

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

IN THIS ISSUE . . . we look at the recent evaluation of Engineering e2e as a systems integrator and the six initiatives in which we are involved in this role.

Six key Engineering e2e initiatives to help grow the engineering graduates New Zealand needs

Engineering e2e commissioned an independent evaluation that assessed our role as a systems integrator. As a result we have focused our plans for the programme through six key initiatives, to help address the urgent need for more Level 6 and 7 graduates.

ENGINEERING E2E AS A SYSTEMS INTEGRATOR

In late 2017, an evaluation of Engineering e2e was undertaken by New Zealand Council for Educational Research (NZCER) Chief Researcher Karen Vaughan. This was a review of documentation and 16 interviews, asking about the ways that Engineering e2e acted as a systems integrator and what can be learned from this.

“Engineering e2e took on this role to help achieve the goal of 500+ engineering graduates,” says Engineering e2e Steering Group Chair Sir Neville Jordan. “Our workforce development approach focused on coordinating individual opportunities, organisational goals, and national priorities for economic growth.”

“As a systems integrator Engineering e2e aims to take a high-level, flexible, all-encompassing approach that catalyses, coordinates and monitors activities.

“This evaluation confirms that a designated integrator has an important role to play in supporting the engineering education-to-employment system, and helps identify where we have succeeded and the challenges ahead, particularly in terms of Level 6 and 7 qualification uptake.”

POSITIVE RESULTS FROM THIS APPROACH

The review identified a number of benefits to our systems integrator approach. Here is a selection:

- Taking a focused systems-view approach has attracted engaged stakeholders and helped counter the accepted idea of competition between providers, with influential leadership lending weight and creating momentum.
- The establishment and oversight of new relationships and partnership projects has led to opportunity-spotting, including new things tried in curriculum, pedagogy, and



Draft design for the new Engineering Employer Resource Portal

pathways in secondary and tertiary education and the possibility for changes to credential design.

- Provision of funding and resources has enabled project leaders to work differently and consider possibilities
- Awareness of engineering careers in general, and of specific sub-fields of engineering, has been raised
- Liaison and interaction with stakeholders – tertiary educators, employers, professional and advocacy groups and Government agencies – has helped provide clarity and flexibility

FEEDBACK FROM THE INTERVIEWS

Interviews revealed both a solidarity amongst stakeholders and the voicing of particular individual needs:

- Most interviewees agreed that systems integration in the engineering sector could only happen through a designated entity acting as an integrator; some went further and suggested that its scope should range beyond this sector.
- Project leader interviewees emphasised the role of funding in freeing up attention to see the bigger picture and imagine different ways of working.

- Steering Group interviewees emphasised the value in being part of something not “owned” by any one organisation, and having a collaborative approach with a mandate to try things.
- All interviewees picked out new or stronger relationships as the key to success. These enabled new or deeper understandings and fostered open communication and collaboration possibilities.
- All interviewees saw value in realigning their work with others and thought the role of a designated integrator supporting the engineering education to employment system was important.
- Some interviewees questioned the mix of stakeholders and forms of engagement or interaction with them – such as the lack of representation from the compulsory schooling sector. Some thought that Engineering eze was driven by a focus on credentials targets at the expense of other considerations.

WHERE TO NEXT...

The evaluation reemphasised the pressing need for more Level 6 and 7 graduates, pointing quite critically to some of the reasons for the current shortfall.

“Our public awareness campaign was highly successful in raising awareness of engineering, but did not increase enrolments in the NZDE and BEngTech,” says Sir Neville.

“Ongoing public misconceptions about the status, role and place of institutes of technology or polytechnics (ITPs) and their qualifications are proving very difficult to change, and is something that urgently needs to be addressed.

“The evaluation also identifies the need for systemic change within the education sector to ensure students are provided with transparent, appropriate and efficient pathways into their engineering careers.”

THE ENGINEERING E2E WEBSITE IS MOVING

Between 14 February and 7 March we'll be moving the Engineering eze website from Engineering New Zealand to TEC.

We'd like to thank Engineering New Zealand for building and hosting the site – they've done a great job and we appreciate their support.

You shouldn't notice the change but during this period we'll be unable to post any new material.

“With Engineering eze's immediate and ongoing challenge to increase the number of Level 6 and 7 graduates, we have six key initiatives over the next two years in place. These are outlined as follows, but much more action is required to ensure New Zealand has the right kinds of engineering graduates for its current and future needs.”

Micro-credentials

Our work on micro-credentials prioritises the uptake of the NZDE in engineering disciplines that have been under-served, and for those in employment. See www.engineeringeze.org.nz/Documents/eze-micro-cred-nov-2017.pdf

A diverse engineering workforce

Engineering eze is funding Te Tapuae o Rēhua to implement a programme that will more than double the number of Māori engineering graduates from Ara Institute of Canterbury (Ara) and Otago Polytechnic by 2021.

Degree apprenticeships – a new approach to qualifications delivery

The work-based degree apprenticeship is co-designed by employers and ITPs, with employers leading the process with support and guidance from curriculum developers. Engineering eze is funding WelTec and Otago Polytechnic to implement a degree apprenticeship.

Continue our work in the compulsory education sector

Continued support for six collaborative initiatives between secondary and tertiary institutions to deliver programmes to prepare and pathway students into tertiary engineering study. See www.engineeringeze.org.nz/Documents/eze-stpp-nov-2017.pdf

Growing the pipeline of work ready engineers

Continued support for Ara's work to facilitate collaboration between industry and educators to improve the relevance of engineering education.

Engineering education hubs – a new system?

Perhaps the most radical of our next steps is to explore the establishment of engineering education hubs – collaborative, regionally-based centres for engineering education which involve employers, high schools, universities, ITPs and industry training organisations (ITOs).

See www.engineeringeze.org.nz/Documents/eze-hubs-nov-2017.pdf

FIND OUT MORE...

For the full report see: www.engineeringeze.org.nz/Discoveries/What_we_discovered.cfm