Inquiry into Funding Australia's Research

Standing Committee on Employment, Education and Training

VICTORIAN TAFE ASSOCIATION

Victorian TAFE Association Response

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The peak body for Victoria's TAFE network

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Introduction

The Victorian TAFE Association is the peak body for Victoria's public providers of Vocational Education and Training (VET), including 12 TAFE Institutes, four dual sector Universities and an Associate member, AMES.

The Victorian TAFE Association welcomes this opportunity to provide input to the Standing Committee on Employment, Education and Training's Inquiry into Funding *Australia's* Research. The Victorian TAFE Association would like to provide comment on the following:

- Broadening scope and understanding
- Supporting TAFE research
- Maximising research impact

Broadening scope and understanding

The Frascati manual describes research as "creative and systematic work undertaken in order to increase the stock of knowledge…and to devise new applications of available knowledge". It goes on to identity three main types, including basic (or fundamental) research, applied research and experimental development.[1]

Another way to look at research is to view it as operating along a spectrum, 'bounded' by fundamental research at one end, and applied and translational research at the other. Drawing on the Frascati approach, fundamental research can be described as "experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view". On the other hand, applied research is construed as investigation directed towards acquiring new knowledge for a specific purpose or practical aim and with a specific use in mind. Translational research too is motivated to create and demonstrate practical use but goes further towards adoption and/or change in institutional and/or social structures and in human practice and custom.

The Terms of Reference to this inquiry require consideration of research investment in "research institutions, in particular universities", revealing a limited view of research that focuses on the mostly fundamental research conducted in universities. But the definitions of research referred to above mean that this view fails to grasp the breadth and diversity of research activity, much which occurs outside of these confines.[2]

Indeed, a number of activities undertaken by TAFE institutes fit within each of the conceptions of research, and there has been much work within the TAFE and broader VET sector to support, encourage and build research culture and activity. Examples include:

[1] https://read.oecd-ilibrary.org/science-and-technology/frascati-manual-2015_9789264239012-en#page47, accessed 27 June 2018.

[2] That universities and research bodies carry the almost exclusive focus is visible in numerous Commonwealth policies, reviews and reports. For example, the 2016 National Research Infrastructure Roadmap focused on facilities and infrastructure owned and operated by universities and other research bodies, with no consideration given to the considerable infrastructure owned by TAFE institutes. Similarly, the view manifests in the absence of programs designed to increase the role of TAFE and the VET sector in research and innovation (for example, there is no VET equivalent of an ARC Linkage Grant, though the Workforce Training Innovation Fund (WTIF) in Victoria comes close).

- Investment by the Victorian TAFE Association members to support and build research activity, such as:
    - The allocation of more than $600,000 over three years by William Angliss Institute to support staff to undertake research projects and to develop HERDC recognised research outputs. William Angliss has also linked scholarly practice to currency requirements for all teaching staff, with research not optional but a fundamental part of teacher duties.
    - The establishment of the Centre for Applied Research and Innovation at Holmesglen Institute, which works (among other things) to assist in the identification of applied research and innovation opportunities and to foster student involvement in applied research and innovation.
- Leading and partnering in large scale research projects by TAFE institutes. By way of example, Holmesglen Institute is working with universities and its partner, Healthscope, on a National Health and Medical Research Council (NHMRC) funded project to prevent falls in Australian hospitals; and with South East Water to develop heating processes for harvested water for use in domestic dwellings (which involved construction of test facilities at Holmesglen). SuniTAFE and its industry partner, Agromillora (a world leader in fruit and olive tree propagation) are working on experimental super high-density crops of Almonds and Olives at SuniTAFE's Cardross Farm.[3]
- The development and operation of world-class infrastructure used for TAFE teaching and research activities, such as the Automotive Centre of Excellence located at Bendigo Kangan Institute (which includes world-class vehicle and engine testing facilities and a purpose built auto-electrical lab); facilities developed by Chisholm Institute, including the Health Centre of Excellence at its Berwick campus (which features nurse training and simulation laboratories) and the Centre for Advanced Manufacturing at its Frankston Campus (which includes a purpose-built, industry-driven flexible, integrated Design Centre); cutting edge facilities at William Angliss Institute (such as 3D printers that are used to research food production); and the establishment Australia's first Clinical School for enrolled nurses developed by Holmesglen Institute in partnership with Healthscope.
- Research Fellowships offered by the International Specialised Skills Institute, which supports researchers in the TAFE and VET sector to undertake international research with the intention of generating actionable knowledge, solutions and innovative practice to inform education and training practice and industry processes.
- Establishing applied research dissemination platforms, including events and symposia hosted by the Victorian TAFE Association and others[4] and the development of Applied Research and Innovation Webinars to give TAFE researchers an opportunity to display research to their peers.[5]

[3] Further examples of research projects can be seen at https://www.vta.vic.edu.au/applied-research, accessed 28 June, 2018.
[4] For example, a Symposium was held in 2016 that was attended by approximately 160 people. The purpose was to showcase applied research in TAFE (https://www.vta.vic.edu.au/research-directory/applied-research-events accessed 28 June 2018). In 2018, a conference was organised by the Australian Vocational Education and Training Research Association to showcase VET practitioner research (https://www.avetra.org.au/pages/inaugural-avetra-vet-practitioner-research-conference-2018.html, accessed 29 June 2018).
[5] The Applied Research and Innovation Webinars can be seen here: https://www.vta.vic.edu.au/research-directory/webinar-series (accessed 28 June 2018)

- The establishment of the VET Practitioners Research Network, which provides an outlet for the dissemination and sharing of research activity that occurs within the VET sector.[6]

The Victorian TAFE Association therefore recommends that the inquiry broaden its view of research, including the places in which it occurs and to its many and varied types. This would ensure that the activities of this inquiry capture the entire gamut of Australian research activity, including that which occurs within TAFE.

Supporting TAFE research

The Terms of Reference to this inquiry commence with a requirement to consider the "diversity" of research investment. But a view that bounds research to that which occurs in universities results in research investment that is anything but diverse, being limited to those bodies (the universities) that form the limited view of research.

For Australia's TAFE sector, this manifests itself in a paucity of programs to support its research. There are two broad ways that TAFE sector research is not supported.

The first is through explicit exclusion. In this instance, the TAFE sector is unable to access existing research funding schemes, with the rules underpinning such schemes prohibiting or limiting the manner of its participation. For example, the rules governing the two major Australian Competitive Grant Schemes (those administered by the Australian Research Council (ARC) and the NHMRC) make TAFE institutes ineligible as administering organisations. While TAFE may participate, it can do so only as a partner to a university or other eligible body.

The other way TAFE is excluded is through the absence of programs explicitly designed and targeted towards research in TAFE. But Australia's absence can be contrasted to other comparable judications that have valued and invested in TAFE-equivalent research.

For example, Canada's College and Community Innovation (CCI)[7] program supports Canadian colleges and polytechnics (Canada's TAFE equivalent) to work with small and medium-sized enterprises on applied research projects. Its aim is to increase innovation at the community and/or regional level and increase the capacity of colleges and polytechnics to work with local industry on applied research projects.[8] Germany and the Netherlands too explicitly recognise and support TAFE-equivalent research, including through the Fachhochschulen (universities of applied science) in Germany and Hogescholen in the

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[6] https://vprn.edu.au/

[7] http://www.nserc-crsng.gc.ca/Professors-Professeurs/RPP-PP/CCI-ICC_eng.asp, accessed 29 June 2018.

[8] A 2015-16 analysis found that the CCI resulted in:

- almost 3,000 college staff engaged in research, up from 1,600 in 2010-2011
- over 25,000 college students engaged in research, an increase of more than 80 per cent since 2010-2011
- more than 6,300 Canadian companies partnering with colleges on research, with most of these small to medium sized enterprises
- the development of 900 new products, processes, services and prototypes
- a 76 per cent increase in the level of research funding since 2010-11 (this includes funding from government and the private sector)
- a 55 per cent increase in private sector funding for research since 2010-11

The full report can be accessed by visiting https://www.collegesinstitutes.ca/file/inclusive-innovation-at-colleges-and-institutes-highlights-from-the-2015-2016-cican-applied-research-survey/, accessed 28 June 2018.

Netherlands, which are public tertiary education institutions established and orientated to applied models of learning and research for small to medium enterprises (SMEs).

Similarly, there are no Commonwealth programs to invest in TAFE research infrastructure and facilities. Yet as noted elsewhere, TAFE institutes own and operate impressive infrastructure that is used for training and research purposes, many of which are missed in research infrastructure reviews and policies, resulting in a national research resource that is under-used and not fully engaged in research.

The Victorian TAFE Association therefore recommends implementing competitive grant schemes to develop and support TAFE research capability and infrastructure. Further, we recommend that the rules of current schemes/initiatives be reviewed with a view to addressing unreasonable and unnecessary barriers to TAFE participation.

Maximising research impact through TAFE

In recent years, governments have investigated mechanisms to measure research impact, which the ARC defines as "the contribution that research makes to the economy, society, environment or culture, beyond the contribution to academic research". The underlying desire is to ensure that Australia's research activities translate into tangible economic and social benefits that maximise Australian prosperity and increase Australia's ability to "engage effectively with current and future national and global challenges".[9]

One way to determine research impact is to consider levels of innovation in Australian firms. This is because the level of innovation suggests a willingness or ability to adopt/adapt new knowledge, processes and technology (in other words, the outputs of research). On this measure, Australia's research impact appears low, with OECD data showing that just 3.5 per cent of large Australian firms collaborate with universities and public research institutions, while the figure is only 4.1 per cent for SMEs. Australia is among the lower performers on this measure, which suggests poor levels of enterprise innovation.[10] This is supported by a recent report by Innovation and Science Australia, which found that on many measures Australia's levels of innovation are low by international standards.[11]

The Victorian TAFE Association considers that Australia's relatively poor performance in innovation and research impact can at least in part be attributed to Australia's research investment policies. Much policy directed towards innovation and research impact is crafted with the goal of fostering greater links between universities and industry, in the hopes that this will promote greater levels of innovation.[12] In this approach, the universities and research bodies create new knowledge that industry, which is the end-point, takes and transforms into new goods, services and processes. While this linear approach is appealing from the point of ease and simplicity, it misses the plethora of additional 'actors' such as TAFE who have a significant role in Australia's research and innovation system, thereby diluting the effectiveness of policy putatively designed to foster greater levels of research impact and innovation.

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[9] http://www.arc.gov.au/research-impact-principles-and-framework, accessed 27 June 2018.
[10] OECD Science, Technology and Industry Scoreboard 2013, page 127.
[11] https://industry.gov.au/Innovation-and-Science-Australia/Documents/ISA-system-review/Performance-Review-of-the-Australian-Innovation-Science-and-Research-System-ISA.pdf, accessed 27 June 2018.
[12] For example, the National Innovation and Science Agenda Report outlined a plan to "change funding incentives so that more university funding [emphasis added] is allocated to research that is done in partnership with industry" https://www.innovation.gov.au/page/national-innovation-and-science-agenda-report, accessed 29 June 2018).

A superior approach would be one that draws on and recognises the many and varied parts of the research and innovation system. One such approach is the 'innovation ecosystem'.[13]

In brief, the innovation ecosystems approach, like its biological analogue, looks at the large number of diverse and interdependent elements that drive research impact and innovation. These range from human factors (such as researchers, teachers, investors, students, entrepreneurs, tradespersons, artists and professional service providers) to material (such as funds, facilities, equipment and general infrastructure) and immaterial factors (such as the legal structure and other customs and institutions that are essential for trade, interaction and flows of information). Unlike the linear approach to innovation, the innovation ecosystem approach recognises that research, knowledge creation, impact/adoption and commercialisation are not the domain of a single entity or group but can be seen in the activities of each of the ecosystem's constituents.

Australia's TAFE institutes and the wider VET sector are renowned for their strong links to industry and the community, for industry-based learning and for applied and translational research that puts research into practice in real-world industry and community settings. As an inventor or creator of knowledge in its own right, the TAFE and VET sector is highly skilled in providing insights, fresh eyes and practical solutions to the application of knowledge that solves industry and community problems. The Victorian TAFE Association considers that the TAFE sector is a key participant in Australia's innovation ecosystem, and with its strong industry and community links, represents a major opportunity to improve research impact and innovation.

With this in mind, the Victorian TAFE Association recommends that this inquiry give full consideration to the role of TAFE in driving innovation and research impact, of the ways that current policy limits or fails to support TAFE in this role, and to the development of policies to amplify and support TAFE in supporting research, research impact and innovation.

Key contact

The VTA welcomes the opportunity to speak further to the issues outlined above. To do so, please contact:

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[13] https://www.tda.edu.au/wp-content/uploads/2018/02/Report-lhmi-Bridge-to-opportunity.pdf, accessed 29 June 2018.