

30 October 2020

To: Department of Education, Skills and Employment

ACED Response to National Priorities and Industry Linkage Fund Consultation

I write on behalf of the Australian Council of Engineering Deans (ACED), the incorporated association of the leaders of the 35 Australian universities that provide externally accredited degree programs, research and consultancy services in Engineering.

ACED views the NPILF as an opportunity to further improve the engagement of engineering students (and those in other fields) with the worlds of work. The Engineering faculties have for decades demonstrated that the ‘engagement with professional practice’ as required in engineering degrees accredited by the internationally benchmarked professional body, *Engineers Australia*, contributes to strong employment outcomes. The most recent QILT Employer Satisfaction Survey reported 89.9% of the surveyed employers having ‘overall satisfaction’ with Engineering graduates, the highest rate of all fields of education. Furthermore, the employment rate of Bachelor degree graduates in Engineering has headed the STEM fields for many years (QILT Graduate Outcomes).

ACED takes engagement with industry seriously. Our evidence-based guidelines¹ are echoed in the indicators and metrics proposed in the NPILF consultation paper. Our research² has confirmed that an intensive period in industry (internship) is the best way of enhancing employability. ACED’s work in this area, and this submission, is always undertaken in consultation with *Engineers Australia*.

Providing high quality internships and other industry-engagement methods to more than 20,000 students per year is, nevertheless, an increasingly challenging task, not least for our industry partners, many of whom are SMEs. The NPILF offers opportunities to improve on current practice, extend good practice across the STEM+ areas and further incentivise employers.

Summary Responses to the Questions for Discussion

1. The five principles are clear and reasonable, but industry and the professions must be brought into the discussion on design and implementation of the program.
- 2 – 4. Assigning the ‘indicators’ to the three types (tiers) is complex and confusing. The indicators themselves provide good coverage of what a specific initiative may achieve. Most of the indicators are qualitative or quantitative metrics that should be applied selectively to any actual WIL or STEM+ initiative. Performance metrics that are based on employment increases (for instance) need to be interpreted in their contexts and on appropriate timescales. The number of indicators covered in a university plan should not be over-prescribed. We would prefer a plan or portfolio structure of initiatives differentiated as “*new (demonstrators)*” and “*improvements on evidence-based good current practice*”. There could be perhaps at least three of each of these in a valid university portfolio. Performance metrics/indicators would then apply to each initiative.

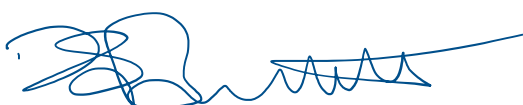
¹ S. Male and R. W. King (2014). *Best Practice Guidelines for Effective Industry Engagement in Australian Engineering Degrees*. Report of ACED project funded by Dept. of Industry.
http://www.aced.edu.au/downloads/aced_industry_engagement_guidelines.pdf

² S. Male and R. King (2019). *Enhancing learning outcomes from industry engagement in Australian engineering education*, Journal of Teaching and Learning for Graduate Employability, Vol 10, 1, 101-117
<https://search.informit.com.au/documentSummary;dn=580683621107131;res=IELHSS>

5. In line with the principles, industry linkage measures should be kept simple, and respect the norms of each discipline, industry and profession. Above all, industry – in its diversity – must be consulted on meaningful and workable measures.
6. As suggested above, a university plan or portfolio should be assessed on its constituent initiatives. Post-pilot tapering of allocation based on reported performance makes sense.
7. ACED favours banded funding, as proposed in the pilot phase. ACED also believes that NPILF funding must be applied to and accounted against planned NPILF activities, contrary to the statement on page 18 of the paper.
8. ACED supports the definitions of WIL, STEM+ and industry partnerships, and the three priorities and aspirations of the NPILF initiative. The urge to breakout from ‘outdated and simplistic metrics and approaches’ is welcome but initiatives and metrics must also build on what has been proven to work in each discipline and its industry and professional partners.
- 9 – 12. ACED members are already strongly and successfully engaged with industry as stated in the preamble of this submission. ACED works with *Engineers Australia* to ensure methods for industry engagement respond to changes in the complex and diverse ecosystem of engineer employment. To be successful the NPILF will need to incentivise employers across private industry and government-based enterprises. We note that the number of ‘co-op’ education programs in Engineering has declined; degree apprenticeships in many priority fields could revive the essentials of this successful educational model. Most Engineering students are already motivated to ‘think beyond the lab’ because of the vocational focus of Engineering and its good employment prospects. Most Engineering faculties and schools seek to ‘bring industry into the lab’ and see NPILF as supporting this concept.
13. Yes, there are challenges for SMEs, not least in the regions, to provide industry engagement in Engineering and other priority fields, particularly in terms of providing staff resources for supervising students. NPILF could provide systematic support to SMEs to release staff in innovative high priority enterprises (e.g. in advanced manufacturing), similarly to R&D incentives.
14. ACED systematically shares best practice in educational matters through its network of Associate Deans (Learning and Teaching) and the national conference of the Australasian Association for Engineering Education. Improving industry engagement is always a topic on the agenda.
15. Exemplars of good practice in undergraduate industry engagement, such as those at Swinburne University and Charles Sturt University can be provided on request. Many individual universities including my own, may provide engineering examples in their responses.
16. No, NPILF will contribute, but there are many other areas to develop, including microcredentials and degree apprenticeships, as mentioned above.
17. Meaningful outcomes, especially those that relate to graduate satisfaction, etc., take many years to accrue from initiatives in this area. Nevertheless, annual reporting on the specific initiatives within a university portfolio is reasonable.

ACED will be pleased to provide further information as required, or attend an Inquiry hearing.

Yours sincerely



Professor Ian Burnett