

WORK WITH US TO HELP CREATE THE ENGINEERING GRADUATES THAT NEW ZEALAND NEEDS

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FROM THE CHAIR . . .

AT ITS JULY MEETING, the Engineering e2e Steering Group had a conversation with Dr Karen Vaughan who leads the New Zealand Council for Educational Research’s programme on vocational and professional education. We acknowledged the great number of STEM and careers programmes on offer in the school sector and talked about engagement with schools, focusing on the language and ideas most likely to resonate with teachers and students.

Karen encouraged us to consider our interactions from the teachers’ perspective, pointing out that their focus is on general education and that specialisation comes later. We learned that teachers and students need more than information to engage with us – we should involve them in experiences. If a schools-based careers initiative is to be successful it needs the support of influencers such as principals and heads of department. To appeal to teachers, programmes need to focus on building students’ capabilities and the benefit to the student needs to be very clear.

Towards the end of the year, we will consider how best to invest the remaining secondary-tertiary funding. The considerations raised during our conversation with Karen will certainly inform our decisions.

It’s exciting to see our work on smoothing the transitions in engineering education result in a feasibility study on regional hubs, and we thank Ara and the University of Canterbury for their willingness to collaborate.

Sir Neville Jordan
Chair, Engineering e2e Steering Group



Regional hubs will simplify the engineering education supply chain

A 2015 TEC-funded investigation by Massey University into degree apprenticeships led to an exploration of ways to simplify the education pathway into and throughout an engineering career. A key recommendation from this research was to form regional engineering education hubs.

In 2017, further research examined whether regional hubs might be used to establish popular and effective pathways into engineering and offer a single entry point for engineering qualifications. Researchers examined the operation of education hubs in other jurisdictions. They completed a literature review and collected data from experts to get a better

WHAT ARE HUBS AND HOW WILL THEY WORK?

We view hubs as collaborative, regionally-based centres for engineering education which involve employers, high schools, universities, institutes of technology or polytechnics (ITPs) and industry training organisations (ITOs). They would develop popular and effective pathways into engineering and offer a single entry point for engineering qualifications. Hubs would support students to make good decisions about their courses of study and allow them to staircase between qualifications.

Hubs would run secondary-tertiary pathways projects, cadetships, scholarships and work experience. They would implement new initiatives, including co-created and taught curriculum and degree apprenticeships. Importantly, hubs would support initiatives that raise awareness of engineering.

understanding of the feasibility, potential, barriers to and drawbacks of such hubs in New Zealand. This research resulted in a set of factors to consider when establishing a single entry point for engineering qualifications and effective pathways into engineering.

The University of Canterbury (UC) and Ara Institute of Canterbury (Ara) have used these factors to develop a proposal for a feasibility study for an engineering education hub. The proposal outlines an exploration of the viability of a regional hub for electrical engineering in Canterbury.

With the support of UC's Electrical & Computer Engineering Department, Electric Power Engineering Centre and Quake Centre, plus Ara and local employers, the feasibility study aims to identify all potential partners such as industry training organisations operating in the Canterbury region and employers of electrical engineers,

technologists and technicians. A small executive will be established comprising one representative from each of Ara and UC, plus one industry member, for the tenure of the feasibility study. This group will establish what governance format is suitable for the Hub itself.

A website will act as the single point of contact for learners and other stakeholders. Consideration will be given to whether the Hub needs a physical presence and, if so, where it should be located and how it should be supported to facilitate access by mature learners.

Information about where opportunities exist and where graduates have found employment will be gathered from employers. This information will be reported to providers and learners.

A report on the study and recommendations for others considering a similar hub will be available in February 2019.

ITP Roadmap regional engagement

As part of the ITP Roadmap 2020 project, the Tertiary Education Commission (TEC) is working with New Zealand's 16 ITPs to map a path to sustainability for the ITP network.

TEC has now completed four of the 16 regional visits, with Northtec (Whangarei), Unitec (Auckland), Wintec (Hamilton) and Toi Ohomai (Rotorua).

All have been useful and illuminating, with common themes but also differences between each institution. At each site, the team has met separately with the ITP Council, CEO, management and staff. A community workshop

has also been held in each location to get the views of employers, local government, iwi, Māori and Pasifika, regional economic development agencies and other voices.

TEC warmly invites engineering employers to attend the community workshops at the twelve ITPs we will visit in July and August. For information about dates and locations, please email engineeringe2e@tec.govt.nz.

We will also do an online survey on www.engineeringe2e.org.nz in the coming weeks to seek views from those unable to attend our regional workshops.

Telling a good story – our case studies on engineering and education

Over the past four years, we've published 57 case studies on engineering educators, students, graduates and employers – sharing their thoughts and initiatives around programme delivery, promotional activities and career opportunities.

Developing a qualification by industry for industry

Concerned about a shortage of fire engineers, fire technicians, fire industry professionals and the lack of a clear career pathway, the Institution of Fire Engineers set about change.



With support from Engineering e2e and in collaboration with the Manukau Institute of Technology, it helped develop a new diploma course, and is also developing micro-credentials in collaboration with other polytechnics.

Several of our most recent case studies focus on ITPs working in partnership with local secondary schools in Engineering e2e's Secondary-Tertiary Pathways Project (STPP). This project enables these ITPs to try out new ideas – our case studies report on what worked well and why some initiatives were changed or abandoned. Whether successful or not, they provide a resource for other ITPs looking to introduce or modify their own courses, activities or promotional events.

Researching girls' attitudes to engineering

Otago Polytechnic is running an STPP-funded research project that aims to find out about girls' perceptions of engineering, whether the type of school they attend influences their awareness and attitudes, and potential barriers to engineering study.

