen a lot of bright and talented kids who have been dissuaded from studying technology subjects by career advisors, who simply look at the list of approved subjects and tell them to study something else.

"The majority of technology students will go on to study at technician or apprenticeship level and don't need to worry about university entrance. So it's an issue which affects a minority of students, but a very important minority.

"The really bright academic students are the ones we should be encouraging into studying technology or else New Zealand is going to fall further behind in

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technological development. It just means that we'll have to rely more and more on overseas expertise in the future."

Outdated perceptions

The list of approved subjects is largely determined by the universities themselves through the New Zealand Vice Chancellor's Committee.

According to Dr Vicki Compton from Auckland University's Faculty of Education, the exclusion is largely due to outdated perceptions of technology education by universities.

"Often they see it as more traditional technical education, based on their own experiences in the past of subjects like woodwork, metalwork, sewing etc.

"I believe it definitely should be on the approved list. Technology education in senior school has the potential to provide opportunities for students to develop technological knowledge and undertake practice in an informed and critical manner.

"This means students coming into undergrad programmes with a strong technology background will be at a distinct advantage, operating at higher level of 'thinking and doing' than other students who may only able to regurgitate knowledge or show discrete skills."

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Road safety at Matangi School

Matangi School, south of Hamilton, is using transportation engineers Bridget Doran and Isa Stuckenberger to help the school with a five week project tackling roadside safety issues.



Bridget and Isa have already put their knowledge to use, developing activities for the children to illustrate visibility and help them consider other safety aspects. Two Futureintech Ambassadors working on the same project means they can share ideas, work with smaller

groups and if something comes up at work, one is still likely to keep the commitment to the school.

A classroom session with the students for an hour and 20 minutes left Bridget with a new appreciation of teachers. "It was harder work than I anticipated keeping the

students' attention - really made me admire teachers, they must be a very patient lot!!"

(pic: Bridget and Isa at Matangi School)

Food Technology

Another school using Futureintech Ambassadors is St Kentigern College. Nick Seager and Tracey Petley-Hibbs are both Food Technologists based at Nestle who have agreed to work with two of Carolyn Norquay's Senior Food Technology classes.

Carolyn and Tracey have started planning a convenience food unit for the Year 11 class. Tracey will support Carolyn's teaching by explaining how she deals with issues such as idea generation, production and process, labelling, sensory factors and the Fair Trading Act issues. The lessons with Tracey will occur over the next term.

Tracey Petley-Hibbs Process Technologist for Nestle Confectionery

"I work for Willy Wonka and I make lollies. My job involves taking raw materials, like sugar, and figuring out how we can use or modify our existing processes to transform them into a range of different products and lollies.

"When I was at school there wasn't a lot of information on the types of jobs you could get at the end of a degree. I just didn't know a job like mine existed.

"I'm quite a hands-on person. I love the idea of being in overalls, covered in sugar, knee deep in a problem. While accounting suits some people, the idea of a desk and calculator, moving numbers round for the rest of my professional life makes me shudder.

"I was always the one in chemistry labs who, after a few hours of experimenting, following a detailed step by step guide, ended up with a pink or blue powder when everyone else had nice bright white crystals. What I learnt though is that when things go wrong, it's the best opportunity to learn, because it pushes you to find out why.

"If you are someone who loves to get in amongst it, not one to stand on the sideline and watch, then you should consider engineering or technology as a career."

Tracey is working with Year 11 Food Technology students at St Kentigern College, on the topic of convenience foods.



Ambassadors in action

Mackays Crossing field trip

Students from Raumati South School had a rare opportunity to go behind the scenes of a major construction site this month, thanks to the generosity of engineering firms MWH and Fulton Hogan.

The two firms gave the students a guided tour around their construction of the railway overbridge for Mackays Crossing, on SH1 just north of Wellington. The new development will take motorists over the railway line, hopefully ending decades of serious crashes and deaths.

Site forman Peter Salnazzaro explained some of the challenges involved in cutting and filling 300,000 cubic metres of earth – such as unexploded US Army bombs left over from their WW2 base!

Big thanks to the MWH and Fulton Hogan who gave the tour free of charge.

Electronics and control

Mount Roskill Grammar School is doing some innovative work in electronics and control technology, with the help of Futureintech Ambassador Carl Chenery.

Each Year 13 student has found a client with a specific need or problem, and then must produce



Raumati South school students on-site with MWH and Fulton Hogan

a conceptual solution to meet the need or solve the problem. A working model is developed before a full scale version is finally built.

One student is developing an infra-red remote control, which moves a manual switch via a solenoid. Other projects include automatic animal feeders for when owners are away, and scales for use in hardware stores.

Because Carl has met the students, talked to them and seen their work the students are comfortable e-mailing him to ask for information and advice. His background in mechanical engineering has given a broad range of skills to use on the different projects.

The class's teacher Bill Collis has set up a website for electronics and control technology that could be useful for other teachers and

students. It's at www.techweb.homelinux.net

Clevedon School NE Award

Environmental Engineer Simone Stratton from Harrison Grierson is working with Clevedon School on a Neighbourhood Engineer Award project to install a sundial at the school.

Simone has met with the Deputy Principal John van Mulbregt and a group of students to begin their project, and talked them through some of the issues involved in placing the new structure.

The Neighbourhood Engineer Award competition is run by IPENZ and requires entrants to show the workings of a team approach (students, teacher and an engineer or technologist) to technological practice involving an issue, problem or opportunity in the local community of the school.

According to an observer, Simone is "a born teacher with her questioning techniques. She made the students really think about things."

These stories are just a few examples of Ambassadors in action around the country. If you're interested in getting Ambassadors involved in your classroom programmes, then get in touch with Futureintech.



Ambassador Carl Chenery talking to students at St Thomas Primary school earlier this year

Futureintech news



Rocket man has left the building

Christchurch students got a vision of the future last week as NASA Engineer Dr Jack Bacon made a flying visit to New Zealand to give a series of presentations.

Dr Bacon discussed NASA's space shuttle missions, the vision for future Moon and Mars missions, and described his work on the International Space Station which he calls 'the most complicated technical project in history'.

Compared to the seriousness needed at NASA's mission control at Cape Canaveral, the Christchurch Town Hall was an extremely noisy and entertaining event.

As well as two presentations to school students, Dr Bacon also a free public lecture later that night entitled "History in the making", and appeared on TV3's *Campbell Live*. His visit was organised and paid for by the Canterbury branch of the Institution of Professional Engineers (IPENZ).

More resources for technology teachers

Futureintech has won a new contract from New Zealand Trade and Enterprise (NZTE) to provide case studies for technology teachers.

www.futureintech.org.nz

Futureintech's website contains a wealth of information for students, parents, teachers and careers advisors. It has profiles of young people working in technology, engineering and science, and the companies they work for, along with information on different courses, careers and scholarships available.

The Futureintech team will be developing case studies of technological practice for the Techlink website (www.techlink.org.nz), which provides resources for teachers and encourages links between schools and industries.

The contract is part of NZTE's Enterprise Culture and Skills and Activities fund (ECSA), which aims to build a culture of business

and enterprise in New Zealand by promoting entrepreneurial attitudes, values and skills.

Promoting careers in ICT

A new magazine for school students promoting careers in Information Communications & Technology (ICT) is being launched later this year. The HiGrowth Trust, a Government initiative to promote careers in ICT, is providing seed funding for the new independent magazine.

According to the magazine's publishers, *Actv8* will "inspire teenagers to become passionate about the positive benefits that technology can have on their lives and careers." It will feature profiles of young people working in and studying ICT, and the latest technological innovations in fields such as fashion, food and music.

120,000 copies of the magazine will be printed and distributed to schools in October.

Weird science grosses out in Auckland

Interactive science for school students has proved a real hit in Auckland – particularly anything involving explosions and bodily functions...

More than 6000 people turned up for Auckland University's annual "Incredible Science" festival held last month, with highlights including slime, bloodstains and chemical explosions.

Long queues lined up for interactive activity areas, while lectures on subjects ranging from bacteria to brains were packed out. Forensic science proved a popular topic, thanks to shows like CSI, according to the university officials.