

Response to the Australian Universities Accord discussion paper

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TD School brings together different perspectives, data, information, tools, concepts, techniques, and theories from radically diverse disciplines to inform its transdisciplinary education degree programs and research. The first of its kind in Australia, TD School was established to help tackle complex problems that require building bridges between fields of study and expertise.¹ TD School seeks to provide a space where ideas can be shared more fluidly between industry and universities, and people can thrive through exposure to new ways of thinking. TD School is the home of the UTS flagship Bachelor of Creative Intelligence and Innovation degree, which has won numerous national and international awards for its extensive collaboration with industry and contribution to the development of graduates' capacity to create social and environmental impact.

The assumptions about disciplinary structures and hierarchies that are currently baked-in in education policy and funding arrangements promote rigid graduate career pathways and stifled innovation and industry/university collaboration opportunities. The key premise of this submission is that the University Accord must reflect a strong vision of a desirable future for the Australian higher education sector, rather than aiming to fix the university system through a series of band-aid solutions. This includes encouraging **future-orientation, adaptation and innovation as the key characteristics of the**

¹ <https://www.afr.com/work-and-careers/management/university-of-technology-sydney-bets-big-on-transdisciplinary-courses-to-boost-creativity-and-innovation-20161201-gt1ge3>

university sector, rather than perpetuating reactive responses to ongoing disruptions and crises.

Below are UTS TD School's responses to the selected questions that align with our expertise and experience.

Q4 Looking from now to 2030 and 2040, what major national challenges and opportunities should Australian higher education be focused on meeting?

We have concerns around how this question is framed. Recent 'black swan' events, like the COVID-19 pandemic or the emergence of artificial intelligence tools such as ChatGPT demonstrate that we cannot predict major disruptive events. Whilst these disruptions have challenged our assumptions about higher education funding models, modes of education delivery and assessment integrity, universities responded to these challenges in an ad hoc and reactive manner.

To ensure ongoing relevance and resilience of the higher education sector, universities should adopt an anticipatory approach to working with the unexpected and unknowns in the future horizon, whereas Question 4 asks for a predication. Whilst from today's perspective we could create a 'laundry list' of challenges that we think will be affecting higher education longer-term, in 10 years' time we are likely to produce an entirely new list of challenges, as the context shifts. Moreover, it is unclear why the question is focused on 2030-2040, rather than from now (2023) to 2040. Universities should be focussing on issues as they emerge and evolve, so we can immediately adapt and move forward from here.

If we are to deliver education and research that meet urgent needs in urgent times, the higher education sector as a whole needs to **shift from being reactive to being proactive**. By this, we mean that we need to stop devising specific strategies for each challenge as they arise and instead work on developing longer-term resilience and general future-orientation within the sector as a whole. As part of this shift, universities have to begin seeing themselves **playing an active role in shaping the future**. We should not just be seeking to predict and address challenges on the foreseeable horizon, but also creating modes of higher learning and knowledge production in collaboration with industry, community and government partners to determine these futures. By **co-evolving knowledge in an anticipatory fashion within the broader ecosystem**, universities as public institutions can create knowledge infrastructures that will continually generate new responses and relevant outcomes. Transdisciplinary education and research are examples of these types of anticipatory, adaptive and participatory approaches that span the boundaries of organisations offering opportunities for mutual learning and value creation for all involved.

In the context of the above considerations, from today's perspective, we see the following areas as the key challenges that universities will have to grapple with over the next few decades:

- climate adaptation and transition towards more sustainable futures;
- decolonisation of disciplinary and professional knowledges and practices;

- increased and equitable access to higher education and research, including opportunities for a lifetime of learning across populations and age groups; and
- shifts in the role that Australian higher education sector plays in Australasia/Oceania region and global contexts (post-pandemic and given the evolving geo-socio-political concerns).

In the context of these challenges, **building connections and resilience across sectors** should be foregrounded, with a focus on **opportunities to create social and environmental impact in these areas**. We need to embrace what we have learnt so far (e.g. through the pandemic) and continue rapidly integrating knowledge across different disciplines to experiment and trial new approaches with broader implications in collaboration with relevant parties. In so doing, universities should be encouraged to shift away from the conceptualising the value of engagement with external organisations primarily in terms of economic benefits achieved through transactional exchange and commercialisation of knowledge. Instead, **higher education institutions should be funded, and incentivised to create and sustain infrastructures for participatory and engaged knowledge co-creation** as well as for the development of future-oriented capabilities in today's learners (i.e. pre-silience). We need to privilege the funding of programs that support the inner and outer growth of active citizens to equip them with the agency, creativity and complex systems understanding to tackle the urgent challenges of our time, whatever they might be in the years to come.

Q5 How do the current structures of institutions, regulation and funding in higher education help or hinder Australia's ability to meet these challenges? What needs to change?

The current prestige and funding structures favour some institutions over others, perpetuating competition and inequitable distribution of funds in the sector. Funding should not be relative to size nor historical privilege but relative to opportunity and potential to serve relevant communities and create impact; and this has been a persisting hindrance in Australia's ability to create, grow and rejuvenate the sector. Funding also rarely requires collaboration across alliances or consortia of universities, like Horizons or World University Network grants, presenting another missed opportunity to focus more on the challenge at hand than obsessing about which (singular) university is awarded the funding.

This privilege reinforcement and hyper-competitiveness is the case both across institutions and within the internal university structures, whereby KPIs and performance metrics tend to encourage unsustainable practices, resulting in wastage of time and resources within a system that rewards singular winners and overlooks collaborative process and outcomes. **Funding and recognition should be based on differentiated expectations, recognising the unique positioning of each institution** rather than a one-size-fits-all approach, which results in all institutions trying to replicate the 'winning formula' as they compete against each other (for students, for research grants, etc).

The competition between universities and between faculties within universities is detrimental to the overall goal of growing Australia's capacity for knowledge creation. It is commonly accepted that the metrics for academia inadequately measure and incentivise the types of outcomes and impact we want to see in the world. We need to move – from the current transactional approach around measurement and divvying up of funds – towards a more holistic acknowledgement of collaborative contributions that create real impact. Treating each faculty and university with its own P&L and cost structure is damaging. This leads to bragging and chest-beating of universities (and academics within universities) that are powering ahead in disparate directions, with no incentive to collaborate to achieve greater impact. Current workload policies within faculties also restrict knowledge co-construction and building collaborative expertise. There needs to be **better incentives for collaboration both within and between universities, including opportunities for learners and researchers to transcend disciplinary silos.**

Possible ways forward are:

- Closer alignment of academic performance metrics with the existing social and environmental impact metrics (eg. SDGs).
- Development of new academic rankings and performance metrics to incentivise collaboration, contribution to the common good / development of the resilience of the higher education sector as a whole.
- The measurement of types of 'wealth' that are not traditionally measured. (How do we measure the transformation of our students, the purpose they have or the impact they have after graduation and across the many years that they contribute to our society? We need to do this important work in a more meaningful way to surface the true impact a university might have).
- Grants that explicitly require or favour team-based research from across multiple faculties and universities.
- Recognising areas of strength and differentiation across universities (as well as future potential revealed through experimentation) and encouraging growth in those areas.

Q9 How should Australia ensure enough students are studying courses that align with the changing needs of the economy and society?

The framing of this question seeks a reactive response. The role of higher education is positioned as being about producing graduates who can plug the holes in society and the economy, a literal translation of needing people in certain industries. Taking a more anticipatory stance, we should not see universities as simply training graduates for the needs of the workforce. Industry 'needs' are not fixed; they evolve and are shaped by experts and professionals who work in them. Universities should be seen as playing an active role in preparing these future leaders and change-makers who will respond to the changing needs of the economy and society. In fact, we would argue that universities can play a pivotal role in **creating more sustainable and equitable Australian society and economy, rather than just in producing graduates for an already problematic and inequitable system.** We need to look carefully at what we measure and incentivise and balance the 'needs' of the economy and society with the

needs of a world (and individuals) in a state of rapid transformation. **A more expansive definition of ‘future needs’ (beyond needs of the economy’ and employability outcomes) is needed, with a mandate and government support for universities to experiment and innovate to uncover yet unknown future needs and opportunities.**

It is important to note that this challenge has to be considered holistically – higher education is just one component of the overall education and innovation system that creates and provides expertise to serve societal needs. For example, even if we incentivise education in nursing and education, we are still not addressing the fundamental flaws in the system such as unmanageable workloads that make these career choices less appealing or unsustainable for individuals to stay on for longer.

Based on TD School’s experience in transdisciplinary education and research, including outstanding graduate employability outcomes well above the national average, we believe that learning by tackling real-world challenges through engagement with peers from across the disciplines under the guidance of academic and industry experts from a range of backgrounds creates multi-skilled graduates with the potential of being life-long learners. By **gaining transdisciplinary future-oriented capabilities alongside focussed skills in disciplinary fields**, graduates are equipped with the capability to continually develop and evolve their knowledge and skills in collaboration with others, in the areas of need as they emerge.

To address the question literally, if university study is all about developing graduate capacity to respond to ‘changing needs’; then **a transdisciplinary approach to education would be the answer. More higher education institutions around the nation should be incentivised to experiment in this space.** Not to diminish the importance disciplinary depth of knowledge, but to bring the expertise across a range of areas together in a collaborative culture that has the potential to make our graduates multi-skilled and better equipped for the changing socio-economic needs of the future. At UTS, whilst most courses are focussed on developing disciplinary or professional expertise, they now have compulsory transdisciplinary subjects embedded in their core degrees; towards the beginning of the degree, not bolted on at the end. These subjects have future-oriented, adaptive curricula co-created with industry, community and government partners. By ensuring that university students have access to transdisciplinary learning experiences that evolve with the needs of the time, we can bypass the need to predict the future and ensure that ‘enough students are studying courses’ for future needs; since these types of **transdisciplinary learning experiences would equip ALL graduates with skills and knowledge needed to tackle the changing socio-economic needs.**

Q10 What role should higher education play in helping to develop high quality general learning capabilities across all age groups and industries?

As outlined earlier, transdisciplinary learning represents a model for how high-quality general learning capabilities might be achieved, without shifting away from the expertise developed in faculties, which needs to develop as the basis for transdisciplinary collaboration. In addition to learning disciplinary knowledge and

practices, this approach includes learning to learn (by productively engaging with uncertainty) in a collaborative and integrative manner. We need to reframe the notion that a degree prepares you for a narrow career in an even narrower field and prepare learners for futures we don't imagine yet.

Transdisciplinary capabilities include analytic, creative, experimental capacities that draw on approaches and methodologies from across a range of disciplines. This is underpinned by a reflexive, purpose-led and action-oriented stance towards the world, enabling graduates to engage with any context they encounter upon graduation with self-awareness, curiosity and learning-orientation. Transdisciplinary graduates envision, enact and create change through experimentation, collaboration and engagement with others working in the area, steering the whole system towards more desirable futures.

We believe that the future-oriented transdisciplinary capabilities encompass and transcend 'high quality general learning capabilities' developed as part of disciplinary learning, therefore, **we would advocate for an overall stronger focus on and support for collaboration across the disciplines and beyond the boundaries of the university in the higher education sector.** In particular, higher education sector should be ready to evolve and mould these types of transdisciplinary education experiences broadly across undergraduate and postgraduate education spaces, regardless of the learner category.

TD School at UTS has developed into global leaders of transdisciplinary education in Australia and this advantage is now being shared globally.

Q14 How should placement arrangements and work-integrated learning in higher education change in the decades ahead?

Students are reportedly unhappy about needing to do unpaid internships and paying for these subjects in their HECS debt. The requirement for guaranteed work placements to satisfy accreditation requirements currently restricts student numbers, for example, in health and education degrees. The current positioning of work-integrated learning implies that a student has to undertake an education *before* they have access to the job market. This puts the burden on young people to pay for their education, whereas it is their employers who stand to gain from 'job-ready' graduates.

Alternative models of work-integrated learning already exist, such as the **'earn while you learn' model** in TAFE. How might university work-integrated learning experience be reframed if **workplaces were more accepting of the need for ongoing employee development as part of their core business**, rather than insisting that students learn in the university environment before joining a workplace? Moreover, there are further opportunities for university education to complement and extend the curricula offered by industries like Google or Microsoft where training is aligned specifically to the needs and practices of the particular employer.

The prevailing justification for work-integrated learning tends to position university education as lacking real-world relevance, with students being sent to industry

placements to gain valuable professional skills. However, **we have discovered through our research at UTS' TD School that external partners learn from students on work placements and that work-integrated learning can be mutually beneficial.** In TD School experience, when work-integrated learning is co-created with industry, there is a lot more scope to learn from each other by doing practice-based work. Therefore, we believe these types of **transdisciplinary collaborations across the organisation boundaries need to be incentivised.** Whilst TD School partners report multiple tangible and longer-term gains from interactions with students and the university, further **schemes such as offering tax incentives to partners** who take on students and offer these types of mutually beneficial work-integrated learning experiences should be considered.

Based on our experience with work-integrated learning and curriculum co-creation with external partners at TD School, **paid internships and placements** can ensure accountability for both partners and students. Students tend to be more engaged if they are paid for their contribution, and partners take a more considered approach in helping students to deliver the outcomes they need, rather than leaving the students unsupervised or developing an exploitative expectation of 'free labour'.

Finally, based on the learnings from the pandemic, placements and **work-integrated learning should embrace distance and online education modes** more fully. These initiatives could take advantage the smart technologies and platforms, robotics, ML/AI algorithms and other devices and platforms that can support placement arrangements beyond the physical presence at the placement destination. For example, one should be able to do their practical legal training in international law via online placement in interstate/overseas firms.

Q15 What changes are needed to grow a culture of lifelong learning in Australia?

Q16 What practical barriers are inhibiting lifelong learning, and how can they be fixed?

Postgraduate education is currently framed as 'retraining' rather than lifelong learning, and this is measured through formal enrolment in university courses. We need to shift away from badging and stop seeing micro-credentials (and their potential to generate income for universities) as the one solution to lifelong learning. Higher learning should not be seen as a transactional, packaged, commercial engagement. It can genuinely be about developing qualities of being as well as skills and professional capabilities across a lifetime, and universities can play a role in offering this and our **Governments can fund lifelong learning to make it less about qualifications and other such transactional thinking and make it more about the growth of individuals, peers and cohorts, and thus more about our capability and resilience as a society.**

Alternative tried and tested models offering lifelong learning (other than micro-credentials and 'just in time training') already exist. For example, organisations often work in partnership with universities in research and teaching projects to develop new knowledge together, which frequently results in professional learning for partner organisations, albeit not in the form of accredited and credentialed learning. In these types of engagements across the porous university / industry boundaries, lifelong

learning is typically conducted through **engagement in research and learning combined**. Research and teaching should not be conceptualised as being entirely separate spheres and should be considered together, particularly in the postgraduate learning space. **Preparing students to continually learn for future competencies** is another example, particularly in rapidly emerging areas such as data science and artificial intelligence where new advances occur every year or so. These approaches provide learners with the expertise to update their own knowledge and skills through whatever means they find suitable, rather than imagining them as a permanent resource once gained through university education.

Lifelong learning can also be enhanced through courses that are structured to suit real-world situations and needs; and that can be **learnt in the field, at one's work environment or even where one lives**. This type of flexibility and closeness of learning to 'life' itself can be a strong catalyst in creating lifelong learners beyond university-based courses and industry 'refreshers'. This has the potential to make education not only authentic, relevant, interesting but also fun and cost-effective. The cost of education, distance, engagement and interest, other commitments, ageing, and progressing life are some of the barriers to life-long learning, so why not take the education to the learner? Challenges in accessing postgraduate education should also be considered in this review. **Workplace and employer perspective should play a key role in reviewing access and opportunity in postgraduate education**.

Q25 How should Australia leverage its research capacity overall and use it more effectively to develop new capabilities and solve wicked problems?

Whilst Australia is geographically isolated as a large Island, it harbours a plethora of skills and brilliance. Taking advantage of its existing research capacity, Australia should be willing to join national/global partnerships to further stimulate the development of these capabilities.

As we argue in our other responses, transdisciplinarity is particularly well-suited to tackling real-world wicked problems, however, existing research infrastructures and funding schemes privilege disciplinary depth and track record over opportunity to develop new ideas and yet unrealised potential for impact. Current research funding schemes systematically screen out transdisciplinary and interdisciplinary research due to the structure of disciplinary assessment panels such as in ARC funding schemes. Transdisciplinary and interdisciplinary research tends to be innovative at its heart and have real-world relevance, however, it does not have the support of the disciplinary hierarchies and structures due to the existing prestige structures. **Targeted schemes to fund and support transdisciplinary work on wicked problems should be more widely available**, with a specific focus on experimentation and innovation across the boundaries of sectors and organisations.

Moreover, **funding and support for initiatives that make the boundaries of the university more porous should be more accessible and strategically allocated**. This might involve helping universities to set up start-up companies and small-medium companies in specific industries or areas of interest and need, as well as aiding research by direct funding and helping to attract venture capital to promising initiatives.

Large and established industries should be encouraged to participate in transdisciplinary collaborations to bring expert academics and research disciplines together with external organisations to address the wicked problems of our time.

The **existing research capabilities should be marketed more widely**. Current collaborations across the organisation boundaries often rely on limited information and personal networks. Assembling a database of Australian research capacity that can be consulted for developing new and further capabilities by universities and external parties could be a starting point to make collaboration across sectors and organisations easier. Such a database would lead to new synergies by enabling multi-expertise to be more easily identified by those seeking to conduct transdisciplinary work.

Australia also faces several wicked problems that are representative of global problems, whether relating to integration of Indigenous people, climate change, polarisation in education systems, etc. Addressing these domestic challenges sets Australian researchers up collaborate with or even lead international teams on the global versions of the challenge.

Q26 How can Australia stimulate greater industry investment in research and more effective collaboration?

Australian R&D tax credit programs that incentivise company investment in research already exist. However, these schemes are limited to certain fields. The range of areas where these tax incentives are offered should be expanded to stimulate the development of knowledge across a wider variety of challenges. Specifically, **tax incentives should be used as a lever to encourage more transdisciplinary cross-sector collaboration, investment in research and knowledge co-creation**.

Moreover, whilst tax incentives are already linked to many grant applications that involve industry collaboration, industry partners are often not aware of these benefits (e.g. ARC Linkage grants). Wider and targeted dissemination of this information via appropriate channels should be considered. Further, cross-sector collaborations, particularly those in the more preliminary stages could be funded through schemes awarding smaller amounts that are easier to get than Linkage grants.

We work with a large range of external partner organisations in TD School's education and research endeavours. More often than not there is an assumption among industry, community and government partners that university expertise would be offered and available for free. To ensure the sustainability of valuable cross-sector initiatives, a radical reframe of industry partner expectations and existing collaboration patterns is needed. There is a need for more emphasis to stop universities offering profitable outcomes for free. Alternatively, industry and university collaborations could be funded directly through Government investment, recognising the in-kind contribution of expertise by the industry partners and removing the requirement for cash contribution by partners in ARC Linkage grants and CRCs, which might help overcome the external partner hesitation to participate in these types of collaboratively funded research.

Q27 How can we improve research training in Australia including improving pathways for researchers to gain experience and develop high-impact careers in government and industry?

The current approach to HDR training is unsustainable. HDR researchers are being underpaid for years, whilst they are completing their training, and the immense personal and financial costs are not considered nor addressed. It is increasingly difficult to attract talent to undertake HDR training given limited job opportunities in universities. Moreover, there is a perception that a PhD is of little benefit in non-academic workplaces. The rising cost of living in the recent years is making the HDR pathway even less appealing, often restricting talented researchers from staying in academia given how lucrative the salary in an equivalent industry can be.

To address this problem and attract talent, **HDR researchers should be fairly compensated as salaried researchers**. The industry PhD is a great prototype of what this might look like. Taking a transdisciplinary approach, these types of HDR training schemes spanning universities and external organisations could be extended, which would also encourage more engaged research and relevant outcomes. More incentives and targeted mentoring should be offered for researchers to collaborate with industry and government as they learn to negotiate outcomes and manage expectations for mutual benefit.

Moreover, Government and industry targeted research training grants and fellowships could be added to the portfolio of the types of grants offered by the Government. Such grants and research training should be open to both local and international applicants. **Exchange research training could also be a consideration, including sending Australian researchers to train at state-of-the-art facilities overseas and bringing valuable skills back to Australia.**

As with grant income and our response to Q5, the HDR supervision process is set up to benefit solely one school, and primarily one supervisor. Instead, the higher education sector and ARC need to rethink how an HDR completion can be recorded to benefit cross-faculty or even cross-university supervision. This would step away from a model designed for one supervisor to apprentice their HDR into an academic profession, and step towards a world where HDRs are prepared to access and integrate mentorship from diverse areas, for everyone's collective benefit.

However, why is the question asking only about 'government and industry'? Research capabilities are needed and could be applicable to a whole range of various organisations, institutes, not-for-profits and community organisations as well.

Q34 How should the contribution of higher education providers to community engagement be encouraged and promoted?

University and community partnerships can be successful if there are mutual benefits. University engagement with community is crucial as the latter paves the path to critical issues and community's present and future needs, ensuring the relevance of education and research outcomes delivered by the higher education providers.

In the City of Sydney, UTS is part of a Technology Precinct. However, being part of the Technology Precinct tends to be framed of in terms of the technological triumphalism at the expense of other disciplines and perspectives. This can result in an innovation culture that produces benefits for a few, leaving many stakeholders behind. The fact that there are around 120,000 students (from all disciplines – not just technology) in this precinct as well as other community players is rarely considered. Rather than being ‘pigeonholed’ into particular types of relationships, **universities and community organisations and groups should be encouraged to develop genuine connections with each other through community-oriented grants and resources.** By emphasising the connection to the place where universities are located through these types of engagements, universities can remain agile and attuned to the changing contexts and challenges that are relevant to their communities.

Ideally, there would be a national policy encouraging (or even mandating) this type of engagement. An alliance (or team/group/hub) should be set-up between various communities and Australian universities driving such engagement, sharing successes and lessons learnt, and aiding and monitoring the outcomes and impact of this type of work.

For university educators and researchers, new measures of impact extending the current academic KPIs should be conceptualised to ensure this type of community-engaged work is recognised and valued by higher education institutions.

We are grateful for the opportunity to participate in the consultation about the Australian Universities Accord. This review will set the foundations for a thriving university sector over the next few decades, and we believe, it is time to be bold in our vision for the Australian higher education.