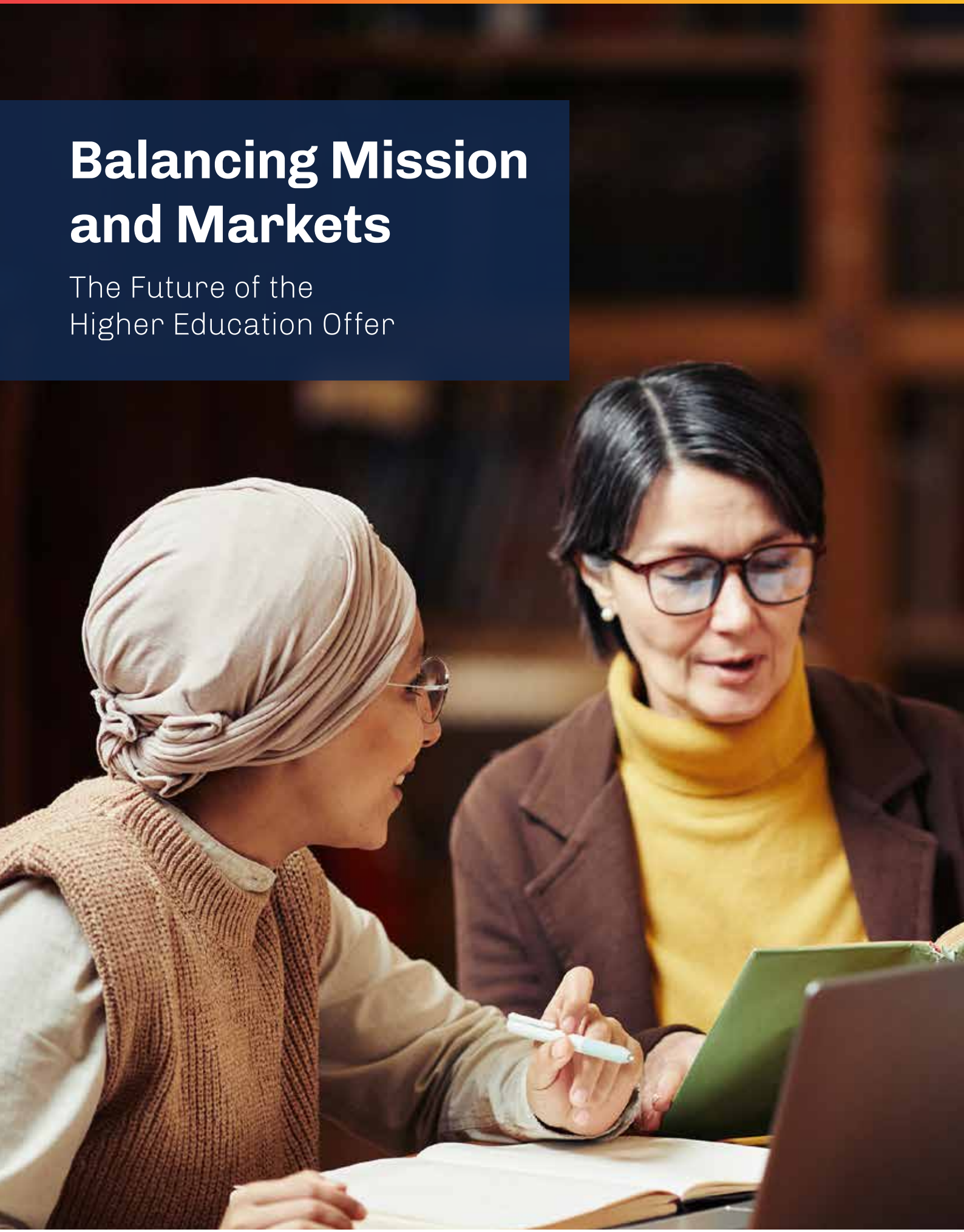
Balancing Mission and Markets

The Future of the Higher Education Offer



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A note on terminology

The focus of this report is on teaching and learning at universities. While we often use these terms in conjunction, it is important to recognise that they are distinct concepts which inform our findings as follows. Learning is a student-centric concept that involves the acquisition of knowledge, skills or understanding. Teaching is the act of a teacher imparting knowledge, skills or understanding to students.

These terms are closely related, but the relationship between them is not fixed. This is both because teaching is delivered across different modes, locations, contexts and pedagogies, and because learning increasingly occurs in a wider range of environments than the lecture theatre and classroom.

Across this report, we generally use learning when discussing a university education from the student's perspective, and teaching when considering education from an academic or institutional perspective.

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PLEASE NOTE: Nous Cubane was renamed in May 2025 and now operates as Nous Data Insights.

Contents

Introduction 4

CHAPTER 1
Great expectations and pressures from all directions 8

CHAPTER 2
Designing a distinct and sustainable portfolio 17

CHAPTER 3
A curriculum rooted in enduring values of the academy that delivers on contemporary needs 22

CHAPTER 4
Enhancing education delivery across multiple modes and diverse pedagogies 31

CHAPTER 5
Investing in the core enablers of high-quality teaching and learning 37

Concluding remarks 45

Introduction

For over a thousand years, universities have been the primary institution that societies have relied on to generate and impart knowledge. Over this time, they have displayed impressive resilience, having undergone substantial growth and change amid social, political, economic and technological upheavals.

For most of this history, only a small proportion of the population has had access to a university education. But in recent decades there has been significant growth in the number of students attending universities globally. For example, in Australia, the UK and Canada universities now educate around 40 per cent of the school leaver cohort. As a university education becomes more common – and as the challenges facing the world become increasingly global, complex and intractable – the value of a university education is as strong as ever.

Universities face a range of strategic challenges

Notwithstanding the popularity of a university education, universities face a range of challenges with maintaining and enhancing the quality of their educational offerings:

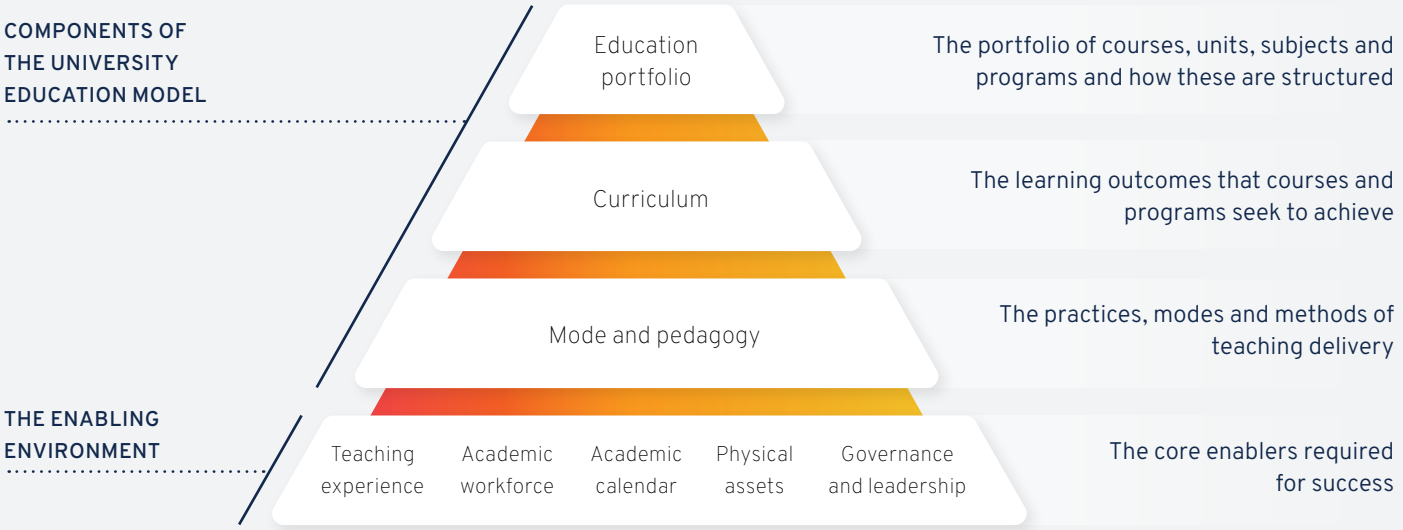
- The greater number of students participating in higher education naturally means that there are more diverse learning needs, capacities and preferences, which are not always well met by the current university education model.
- As costs grow faster than revenues, financial sustainability challenges force universities to make difficult decisions about what and how they teach.
- Academics face a seemingly ever-expanding range of pressures on their time, which can detract from high-quality teaching.
- In some quarters, the value and relevance of a university education is increasingly questioned.
- Rapid technological change, of which generative artificial intelligence (AI) is the most recent example, affects all facets of universities' educational offerings.
- A greater emphasis from all fronts on employability represents a significant departure from traditional conceptions of the purpose of a university education.

More generally, as universities educate a greater proportion of the population, they are subject to the increasing attention of governments, industries and communities. With more attention comes the weight of great expectations.

In this context, to maintain and enhance their educational offerings, universities must deftly balance mission and market, tradition and innovation, industry needs and academic pursuit. In short, universities must walk a tightrope – navigating the expectations of different stakeholders and carefully balancing the competing pressures to provide high-quality teaching and learning to students.

FIGURE 1

Conceptualisation of the university education model



About this study

To understand the challenges that universities face and the opportunities to enhance their educational offerings, Nous Group surveyed more than 200 university leaders and academics with teaching roles and over 1,200 university students in Australia, Canada and the United Kingdom. These surveys were supplemented by in-depth interviews with university leaders and sector experts in each country. The scope of this study is deliberately broad – covering what universities teach, how programs and courses are structured, what learning outcomes they seek to achieve, the practices and modes of education delivery, and the organisational enablers of teaching and learning excellence. This reflects the range of levers that universities have at their disposal to influence their educational offer (see Figure 1). Notwithstanding this broad scope, the study focusses solely on teaching and learning; it does not focus on research, civic engagement or other functions of universities.

This report aims to help university leaders and the higher education sector to consider how the educational offerings of universities can best be aligned with and responsive to new and emerging trends. To this end, we focus partly on challenges, but primarily on practical solutions. Across our engagement, however, we found that the immediate priorities for university leaders are being considered against the backdrop of more fundamental questions. For example:

- **What is the fundamental purpose and value of a university education?** As universities face increasing pressures to meet the needs of industry by providing graduates with the capabilities required to succeed in a rapidly changing world of work, many university leaders raise concerns that the more fundamental ideals of a university education – for example, to cultivate well-rounded, autonomous and civically engaged individuals capable of critical thinking – might be demoted or even forgotten.
- **To what extent should decisions about what to teach at universities be driven by the market?** While universities' educational offerings need to be responsive to the demands of students, industry and government, many leaders warned that excessively market-oriented approaches to what universities should teach risk undermining the social and cultural benefits of a university education.
- **What institutional form should different universities take to deliver on their purpose?** Traditionally most universities in the surveyed jurisdictions teach across a wide range of disciplines; however, some university leaders and academics engaged in this study suggested that more specialised educational offers (and institutions) may – and arguably should – become more prevalent across the sector.
- **What rate of change should universities embrace in their educational offerings?** Across this study, university leaders and academics expressed different perspectives about whether evolutionary or revolutionary changes to educational offerings were desirable and necessary.
- **How should universities work within the broader system to improve educational outcomes?** While universities are part of a broader system of education and training, they understandably value their independence and have varying views about how and to what extent they should work with other parts of the system, from industry to government and vocational and further education providers.

Key themes and findings

1

Great expectations and pressures from all directions

Universities in Australia, Canada and the UK face a range of common strategic challenges.

External pressures include larger and more diverse student cohorts with different learning needs and preferences; growing expectations to produce job-fit graduates; rapid technological changes that affect all aspects of education delivery; and signs of growing scepticism about the value and relevance of a university education.

Internally, many universities are grappling with financial sustainability challenges that force difficult decisions about what and how to teach. Operational costs in each jurisdiction have increased substantially over the past five years, and university leaders surveyed in this study consistently rated financial sustainability as the top trend that will influence how universities deliver education over the next 5-10 years. In addition, pressures on the academic teaching workforce can detract from teaching excellence.

2

Designing a distinct and sustainable portfolio

Choosing what courses or programs to offer requires navigating competing priorities and the varied demands of governments, industry, students and academics. A more disciplined approach is required for universities to deliver an education portfolio that honours their academic and social mission and demonstrates the fundamental value of a university education, all the while ensuring financial sustainability.

To develop and manage an education portfolio that meets these goals, universities can build robust evidence bases to make informed decisions about course or program development. They can be more responsive in developing educational 'products' and simplify their course structures to reduce inefficiencies and improve the student experience. These remain challenges for many universities: 60 per cent of university leaders surveyed rated their access to data to develop new educational offerings as fair or poor; 45 per cent were dissatisfied with their university's processes to refine the structure of its education portfolio.

Over the longer term universities may consider developing more specialised educational offers that play to their strengths, though this represents a significant departure from the comprehensive offer common in Australia, Canada and the UK. Almost half of university leaders surveyed expect greater specialisation in educational offerings across the sector in the next 5-10 years.

3

A curriculum rooted in enduring values of the academy that delivers on contemporary needs

Universities' curriculums are increasingly expected to be all things for all people, simultaneously cultivating autonomous and critically minded individuals while imparting discipline-specific and technical skills. While our survey of university students found a general preference for curriculums to focus on technical skills, almost half preferred a balance between technical and human skills.

Curriculums should consciously articulate the balance of technical and human skills for different disciplines, focussing on those skills that have the greatest value for students. Creating tangible connections to real world problems – for example through industry partnerships, experiential learning and cross-disciplinary studies – can provide meaningful learning experiences and better equip students for life outside university. Two-thirds of university leaders surveyed reported that extending work-integrated learning opportunities across all disciplines is a significant priority for them. A more flexible curriculum helps to meet students' diverse needs and preferences and to support their lifelong learning. But too much flexibility can be overwhelming for students and can undermine social contexts that facilitate learning. For example, our survey of university students found that, across all disciplines, students preferred to be able to choose a major from a smaller number of options (usually 1-3). The challenge is to provide just enough choice and flexibility.

4

Enhancing education delivery across multiple modes and diverse pedagogies

Providing high quality teaching and learning for increasingly diverse student bodies across multiple modes of delivery is no mean feat. New technologies are a double-edged sword; while they can deliver flexibility, accessibility and differentiation, they can also promote an impersonal and transactional approach to education. The continued importance of in-person delivery is shown in our survey of university students, which found that a majority of students prefer in-person delivery for most types of learning.

Delivering a meaningful and rewarding experience for online, hybrid and blended learning requires considerable time, effort and attention, informed by pedagogy. Harnessing AI to improve teaching and learning is both an immediate and long-term priority for universities. Over 80 per cent of university leader surveyed agreed or strongly agreed that technological advancements will fundamentally alter how a university education is delivered over the next 5-10 years. To date, many universities have focused on the risks of AI, while the potential of these tools to enhance teaching and learning remains underexplored.

Universities need to create and cultivate inclusive learning environments and approaches to improve access, equity and outcomes, especially for traditionally underrepresented student cohorts. This requires a whole-of-university approach that considers all aspects of student experience.

5

Investing in the core enablers of high-quality teaching and learning

Many mechanisms that are put in place to support education detract from teaching quality by creating additional work for the academic workforce. Getting the basics right by improving systems, processes, policies, supports and assets can help to significantly enhance universities' educational offers. Over two-thirds of academic teachers surveyed in this study reported that administrative tasks such as timetabling, scheduling and student requests present a moderate or significant barrier to providing high quality teaching.

Universities can support teaching excellence by building better academic capability and releasing academic capacity for teaching, including through more flexible academic workload models that provide incentives and recognition for teaching excellence. Designing and managing physical assets with modern teaching and learning front of mind can ensure that the built environment facilitates meaningful learning experiences and outcomes for students. Rethinking the traditional academic calendar can better meet students' diverse needs. Effective governance, leadership and ways of working can enhance the educational offer by harnessing the expertise of both academic and professional staff.

1

Great expectations and pressures from all directions

Universities across Australia, the UK and Canada face many challenges to providing high-quality teaching and learning to their students. While there are country-specific issues, the underlying trends facing universities are global in nature. They arise from a confluence of societal, economic, demographic and technological trends that collectively create an environment in which universities cannot afford to stand still. This chapter provides an overview of key strategic challenges.

Major strategic challenges affecting universities

1.1
More students, more diverse learning needs and preferences

1.2
Cost growth outpacing revenue growth

1.3
Increasing expectations to produce job-fit graduates

1.4
Unrelenting technological change spearheaded by AI

1.5
Academic workforce stress

1.6
The values and relevance of universities under question

1.1
More students, more diverse learning needs and preferences

Across the globe, enrolments at universities are increasing at a faster rate than the world's population.[1] While a university education was once the exclusive domain of the socioeconomic and intellectual elite, over the last 50 years there has been a global trend towards greater participation in higher education systems – what Simon Marginson (2016: 415–416) describes as a shift from "mostly a small elite sector" to "mass higher education [as] the global norm."[2] For example, the proportion of the world's school leaver aged cohort enrolled in higher education increased from less than 10 per cent in 1971 to just under one-third in 2013.[3]

University participation is especially high in Australia, the UK and Canada, as shown below.

In Australia, the 2021 census showed a **41.6 PER CENT** participation rate at universities at age 19 years, more than double the rate in 1989.[4]

In the UK, the higher education participation rate for 20-year-olds has increased from **33.6 PER CENT** in 2016 to **45.9 PER CENT** in 2021.[5]

In Canada, participation in college and university studies for 18- to 24-year-olds was **44 PER CENT** in 2018–19 – a 29 per cent increase from 2000–01 that was driven by increased popularity of universities.[6]

The trend towards higher participation at universities is likely to continue. For example:

- The Australian Universities Accord proposes ambitious targets for increasing university participation. The Australian Government's final report proposed increasing the proportion of university educated Australian aged 25–34 from 45 per cent currently to 55 per cent by 2050. This requires more than doubling the number of Commonwealth-supported students in universities.[7]
- Promoting greater equity and diversity in higher education is a priority for many Canadian provinces. 'Fostering an inclusive post-secondary sector where students from diverse backgrounds can enrol and succeed' is a strategic priority for Saskatchewan's Ministry of Advanced Education.[8] 'Increasing the number of individuals accessing and completing post-secondary training' is cited as a key responsibility of the Manitoba Ministry of Advanced Education and Training.[9]
- Improving access and participation and equality of opportunity is a core strategic tenet of the UK's Office for Students strategy for 2022-2025.[10]

Greater participation means that groups that have historically been underrepresented at higher education institutions are enrolling in higher numbers than ever before, as shown in the callout box below.

In UK universities[11] , over five years to 2022 there was a:

20 PER CENT increase in students from low-participation neighbourhoods (POLAR4)

43 PER CENT increase in students with a disability

26 PER CENT increase in students from low socio-economic areas

In Australian universities[12] , over five years to 2022 there was a:

17 PER CENT increase in the number of Indigenous Australian undergraduate students

67 PER CENT increase in students with a disability

In Canadian universities[13] , over six years* to 2022 there was a:

4 PERCENTAGE POINT increase in the proportion of first-year students with visible minority status (from 40 to 44 per cent).

9 PERCENTAGE POINT increase in the proportion of first-year university students reporting a disability (from 22 to 31 per cent)

This trend, while undoubtedly positive, raises challenges for universities and the higher education sector. A larger and more diverse student population inevitably means more heterogenous learning needs, styles and preferences. Many students also come from socio-cultural environments where a university education is not the norm, creating risk of tensions and isolation from within their own communities. Moreover, as more students seek to balance studies with other life commitments – for example, raising children or managing work commitments – the demand for flexibility and differentiated offers is increasing.

However, the traditional education model – characterised by autonomous and self-directed learning environments typically conducted over multiple years – is not always set up to help historically underrepresented student cohorts succeed.[14] Studies have found that low social-economic status (SES), working or culturally and linguistically diverse students tend to have lower progression rates than students without these characteristics.[15] Universities are catalysts for social and economic mobility, but for this to succeed for historically underrepresented groups a different mix of educational supports and services is required to ensure access and success in many aspects of teaching and learning.

1.2
Cost growth outpacing revenue growth

Universities are grappling with rising operational and capital costs. Between 2016 and 2021, for example, the country-average, inflation-adjusted compound annual growth rate for physical asset and staff expenses was 4.25 per cent for Australian universities, 7.75 per cent for Canadian universities and 18.24 per cent for UK universities.[19] In most Australian and Canadian universities the primary driver of this growth was asset expenses. In UK universities the primary driver was professional staff costs and, to a lesser extent, academic staff costs, including sharp rises in employer pension contributions.[20]

Student supports are also a significant cost driver as universities begin to serve increasingly diverse cohorts. For example, one Australian study found that the average annual cost to serve a student from low SES background at the undergraduate level is about six times higher than for a student from a medium or high SES background.[21] Moreover, in the context of global inflationary pressures, Australia, Canada and the UK all face stagnant or declining real revenues from domestic tuition fees (see Figure 2 overleaf).

* Note there is limited country-wide data for university student demographics in Canada. These figures are derived from data collected by the Canadian Undergraduate Survey Consortium. This body conducts annual surveys, alternating between first-year, middle-year and final-year students. We have selected a 6-year time horizon to compare the same level of student (first-year) over time.

While it is common to talk of the 'traditional education model' at universities, importantly the length of a typical university degree differs across jurisdictions. For example:

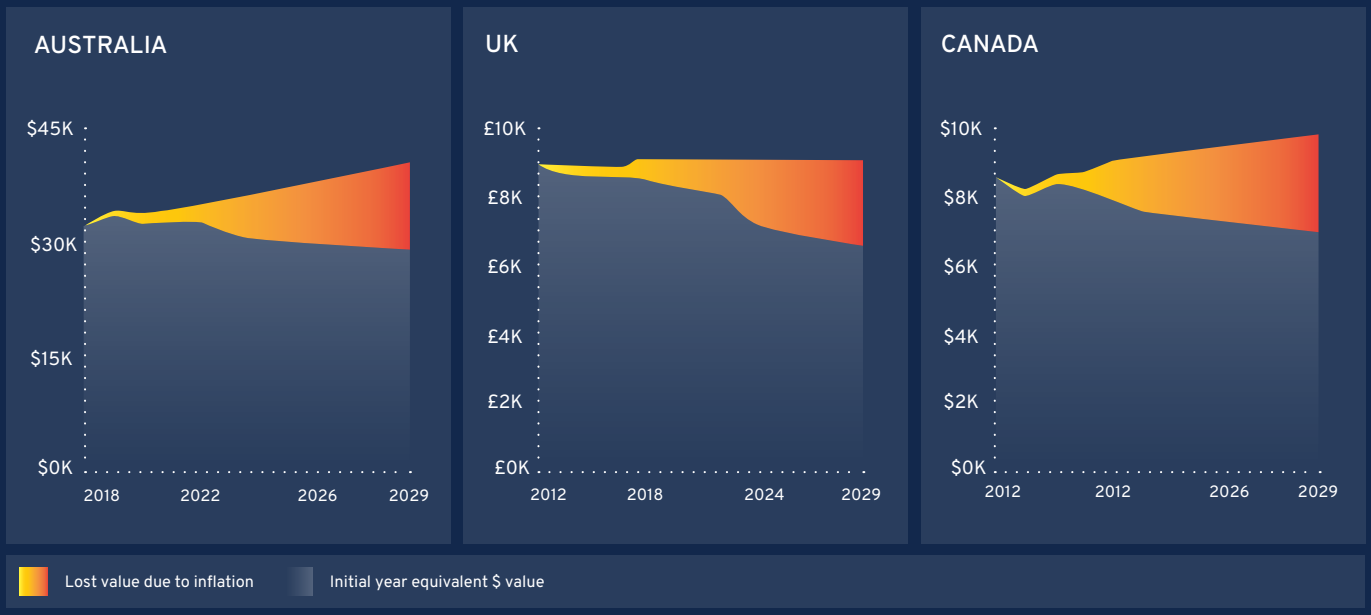
IN AUSTRALIA, undergraduate degrees are typically three years, with some students electing to study an additional honours year. Students may then proceed to study a master's degree, by coursework or research, which is typically two years in length.[16]

IN THE UK, undergraduate degrees in England, Wales and Northern Ireland are typically three years, while in Scotland they are four years. Postgraduate degrees in the UK typically last for one year. [17]

IN CANADA, while there are differences across provinces, undergraduate degrees typically last three to four years, and postgraduate degrees one to two years, although postgraduate degrees are largely conducted by research.[18]

FIGURE 2

Average annual full-time undergraduate domestic tuition fees, nominal and real*



*2012 to 2023 recorded CPI; 2024 OECD projected CPI; 2025 to 2029 estimate at 2.75%, Fees expressed in terms of local currency (Australian dollars, pounds sterling, and Canadian dollars respectively)

In addition, universities in all three countries are reliant on international tuition fees and government funding as critical sources of revenue. The sustainability of these revenue streams is subject to social, political and geopolitical trends. For example, each country has recently announced tightening of international student visas or the introduction of visa caps, which creates financial risk for many universities (as noted on the right).

These pressures were reflected in our university leaders survey (shown at Figure 4 on page 13) in which financial sustainability challenges was rated as the top trend that will influence how universities deliver education over the next five to ten years. These concerns were especially acute among leaders in the UK – nearly three quarters (72 per cent) of respondents ranked financial sustainability challenges as the most significant trend, compared with only one-third (31 per cent) of their Australian counterparts.

Financial pressures make it difficult for many universities to maintain, let alone evolve, their educational offerings. In the context of these financial pressures, many universities may need to make difficult decisions about where costs can be reduced and strategic decisions about what to offer, to ensure a mission-centred but sustainable educational offering.

Increasing reliance on international students ...

International tuition fees made up an average of **23 PER CENT** of Australian universities' operating revenue in 2019 – a four-fold absolute increase and a nine percentage point increase since 2008.

An average of **20 PER CENT** of the revenue of UK universities came from international students in 2021–22. For some universities over one-third of revenue came from international tuition fees. In the five years to 2021–22, 30 UK universities more than doubled the number of overseas students.[22]

In Ontario's universities, between 2017 and 2021 international students increased from **13 TO 17 PER CENT** of enrolments.[23] In the same period, tuition fees attributed to international students increased from 29 to 45 per cent of total revenue from tuition fees.[24]

... could prove to be an Achilles' heel for universities.

The **AUSTRALIAN GOVERNMENT** in the May 2024 budget introduced international student limits to control immigration, requiring universities to construct additional accommodation if they wish to enrol international students above their allocated enrolments.[25]

The **UK GOVERNMENT** has introduced measures to cut net immigration, including removing the dependants visa for students coming to the UK.[26] Four-fifths of UK universities face deficit risk if international student numbers contract by 20 per cent.[27]

The **CANADIAN GOVERNMENT** has announced a two-year cap on new undergraduate study permits. This will cause a 35 per cent decrease in the number of study permits issued in 2024.[28]

1.3
Increasing expectations to produce job-fit graduates

Universities face pressures – from the governments that fund them, the students that attend them, and industry that employs their graduates – to enhance students' employability and job-readiness. For example, in the survey of university students undertaken in this study, students cited employability as the top factor in choosing what and where to study (see Figure 3). This response was the same across all countries, disciplines and age groups, and for undergraduate and postgraduate students alike.

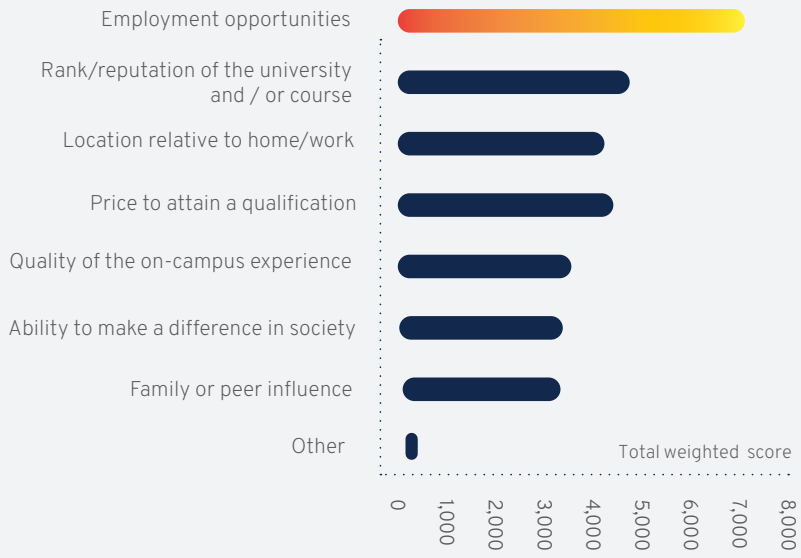
While these pressures are not new, many university leaders engaged in this study noted that a focus on employability from governments and students has substantially increased in recent years.

FIGURE 3
FACTORS INFLUENCING STUDENT CHOICE IN WHERE AND WHAT TO STUDY

How important were the following factors in choosing what and where to study?

UNIVERSITY STUDENT SURVEY

Employment opportunities was rated as the most important factor for students in choosing what and where to study across all surveyed jurisdictions (Australia, Canada, UK), all age groups, undergraduates and graduates, and all disciplines



Increasing expectations on universities to orient their educational offerings towards employability raise both strategic questions and more fundamental questions about purpose.

From a strategic perspective, the challenge lies in preparing students for a rapidly changing world of work in which the needs of industry often outpace the development of educational offerings to service those needs. Ensuring that graduates are 'job-fit' is especially difficult in industries with rapidly evolving skills needs. However, even in industries that are not rapidly evolving, the rate of skill change varies considerably between occupations (as discussed in Chapter 3). More generally, around the world workers move between different occupations and industries at faster rates.[29] A single stable career across a person's lifetime is increasingly anachronistic. In this context,

> There is a fundamental difference between cultural formation through bodies of knowledge, compared with the tasks and nature of work. The transition is rocky.
>
> **Global higher education expert interviewed in this study**

there are fundamental constraints on how well universities can prepare students for 'day one job-readiness'. Finally, as noted in Nous Group's University as Connector Report (published in 2023), for many occupational groups there are often considerable differences in employers' demand for skills and students' interest in skill development.[30]

At a more fundamental level, many university leaders and academics understandably resist the idea that the primary purpose of a university education is to 'optimise' for employability. Producing graduates that can think critically, autonomously and ethically about themselves and the world – which has arguably been the traditional purpose of a university degree for centuries – does not necessarily align with the day-to-day needs of labour markets. While the connection between study and work is clear in some cases – especially for more vocationally-oriented institutions and qualifications – for many universities and programs pressures to ensure job-readiness represents a fundamental change in the purpose of a university education.

> Privileging employability neglects the potential of the curriculum as a space in which thought, critique and imagination might be nurtured.
>
> **Ronald Barnett, The Philosophy of Higher Education (1st edition), 2020: 128**

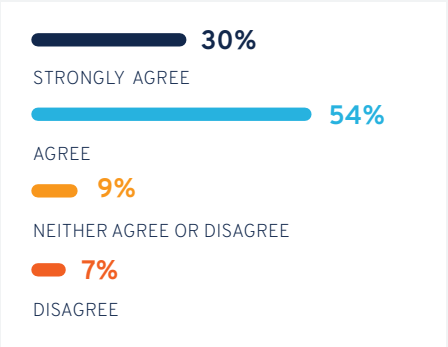
1.4 Unrelenting technological change spearheaded by AI

Many universities recognise the need to adopt a culture and practice of continuous innovation to ensure that educational offerings, teaching methods and learning outcomes are informed by technological developments and adequately prepare students for a rapidly evolving world. For example, in our university leaders survey, over 80 per cent of respondents agreed or strongly agreed that technological advancements will fundamentally alter how a university education (including assessments) is delivered over the next five to ten years (see Figure 4).

Across our study, we consistently heard from university leaders and academics with teaching roles that artificial intelligence – in particular generative AI – is a reality that universities' educational offerings will need to be responsive to. In our survey of university leaders, use of AI was ranked second only to financial sustainability challenges as the top trend that will influence how universities deliver education over the next five to ten years (see Figure 4). This is unsurprising, as these tools are rapidly developing and quickly performing tasks that, until recently, were thought to be the exclusive purview of the human mind.

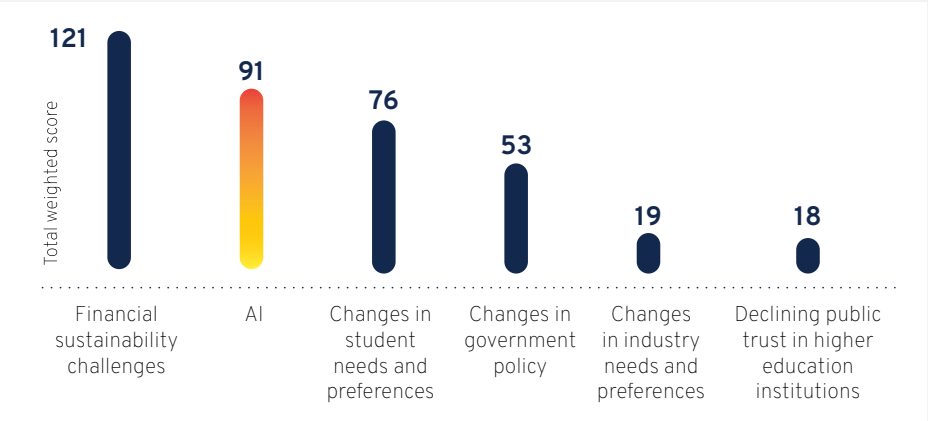
FIGURE 4
UNIVERSITY LEADERS EXPECT TECHNOLOGY TO DRIVE SIGNIFICANT CHANGES TO TEACHING AND LEARNING

To what extent do you agree with the following statement? Technological advancements will fundamentally alter how university education (including assessment) is delivered over the next 5-10 years.



Which of these trends will most influence how universities deliver education over the next 5-10 years?

UNIVERSITY LEADER SURVEY



However, AI tools have yet to see significant uptake in universities; for example, only three per cent of university leaders surveyed reported that AI tools are used as part of learning and teaching to a large extent. By contrast, 28 per cent of university students reported using AI tools like ChatGPT in their own time very frequently or frequently to help with university learning, while an additional 28 per cent of students used these tools occasionally.

While there are valid concerns about the use of AI tools, particularly around academic integrity, the potential of these tools to transform student learning – for example, improving accessibility, personalisation and efficiency – is immense. University leaders engaged across this study consistently cited the importance of universities taking a strategic and forward-looking approach to these technologies, harnessing their promise while navigating their pitfalls, as an important strategic challenge in the short and medium term. Our survey of academics with teaching responsibilities found that many respondents wanted more support and guidance from universities about how to best use these tools to best support teaching and learning.

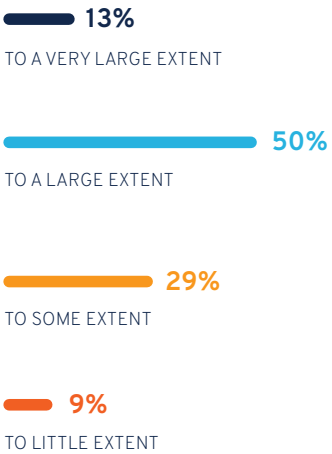
> I used to teach in a university where students were very much left to get on with it; at my current institution teachers are expected to intervene more directly and offer more encouragement.
>
> **Survey respondent**

1.5 Academic workforce stress

The prime responsibility for teaching excellence at universities largely falls on the academic workforce. But academics with teaching responsibilities have to navigate what seems like an increasing number of obstacles to deliver high quality teaching. Our survey of university academics with teaching responsibilities found that 54 per cent reported that teaching had become somewhat harder or much harder since they started teaching at a university, while only one-fifth reported that it had become easier. While a majority (61 per cent) of academics reported feeling supported by their university to provide high-quality teaching to students to a very large extent or to a large extent, a significant minority (37 per cent) reported feeling supported only to some extent or to little extent (see Figure 5).

FIGURE 5
TEACHING ACADEMICS SURVEY RESPONSES ON SUPPORT FOR, AND BARRIERS TO, TEACHING EXCELLENCE

To what extent are you supported by your university to deliver high quality teaching?



To what extent do the following factors present a barrier for you to provide high quality teaching to students?

UNIVERSITY ACADEMIC SURVEY

78% Limited time allocation for teaching commitments	**73%** Limited pay for teaching	**67%** Handling student requests (e.g. extensions, special considerations)	**66%** Student sensitivities about talking openly on difficult topics
65% Pressures from management and other about what or how to teach	**64%** Physical infrastructure technology equipment and other resources	**63%** Limited access to industry partners	**62%** Balancing teaching and research commitments

(percentages indicate proportion of respondents that selected significant or moderate barrier)

Across our surveys and interviews the primary issues we heard facing academics are:

- **Student heterogeneity** – Increasing complexity of student needs has not been met with commensurate increases in resources or support to meet those needs.
- **Administrative work** – Teaching excellence can be undermined or compromised by the weight of administrative work that is associated with teaching, and which often falls on academics. About two-thirds of survey respondents reported that 'timetabling and/or scheduling classes' (60 per cent) and 'handling student requests' (67 per cent) were a moderate or significant barrier to providing high quality teaching.
- **Work casualisation** – The increasing casualisation of academic roles, especially in Australia and the UK, often results in teachers seeking to deliver for their students while grappling with job insecurity.
- **Access to tools and capabilities** – It is difficult for many academics to access the tools and capabilities for teaching excellence, particularly adapting curriculums for online delivery and using innovative pedagogical approaches that cater to different learning needs and preferences.
- **Pressures to prioritise research** – For academics with both teaching and research obligations, cultural and financial pressures often prioritise research at the expense of teaching. For example, in our survey of academics with teaching responsibilities, 62 per cent of respondents reported that 'balancing teaching and research commitments' was a moderate or significant barrier to high-quality teaching.
- **Requirement to be 'always on standby'** – A shift to online and remote learning can create stress by eroding or blurring the boundaries between work and home and changing how academic work is experienced. Discussions with academics in this study corroborated recent research showing that the requirement for academics to 'always be on' can impact academic work and wellbeing.[31]

In this context, the core challenge for universities is to give academics with teaching roles the support and space they need to deliver high-quality teaching to students.

1.6 The values and relevance of universities under question

The rise of polarisation, populism, social fragmentation and identitarian political movements has contributed to declining trust in institutions around the world that have traditionally been accepted sources of authority. While education institutions remain, in general, highly trusted across the world (especially compared with other industry sectors),[32] universities are increasingly not immune from – and must grapple with – these broader social trends. These issues are most evident in the United States, where the conflict between the traditional values of academic enquiry and free speech (on the one hand) and illiberalism on both sides of the political spectrum (on the other hand) has been most stark.

However, these trends are increasingly global in nature. For example, there are concerning signs of modest declines in trust in universities in Australia.[33] Indeed, throughout the duration of this study, universities across the world have been a hotbed of protest and activism in relation to the conflict in Gaza. Protests have called on the institutions and government to take a particular stance. Whilst protests of this nature have occurred historically, the pervasive influence of social media arguably fuels the divisions and places universities and other institutions at the centre.

> I feel it's moving more away from a teacher into a babysitter. Students seem to be more needy now than ever.
>
> **Survey respondent**

> There needs to be a significant reduction in casual contracts, as this promotes instability for both the staff and students and impacts quality of teaching.
>
> **Survey respondent**

> [We are] expected to more directly guide students who see themselves more as consumers due to dramatically increased fees.
>
> **Survey respondent**

> As educators, we find ourselves in the midst of these polarising debates, often without the full arsenal of tools and strategies we need to manage these dynamics effectively.
>
> **University academic leader**

> Universities are being weakened rather than strengthened given major trends like nativism, populism and climate change that are facing societies today.
>
> **Professor and global higher education expert**

These trends are beginning to seep into classrooms, where teachers can find themselves unprepared to manage debates about sensitive or controversial issues. For example, in our survey of academics with teaching responsibilities, 66 per cent of respondents identified "student sensitivities about talking openly on difficult topics" as a moderate or significant barrier to providing high-quality teaching. These concerns were especially pertinent in Australia and Canada; it was a less significant issue for respondents in the UK.

While students appear less concerned about this than academics, a non-trivial minority (15 per cent) of respondents in our student survey disagreed or strongly disagreed with the statement "I feel comfortable sharing my opinions on controversial or difficult subjects in university classrooms." This suggests that university classrooms and other learning settings may become a microcosm for broader social conflicts.

Beyond the spectre of social mistrust, the value of a university qualification is also under scrutiny. Some influential critical voices argue that a university education has become valuable primarily as a signalling device, or as a positional good, rather than as a form of education that genuinely enhances intellectual capabilities and personal development.[34] For example, recent modest declines in domestic undergraduate enrolments in Australia – among both school leavers and mature-aged students – have been cited by some as a sign of declining faith in the value of a university education.[35] It has also become increasingly common for companies to relax or eliminate degree requirements from job advertisements, partly to increase workplace diversity, but also arguably because a university education is not regarded as essential to doing a good job.[36] In some sectors, there has been considerable growth in non-traditional forms of education that are competing with universities – the rise of "Tech Bootcamps" is one notable example.[37]

Despite these trends, universities remain pivotal in their role as the bastions of knowledge and vital in addressing complex global issues. A university education is still generally regarded as a valuable good.

WALKING THE TIGHTROPE WITH A SURE FOOT

Notwithstanding the strategic challenges discussed in this chapter, universities are resilient institutions. In the next four chapters, we discuss the solutions universities use, and can increasingly adopt, to create and refine their educational offerings. These chapters also provide insight into the relative importance university leaders and students place on the challenges and opportunities across the education model.

We discuss how universities can:

Design a distinct and sustainable portfolio — CHAPTER 2 ›

A curriculum rooted in enduring values of the academy that delivers on contemporary needs — CHAPTER 3 ›

Enhance education delivery across multiple modes and diverse pedagogies — CHAPTER 4 ›

Invest in the core enablers of high-quality teaching and learning — CHAPTER 5 ›

2

Designing a distinct and sustainable portfolio

Choosing what courses or programs to offer at a university – and how to manage the education portfolio over time – requires navigating competing priorities and the varied demands of governments, industry, students and academics. Across Australia, Canada and the UK, we see policy shifts that suggest governments want a more managed higher education sector, aligned more closely to national priorities.

In light of this and other pressures, a key challenge facing many universities is to deliver a distinct education portfolio that aligns with their academic mission and social context while being financially sustainable over the long-term. An excessive orientation to market forces can risk compromising a university's academic mission, because there are many valuable forms of knowledge that are not necessarily commercially viable. In the words of one university leader interviewed for this study, "We aren't a factory. We are an academy." On the other hand, too little attention to market needs and financial margins also creates risks for the university. In the words of another university leader interviewed in this study, "Universities need to understand and play to their strengths – too many sell what they make and not enough make what they sell."

Opinions differ about the relative importance of market and mission and the relationship between them. The appropriate balance for universities will depend on a range of factors, including funding arrangements and place-based considerations.

In this chapter, we explore how universities can design a distinct and sustainable portfolio through:

2.1

Evidence-led portfolio design: Aligning the portfolio to what students and industry needs, and what the university is well-placed to deliver, helps to achieve a sustainable approach to portfolio design.

2.2

Responsive development of courses and programs: Increasingly universities need to be able to develop and deploy educational offerings quickly, while maintaining rigour and quality.

2.3

Simplified course or program structures: Many course architectures are needlessly complex. Greater simplicity and modularisation can reduce inefficiencies and increase responsiveness.

2.4

Greater institutional specialisation: Most universities across Australia, the UK and Canada have comprehensive educational offerings. However, developing more focussed and specialised educational offerings may be a strategic decision for some universities in the longer-term.

2.1 Evidence-led portfolio design

Regardless of how universities weigh competing drivers in determining what courses or programs to offer, it is important to have a robust evidence base to make better decisions about the education portfolio.

The last decade has seen notable changes in students' study choices by disciplines. For example, in Australia, the UK and Canada significantly more students are studying Information Technology and, to a lesser extent, Health.[38] In this context, universities can benefit from building their evidence base to understand and anticipate changes in demand for the various disciplines so they adjust their education portfolios accordingly.

University leaders surveyed in this study reported that they use a range of different data sets to inform design and development of new educational offerings – most commonly competitor data and labour market data, but also historical student demand, student feedback, industry strengths and, to a lesser extent, historical research strengths. Few are actively using prospective student search demand only. Only 41 per cent of respondents rated their access to data and insights to design and develop new educational offerings as good or very good. Forty per cent rated it as fair and 19 per cent as poor or very poor.

Common themes that emerged in the survey were:

- lack of a complete, integrated view of different data sets to make informed decisions
- difficulties turning insights into action because of the lack of a structured, institution-wide governance and approach to using data analysis to inform portfolio design decisions
- insufficient granularity of data sets on industry skills needs and shifts in demand
- difficulty of anticipating future demands, especially where these may not be well understood or articulated by students and industry, and
- cultural barriers associated with sharing insights from data in ways that resonate with academic and professional staff, and having to build trust in data across universities, including how it is used to inform portfolio development and management decisions.

In this context, developing high-quality, granular and integrated data sets to inform decision making – and embedding these within a university's broader strategic decisions – can help to improve the evidence base to make decisions about portfolio design and development, without compromising on academic mission.

Data insights and market analysis to inform strategic decision making

NousCubane's market intelligence platform has been co-designed with education providers to support strategic decision-making in higher education. It can link job advertisement data, along with myriad other data sets, to remove the challenge of data linkages, simplify and accelerate analytics, and move to actionable insights faster. We can partner with you to assess where and how to address industry and student demand gaps, or to enable your own team to leverage the platform to generate insights.

For example, Nous worked with RMIT University (Australia) to develop a comprehensive dashboard to present complex analysis of national and state labour market and skills trends to improve decision-making in developing courses and training products. This tool has enabled RMIT University to make decisions with greater information on current and emerging workforce needs, helping the university to continue to deliver strong student employment outcomes.[39]

2.2
Responsive development of courses and programs

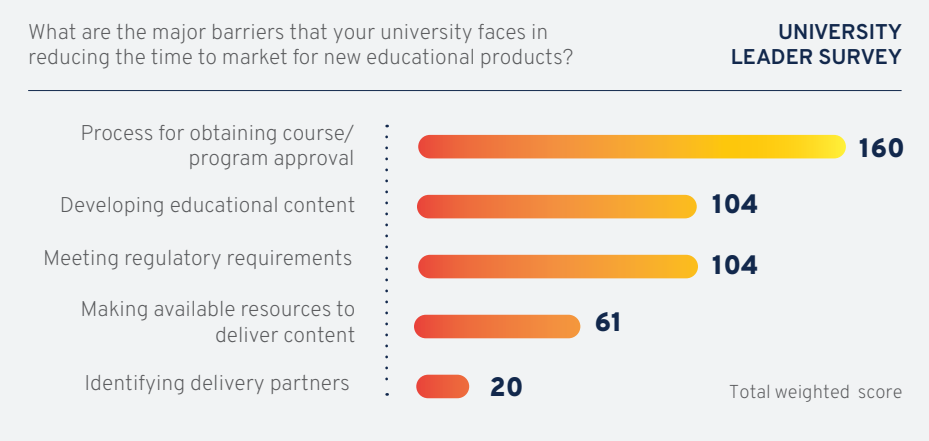
The development of new courses or programs and updating existing content in a timely manner is important for universities to ensure that their educational offerings are responsive to changes in student needs, academic trends and industry demands.

Often new course or program development is time consuming; for instance, more than half (54 per cent) of university leaders surveyed reported that it took an average of one to two years or more than two years to develop and launch a new course or program. For programs that are geared towards industries with rapidly evolving skill needs, there is a risk that educational content quickly becomes obsolete.

University leaders surveyed consistently cited the process for obtaining course/program approval as the most significant barrier (see Figure 6). This suggests that simplifying and streamlining processes and procedures for approval could support more responsive development of educational offerings. A key challenge, however, lies in being able to develop new educational offerings quickly without compromising on rigour and quality.

FIGURE 6

MAJOR BARRIERS IN REDUCING THE 'TIME TO MARKET' FOR NEW EDUCATIONAL OFFERINGS



Aside from improving internal processes, universities can be more responsive in developing or refining educational offerings through a range of other strategies. For example:

- Partnering with industry to co-develop (with skills data) products at pace to meet identified skill gaps provides a way for universities to increase responsiveness without incurring all of the risk and cost.
- Developing 'short-form content' to deliver at scale (such as micro-credentials or an individual module or unit) rather than defaulting to developing a new course or program, can improve responsive content development. In our survey of university students, 71 per cent of respondents reported that they would be interested in undertaking short-form content as part of their qualification.*

* This finding aligns with a recent global survey by Coursera which found that 90 per cent of students and recent graduates reported that if universities included industry-based micro-credentials or basic professional certificates in an academic course, it would make them more likely to enrol.

Examples of good practice

Rapid course development with industry

Flinders University (Australia), in partnership with Port Adelaide Football Club, launched the Diploma in Sports Management within a five-week timeline from idea to market. This partnership allows students to gain hands-on experience in sports management, leveraging over 100 hours of practical training with the club and a minimum of two employment opportunities guaranteed with the club every year.

This approach necessitated a cultural shift among staff and governance bodies, emphasising the need to foster bottom-up change in staff attitude to remove the barriers to agile course development. This process has also given Flinders a template for third-party arrangements which can be adapted for future opportunities.[40]

Developing short-form content, in partnership with the private sector

The University of Texas (USA) has partnered with Coursera to launch an industry micro-credential program. All students, faculty and staff have access to Career Academy which includes more than 35 professional certificates from large tech companies such as Google, IBM, Meta and Salesforce.[41] The university has incorporated these micro-credentials into its undergraduate curriculum.[42] By providing access to alumni it also helps to promote lifelong learning.

2.3
Simplified course or program structures

45%

of university leaders surveyed, were dissatisfied or very dissatisfied with their univerity's processes to develop or refine the structure of its education portfolio

Course structures provide the framework for how universities' education programs are designed. It is important that course structures support, rather than impede, teaching and learning.

However, it is not uncommon for universities to have complex course structures that are challenging for students to navigate, complex to teach, and expensive to administer. For example, in our survey of university leaders almost half (45 per cent) of respondents were dissatisfied or very dissatisfied with their university's processes to develop or refine the structure of its education portfolio, while just over one-quarter (29 per cent) were satisfied or very satisfied.

Simplifying course structures is a priority for some universities. This simplification process occurs, for example, by establishing consistent definitions of majors or specialisations; having consistent principles for designing units that meet the needs of multiple programs or courses; and clarifying entry points. Simplification reduces administrative complexity for academic and professional staff and, critically, it enhances navigability, choice and flexibility for students.

Universities are increasingly adopting modular course structures, where units or subjects can be rearranged or combined with other modules to create different course configurations. This gives academic staff greater flexibility in course or program design while also giving students more flexibility and personalisation in learning pathways. By creating a structure within which units or subjects can be readily incorporated into broader qualifications, this can help universities' efforts to develop educational offerings more responsively (as described above). In these ways, course structure is an important lever that universities can use to reduce pressures on and enhance the quality of their education portfolios.

Examples of good practice

Providing flexibility through stackable short courses

Deakin University (Australia) has introduced stackable short courses that allow students the flexibility to study a range of units which can be undertaken as a standalone credential or stacked together as credit towards a postgraduate degree. This provides a customisable study experience that enables students to fill knowledge and skills gaps in a targeted way.[43]

Simplifying course navigation through structured unit codes

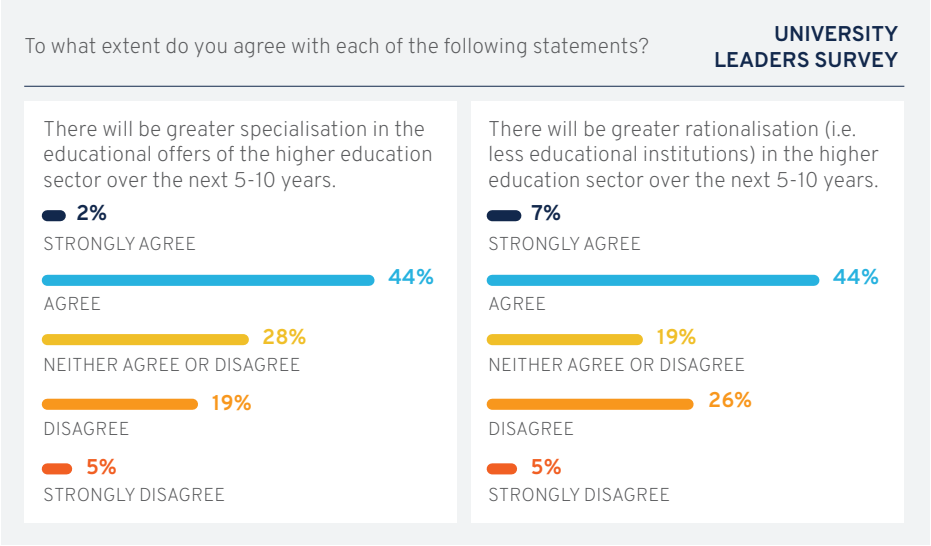
Monash University (Australia) has simplified course navigation and academic planning through a structured unit code system. Each code consists of a three-letter prefix that indicates the faculty, such as 'ATS' for Arts, followed by a four-digit number where the first digit represents the course level. This systematic approach allows students to quickly discern the faculty and year level of courses, enhancing their ability to select appropriate classes and manage their academic progression.[44]

2.4
Greater institutional specialisation

Maintaining a mission-centred and sustainable education portfolio sometimes requires universities to make difficult decisions and trade-offs. However, there can be a tendency for universities to incrementally add to their portfolio over time, without considering the portfolio holistically and without being willing to discontinue courses or programs that are neither viable nor (necessarily) strategically important for the university.

A more disciplined approach to portfolio management can help to deliver a distinctive and authentic offer with a clear value proposition. Over the longer term, for some universities this may involve greater institutional specialisation. Indeed, in our survey of university leaders, just under half (46 per cent) reported that they expect greater specialisation in educational offerings over the next five to ten years. In addition, just over half (51 per cent) expect rationalisation in the number of universities in the higher education sector over the same period (see Figure 7).

FIGURE 7
EXTENT TO WHICH UNIVERSITY LEADERS EXPECT GREATER SPECIALISATION AND RATIONALISATION



This would be a significant change for universities and the higher education sector. Most universities in Australia and many in the UK and Canada currently have a comprehensive offer covering a wide range of disciplines. There are many good reasons for this, both for the universities themselves and the communities they serve. For example, for universities whose academic and social mission is closely tied to geography, providing a wide range of courses or programs that meet the social and economic needs of their community is critical.

But the proliferation of 'comprehensive offers' across the higher education sector comes with costs. It creates unnecessary duplication in educational content that varies little across institutions. It can also limit the ability for universities to focus efforts and resources on developing deep specialist expertise in critical fields of study.

Several university leaders engaged in this study expressed the hope of greater collaboration between universities to develop and deliver some core, basic modules which are currently delivered by many universities but which differ very little (and which are neither a source of competitive advantage nor a driver of student choice). While there are significant cultural and financial barriers to achieving this, it could provide a way for students to get the benefits of comprehensive offerings in the context of a more specialised higher education sector.

> The reason we add to the curriculum, is we're not brave enough to pull it apart. And sometimes, it's because we're not close enough to industry to know how to rebuild. We're slow to change, we tinker around the edges rather than thinking about how we genuinely address the problem.
>
> **University leader engaged in this study**

Examples of good practice

Building a specialist offering around Science Technology Engineering Mathematics (STEM)

Imperial College London (UK) has developed a specialised course offering focusing exclusively on STEM subjects, establishing itself as a beacon for science, engineering, medicine, and business studies. Ranked second in the world in the QS World University Rankings 2025, Imperial is renowned for its research-led education, exposing students to real-world challenges and opportunities to work across multi-cultural, multi-national teams. Offering a wide array of specialised courses, Imperial emphasises interdisciplinary study and practical experience, including opportunities for overseas work and research.[45]

3

A curriculum rooted in enduring values of the academy that delivers on contemporary needs

Demands on the university curriculum can seem insurmountable. Across all fields of study, universities are increasingly expected to respond to industry needs and develop skills that prepare students for employment amid a rapidly changing world of work. At the same time, many universities reasonably understand themselves as cultivating well-rounded, autonomous and civically engaged graduates by imparting a broad base of knowledge, critical ways of thinking and metacognitive skills. The challenge is to show the value of a university education by striking the right balance between these conceptions.

In this chapter, we explore the evolving dynamics of university curriculums, focusing on four areas:

3.1

A curriculum that balances different types of skills: Universities' curriculums should aim to balance imparting human, transferable skills and technical, discipline-specific skills, focussing on those with the greatest value for students and communities.

3.2

Institutional structures and a system-wide approach to enable lifelong learning: While universities currently play some role in supporting lifelong learning, traditional education models are in many ways not well set up for this purpose. Playing a larger role in lifelong learning will require a clear value proposition, supporting structures for education delivery and a system-wide approach.

3.3

Tangible connections to real world challenges: Universities' curriculums can and already do provide opportunities to connect students with the 'real world problems' facing industries and communities outside the classroom. Cross-disciplinary perspectives are increasingly important in tackling real world challenges.

3.4

Personalised learning through 'just enough' choice: Universities are designing more flexible curriculums that provide more personalised learning pathways for diverse needs and preferences. On the other hand, too much flexibility and choice can be detrimental, and it is very costly to administer.

3.1
A curriculum that balances different types of skills

Universities must strike a balance between developing technical and discipline-specific skills on the one hand, and more general transferable or human skills on the other. Curriculums must also balance an emphasis on enduring skills that are foundational to a discipline and emerging skills that are increasingly in demand in the modern world of work. With limited time in the calendar and space in the curriculum, there are difficult trade-offs to make about the learning outcomes that curriculums should prioritise. Whatever the focus, it is important that university curriculums are clear about the skills and knowledge that they seek to develop and the value this brings to students and employers.

This pressure is reflected in our student survey. While there was a general preference among students towards a focus on technical skills, nearly half of respondents (46 per cent) preferred a balance between technical and human skills (see Figure 8). The right balance will vary across universities and disciplines. For example, in some disciplines universities need to impart skills and knowledge that are required by regulation for particular vocations. Whatever the focus, it is important that university curriculums are clear about the skills and knowledge that they seek to develop and the value this brings to students and employers.

FIGURE 8
STUDENT PREFERENCE FOR TECHINICAL/HUMAN SKILLS

What is the ideal balance of developing 'human skills' and 'technical skills' through your university studies?

UNIVERSITY STUDENT SURVEY

Surveyed university students had a general preference for development of technical skills, although almost half supported a balance between technical and human skills.

This preference was consistent across all jurisdictions and disciplines although slightly more students preferred a balance in certain fields of study (Arts and Humanities, Social Science, and Environmental Studies).

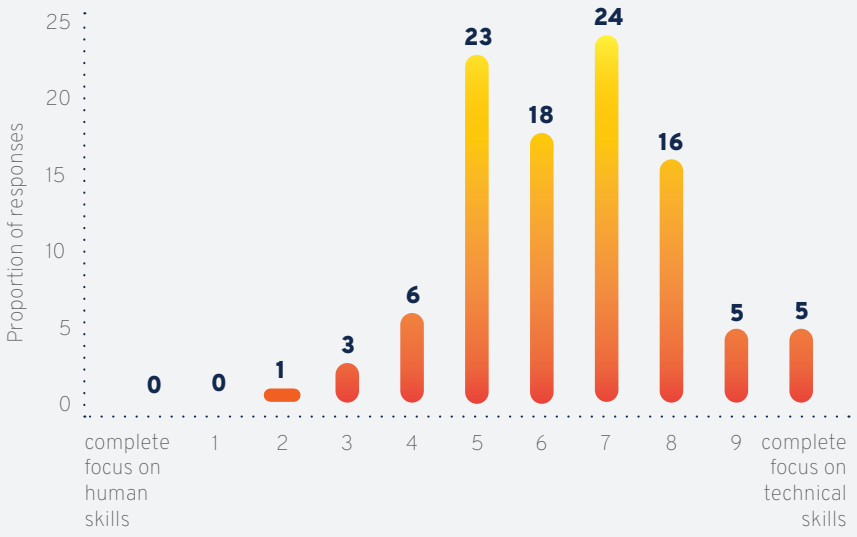
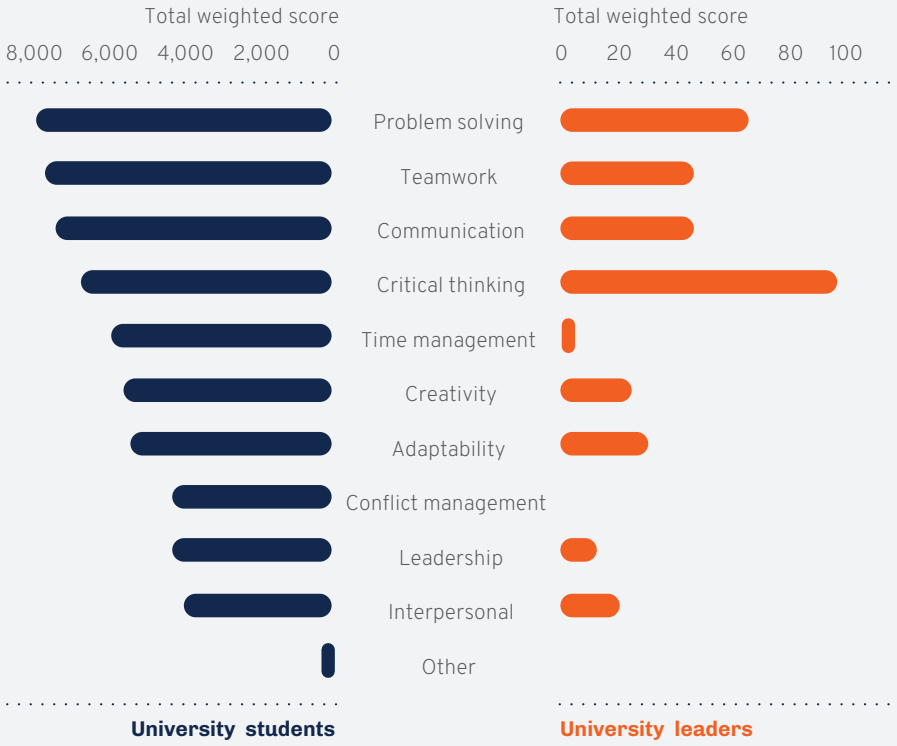


FIGURE 9
MOST IMPORTANT HUMAN SKILLS FOR STUDENTS AND UNIVERSITY LEADERS

What skills, other than discipline-specific skills, are most important to embed in a university's curriculum?

UNIVERSITY STUDENT AND LEADER SURVEY

University leaders and students identified a similar set of human skills as the most important to incorporate into universities' curriculums



In this context, universities can gain a competitive advantage by being able to anticipate emerging skill needs and by developing institutional processes – for example, flexible curriculums, responsive development practices and modular course structures – that enable educational offerings to rapidly meet identified skill gaps.

The tension between technical skills and human skills can be managed in part through:

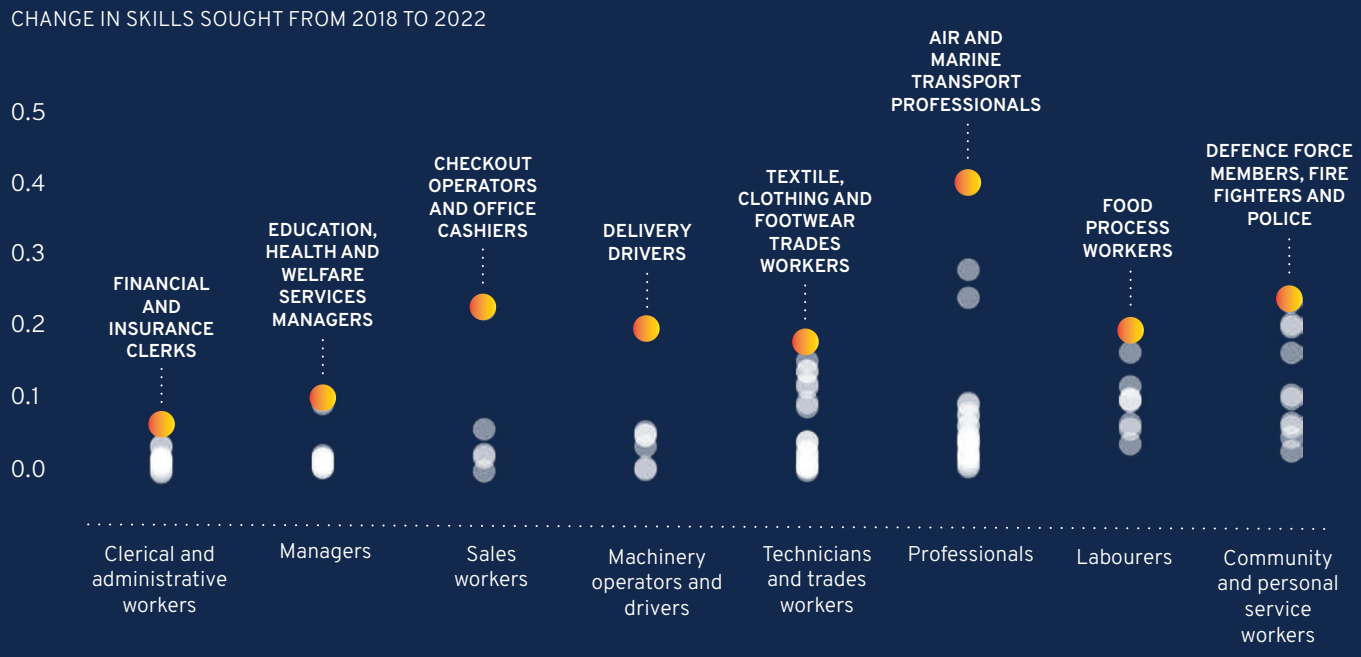
- **Careful curriculum design** – For example, holistic assessment methods with a teamwork component, or experiential learning opportunities that support real-world application of discipline-specific knowledge, can support students to simultaneously develop both types of skills. More generally, some universities are orienting their entire curriculums around development of technical competencies as well as foundational knowledge.
- **Focussing attention on specific human skills** – In our surveys of university students and leaders we found that both groups ranked the same four human skills as the most important for a university qualification to impart: critical thinking, problem solving, teamwork and communication. Our analysis of job market data indicates that these skills are also highly demanded by employers, alongside adaptability and interpersonal skills. These kinds of skills have an enduring relevance to workplaces and the university curriculum.

A more significant challenge lies in identifying the emerging capabilities – or 'last mile skills' – that are particularly valuable (and scarce) in modern workplaces and incorporating these into the curriculum. These vary across disciplines but may include AI literacy and data analytics. Incorporating last mile skills into the curriculum is especially difficult in rapidly evolving industries. However, even in the more static industries, the rate of skill change can vary considerably between occupational groups (see Figure 10).

FIGURE 10

THE RATE OF SKILL CHANGES WITHIN OCCUPATIONAL GROUPS (AUSTRALIA 2018 TO 2022)

A higher point on the y-axis indicates a higher rate of skill change. The rate of skill change varies considerably within occupational groups. Certain specific occupations see considerable change even in occupational groups that see less skill change overall



Source: Nous analysis of Lightcast data, 2023.

1. cosine similarity: 0 means no change, 1 means completely different.

2. Each point is a 3-digit occupation minor group; occupations with a high rate of change are labelled.

Examples of good practice

Embracing competency-based education to align degrees with workforce demands

Competency-based education (CBE) represents a significant evolution in how academic achievement is measured. It shifts the focus from traditional time-based metrics to a model that emphasises demonstrated competence and real-world application of skills. Southern New Hampshire University (US) exemplifies this approach with a curriculum structured around practical projects that cater to the specific competencies and human skills sought by employers. By integrating direct assessments and industry input, CBE aims to produce graduates who are not only proficient in theoretical knowledge but also adept at applying these skills in professional settings. This model addresses the increasing demand for clarity on what skills a degree entails and what graduates can perform in the workforce, ensuring that learning is both relevant and adaptable to the job market.[46]

Preparing students for the future workforce

Asia Pacific University (APU) of Technology & Innovation (Malaysia) uses an Industrial Revolution 4.0 Framework to structure many of its educational programs. The university emphasises curricula that integrate core technologies such as artificial intelligence and robotics, ensuring that students gain the necessary skills and knowledge to thrive in the future workforce. Collaborating closely with industry experts, APU develops programs that blend technical prowess with essential human skills, within a learning environment supported by cutting-edge facilities. This comprehensive educational approach prepares APU graduates for global challenges, and has helped to establish APU as a top university in terms of graduate outcomes in Malaysia.[47]

Universities have been at the forefront of knowledge creation, but not knowledge diffusion. Beyond having an 'learn and earn' model and relying on brand, they need to consider the entire spectrum of lifelong learners.

HE expert engaged in this study

How do we keep people learning thorughout their lives? Higher education has completely ducked their responsibility here, because the degress are being construed as ends of themselves, not about setting up the students with the will to learn.

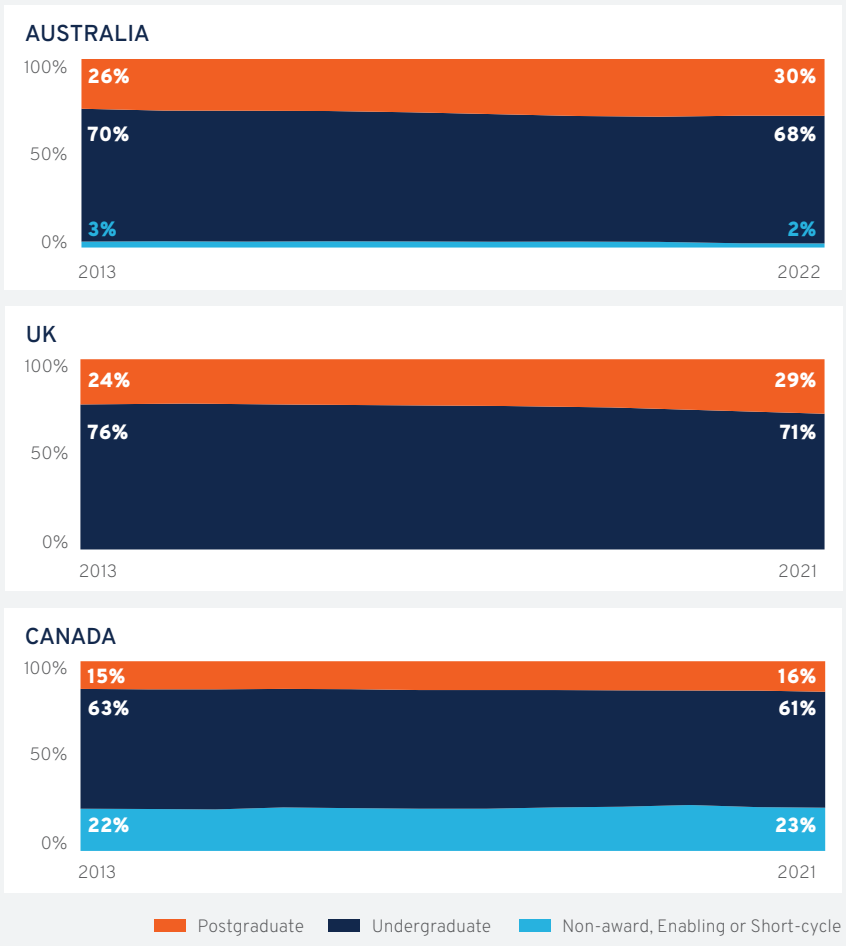
HE expert engaged in this study

3.2 Institutional structures and a system-wide approach to enable lifelong learning

Lifelong learning is a common aspiration in education and training systems around the world. It is increasingly important in a world with rapidly changing skill needs where people can expect to have several careers across a range of different occupations in their lifetimes. Its value is increasingly recognised by governments. For example, the UK Government's Lifelong Learning Entitlement – which is anticipated to commence from 2026 – will provide tuition loans for people up to the age of 60 to train, retrain and upskill flexibly over their working lives.[48] It will be useful to pay close attention to how this progresses, given that the pilot suggested reticence among potential applicants to take up loans or to pursue full qualifications.[49]

Universities already support lifelong learning in some ways. For example, over the last ten years postgraduate students have come to make up an increasing proportion of total enrolments in universities in Australia, the UK and Canada (see Figure 11). In certain disciplines – such as health and education – there are established institutional structures in universities to support ongoing learning across a person's career.

FIGURE 11
PROPORTION OF STUDENTS STUDYING BY LEVEL AND COUNTRY, BY HEAD COUNT



Canadian students are classified according to the International Standard Classification of Education (ISCED). UK students are classified using a mix of different methods, including the ISCED. Definitions for UK can be found here. Australian students are classified using the Australian Standard Classification of Education (ASCED).

In addition, to the extent that universities foster in all students the metacognitive skills that enable and excite them to learn across their lifetimes, they play an important role even where they do not directly deliver education.

Notwithstanding this, the current education model is not well suited to supporting universities to play a more substantial role in lifelong learning. For example, postgraduate degrees tend to be more expensive and time-consuming than other training courses that people can use to upskill or reskill throughout their careers. Moreover, universities have historically been designed for full-time, on-campus students, which can limit the reach of a university education to other prospective student cohorts. An institutional emphasis on academic research may not be well aligned to lifelong learning goals. In an increasingly saturated market of non-university mature-age education and training providers, there are important questions about what role universities should play in lifelong learning.

Playing a larger role in lifelong learning, for those universities that choose this path, will require:

- **A value proposition that mirrors the learner journey** – There is opportunity for universities to better articulate their unique value proposition when it comes to additional education over a learner's lifetime. "Content – cohort fit" is about: having clarity about what different groups of learners most want and need from the university's educational offerings (at each point in their learner journey); making decisions about what a university can and should feasibly offer that is different or better than other types of learning; and finally, being able to articulate this value in a way that resonates with learners.
- **Different supporting structures at scale** – Universities need the mechanisms to support scalable (and thus more sustainable) lifelong learning options such as through dedicated online delivery. This necessitates thinking differently about the types of students that universities can or want to serve through this medium. The archetype of a mature-age, lifelong learner is different from the persona of the university's typical undergraduate. More responsive development of educational offerings, and reconsidering academic workforce models, will also support lifelong learning at scale.
- **System-wide approach** – Realising the potential of lifelong learning requires a system-wide approach with upskilling and reskilling pathways which can be flexibly delivered between courses and tertiary institutions and which allow for intermittent periods of work and study. In this context, partnerships between universities, or between universities and other training providers, will be important. Mechanisms to recognise prior learning and experience are especially important to support interoperability between universities and other training providers.

Examples of good practice

A dedicated lifelong learning program

The National University of Singapore's (NUS) L³ Program offers a suite of course and programs catered to various job levels aligned to different skill needs identified as priorities by the Singapore Government (such as the digital economy, care economy and green economy). This program provides a large catalogue of skills-based, industry-relevant courses, including short courses structured around specific skills, which can also be staked to a certification or a second qualification.[50]

The program links to NUS's career advisory services and employment facilitation. It includes learning and development offers targeted at companies seeking to attract and retain talent.

The Open University (UK) has been a pioneer in lifelong learning. Since it was founded in 1969 it has aimed to provide learning opportunities without conventional boundaries.[51] It offers a plethora of flexible learning options, including online degree programs, short courses and free learning modules on its OpenLearn platform, making education accessible to those balancing other commitments.[52]

Partnering with government and industry to enable lifelong learning

The Institute of Coding (IoC) is a national consortium in the UK made up of employers, universities and outreach partners and led by the University of Bath. Its mission is to address the digital skills gap by delivering employer-led digital skills education.

Through collaborative efforts, the IoC has developed over 150 new courses, engaging 900,000 learners with varied backgrounds and goals.. Initiatives include:

- government-funded Skills Bootcamps, which are flexible courses that give people the opportunity to build up sector-specific skills and fast-track to an interview with a local employer
- the Click Start program, which provides free digital skills training designed by university experts and industry specialists.

These initiatives offer flexible learning options, career advice and mentoring, so that learners can enhance their employability and adapt to the evolving job market.[53]

Examples of good practice

Bridging academia and industry

York University's Lassonde Engineering School (Canada) has initiated a pioneering digital technologies work-integrated degree program, which blends full employment with academic studies towards a Bachelor of Applied Science degree. This innovative model emphasises practical work experience integrated with academic learning, aiming to increase educational accessibility and address underrepresentation in STEM fields, particularly among women. The program aligns closely with industry standards to prepare students for immediate entry into the tech workforce, addressing Canada's tech talent shortage while fostering a comprehensive professional network and hands-on experience for students.[54]

The Dyson Institute of Engineering and Technology (UK) was established to address persistent shortages of engineers. Its curriculum integrates academic studies with applied work by giving students opportunities to apply academic concepts to hands-on work on future Dyson products. In its four-year Masters of Engineering program, students study a general engineering syllabus and rotate through many of Dyson's global engineering teams, learning from both academics and engineers.[55]

Co-locating with industry and fostering connections to community

The University of Salford's MediaCityUK base (UK) shares a building with broadcaster ITV. It provides students with industry-leading facilities and encourages collaboration between students, specialist technicians, academics and the media production industry.[56]

The University of New England's Tamworth Campus (Australia), currently under development, is designed to be embedded within the community and to promote student support and engagement with the community, with tailored educational programs that deliver skills required in the region.[57]

3.3 Tangible connections to real world challenges

Universities can deliver high-quality learning experiences and outcomes for students by integrating curriculums into real-world settings and problems outside the lecture theatre. The challenge is to adopt sustainable and scalable approaches that deliver value to students and keep pace with industry evolution.

Mutually beneficial industry connections

There are many models for connecting students to industry through their studies, such as the co-op model of delivery, common in Canadian universities; the placement (or 'sandwich') year at many UK universities; and degree apprenticeships, which will likely become increasingly common in Australia. Connections with industry can range from co-location with incidental contact, different forms of work-integrated learning such as project-based learning and structured placements, and industry-led curriculum design.

Each university needs to consider the appropriateness of these connections within their own economic and community context. Nevertheless, they are front of mind for many. In our survey of university leaders, two thirds of respondents (66 per cent) reported that having work-integrated learning opportunities across all disciplines is a priority at their university to a large or very large extent.

In seeking to connect students to industry, universities need to navigate a range of challenges:

- **Financial and logistical challenges** – University leaders reported that 'finding suitable placements', 'managing logistical challenges' and 'appropriate support and supervision' were the three most significant challenges to increasing the scale or quality of work-integrated learning across their university. For these reasons, the nature and degree of connection with industry should be negotiated with government and industry to more equitably 'spread the load' as it were. In Australia there has been some success with this in that the Australian Government has recently agreed to give students placement payments for certain in-demand disciplines such as nursing and teaching.
- **Strategic challenges** – Developing deep partnerships with industry can also be a challenge. For instance, only a slight majority (53 per cent) of university leaders surveyed in this study reported that, in courses or programs that traditionally have a work-integrated learning component, content is designed or refined in collaboration with industry to a large or very large extent. Universities that manage these relationships effectively often have sophisticated approaches akin to account management and business development practices, adopted by both professional and academic staff.
- **Existential challenges** – There is also a more fundamental question about the respective roles of universities and industry in building capabilities of students. While universities can develop technical and human skills required in places of employment, they are not well placed to prepare students for the more operational elements of specific jobs. Having an open dialogue with industry to negotiate the respective roles of academic education and industry-based training is critical.

Educating for impact through cross-disciplinary learning

Increasingly, major global issues – whether global development, climate change or the rise of AI – are not the exclusive domain of a single discipline, nor do they conform to the traditional division between faculties and disciplines. In this context, cross-disciplinary offers are becoming increasingly important, as ways of both attracting students and showing the social and economic value of a university education. Many university leaders interviewed in this study emphasised the importance of bringing together multiple disciplines in curriculum design and education delivery.

There are many cultural, institutional, operational and financial barriers to delivering university education across disciplines. Perhaps most fundamentally, traditional discipline boundaries have substantial utility for the production and diffusion of knowledge. Disciplines contain specific bodies of knowledge, distinct epistemic and methodological norms, and different ways of understanding the world and solving problems, which cannot be readily translated to other disciplines.

The challenge for cross-disciplinary courses or programs is to foster collaboration between disciplines in the design and delivery of teaching to students – by respecting divisions between disciplines, but not reifying traditional boundaries for their own sake.

> If the world is crazy and we want our students to go out into the world, they cannot simply go out into the world as physicist, economists, or chemists… because the challenges of the world do not come in disciplinary bundles.
>
> **University leader engaged in this study**

Examples of good practice

Orienting learning experiences or curriculums around major global challenge

The Terrascope program at the Massachusetts Institute of Technology (USA) is a first-year learning community that empowers students to address complex, real-world environmental challenges through interdisciplinary research and design projects. Each year, the Terrascope program explores a different global issue. Students work in teams to develop solutions, drawing on diverse perspectives and interdisciplinary research.[58]

Service learning to foster civic responsibility and global awareness

At **The Hong Kong Polytechnic University** every undergraduate must complete at least one Service Learning subject, merging community service with academic rigour and reflective practice. The program includes a breadth of subjects addressing societal challenges such as technology gaps, health education and environmental sustainability. The Service Learning requirement has successfully fostered civic responsibility, social justice and ethics among students. The curriculum provides structured, credit-bearing experiences where students can apply their knowledge in real-world contexts. This provides a robust learning experience that prepares students to be socially conscious leaders and problem-solvers for the complex contemporary challenges.[59]

King's College (UK) integrates academic learning with community service through its service learning programs, fostering both intellectual growth and social responsibility. This approach encourages students to apply classroom knowledge to real-world community needs, enhancing their understanding and civic engagement. Programs include tax preparation assistance, job skill development at shelters, financial literacy education, and participation in Habitat for Humanity projects.[60]

> Though [we] have more choice than any group of people ever has had before, and thus, presumably, more freedom and autonomy, we don't seem to be benefiting from it psychologically.
>
> **Barry Schwartz, 'Paradox of Choice'[61]**

3.4
Personalisation through 'just enough' choice

Universities' curriculums increasingly need to cater to the learning needs, preferences and goals of diverse student cohorts. Greater participation – especially among traditionally underrepresented student cohorts – means that curriculums need to include learning outcomes and approaches that support students with additional or different learning needs.

There are many ways of personalising learning pathways, including self-directed learning, competency-based education, customisable degree pathways, pathway programs and academic support programs, modular curriculum design, and models that conceptualise students as partners in teaching and learning. These can provide for greater flexibility and customisation in curriculum development and delivery.

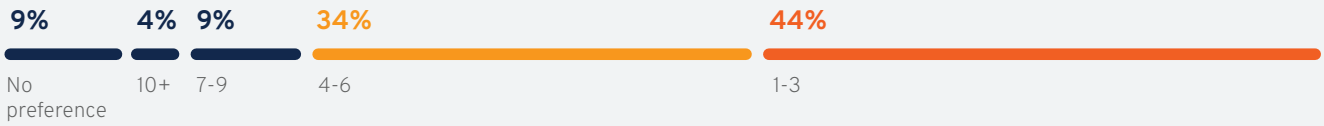
However, a key challenge in personalising the learning experiences of students is that too much choice and flexibility can be counterproductive. It can be overwhelming for students, and it can detract from the social experience of university that depends on sustained engagement with a cohort. To take one example, our survey of university students found that, across all disciplines, students preferred to be able to choose a major from a smaller number of options (see Figure 12).

Striking the right balance of structure and flexibility is important for quality learning experiences and outcomes. Universities may think about how they can provide 'just enough choice' to the benefit of both students and the university.

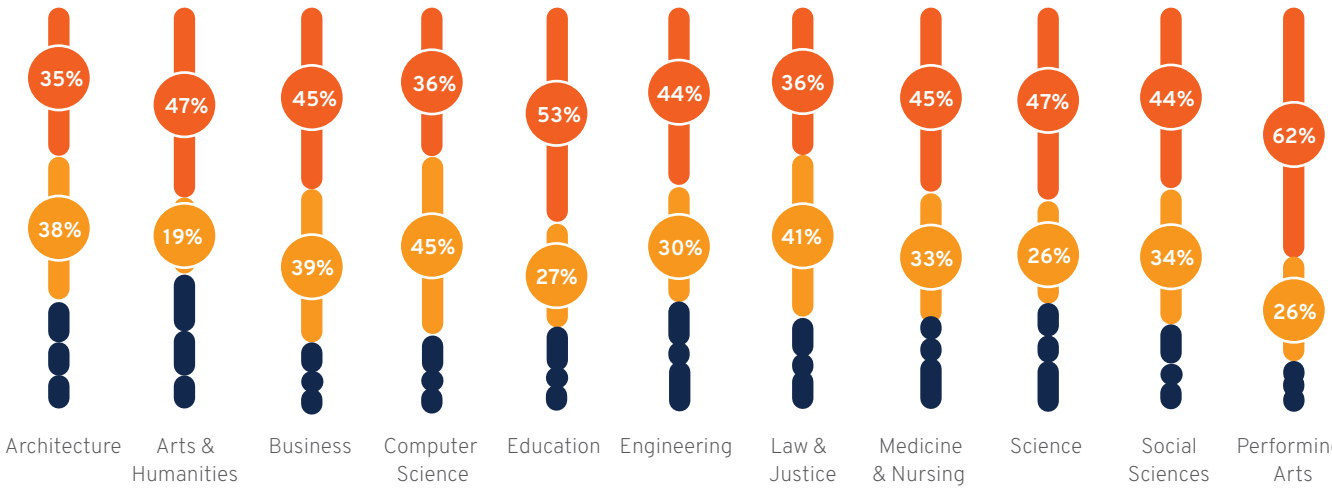
FIGURE 12
UNIVERSITY STUDENT PREFERENCES AROUND OPTIONS TO SELECT MAJOR(S)

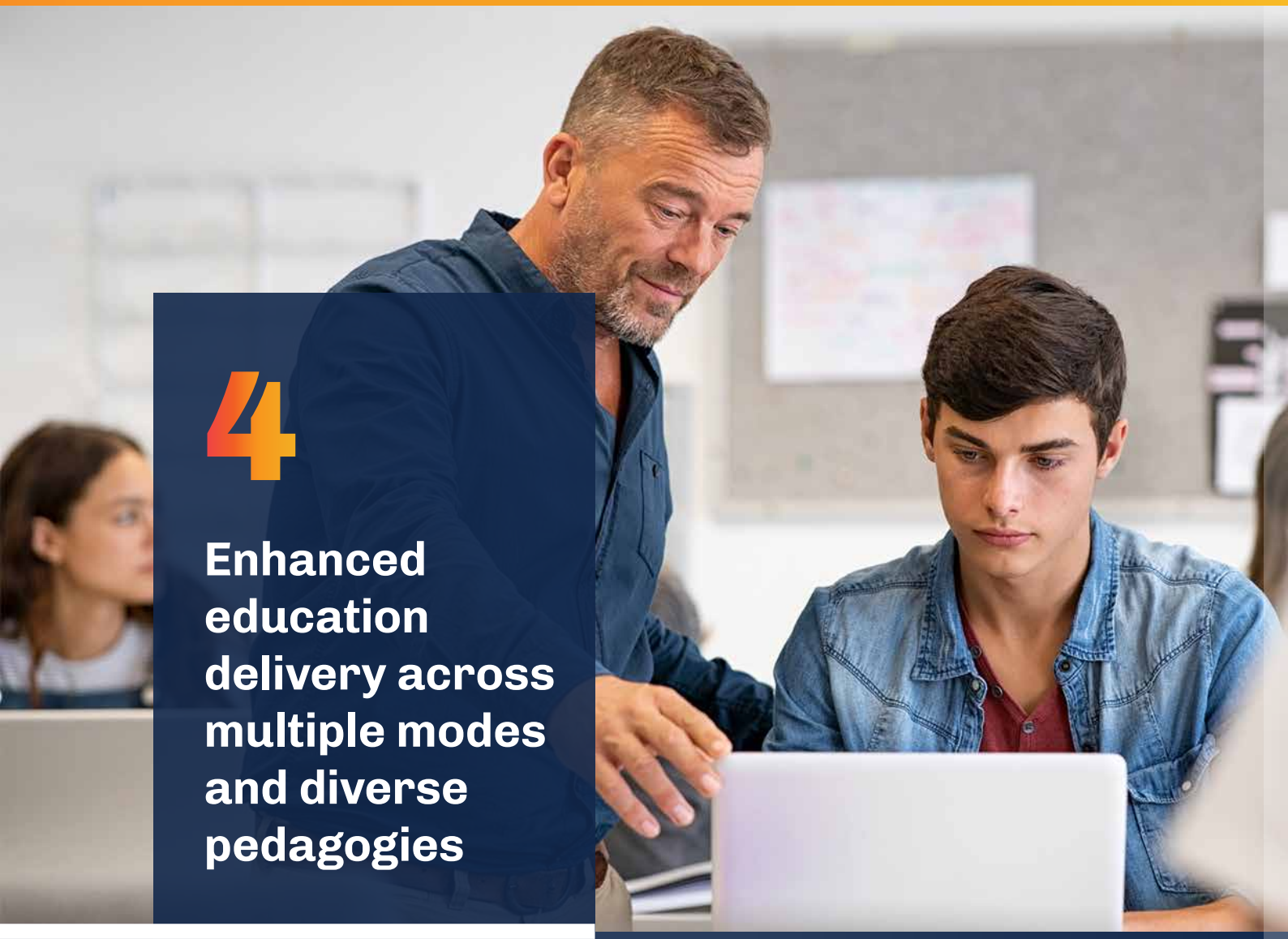
What is the ideal number of options from which you should be able to select a major(s) for your degree?

UNIVERSITY STUDENT SURVEY



By disciplines





4

Enhanced education delivery across multiple modes and diverse pedagogies

Universities and their academics increasingly need to teach across different delivery modes, bringing to bear pedagogical expertise to meet the diverse learning needs, preferences and capacities of students. In these endeavours, as in many domains of life, technology is a double-edged sword. Online and blended delivery can be flexible, but it can also promote an impersonal and transactional approach to a university education. Generative AI (among other new technologies) can enhance accessibility and deliver more personalised and differentiated approaches to teaching and learning, but it also creates risks around academic integrity and overreliance on technology.

This chapter explores three ways that universities can improve the practices and modes of teaching delivery:

4.1

Fit-for-purpose online learning and teaching: Notwithstanding a significant global trend towards online learning, often considerable time, effort and attention is needed to deliver a meaningful learning experience through online and blended modes.

4.2

Harnessing AI to improve teaching and learning: While many universities have understandably focussed on the risks that AI poses to traditional education delivery, a more strategic approach is needed – and is being taken by some – to use these tools to enhance teaching and learning.

4.3

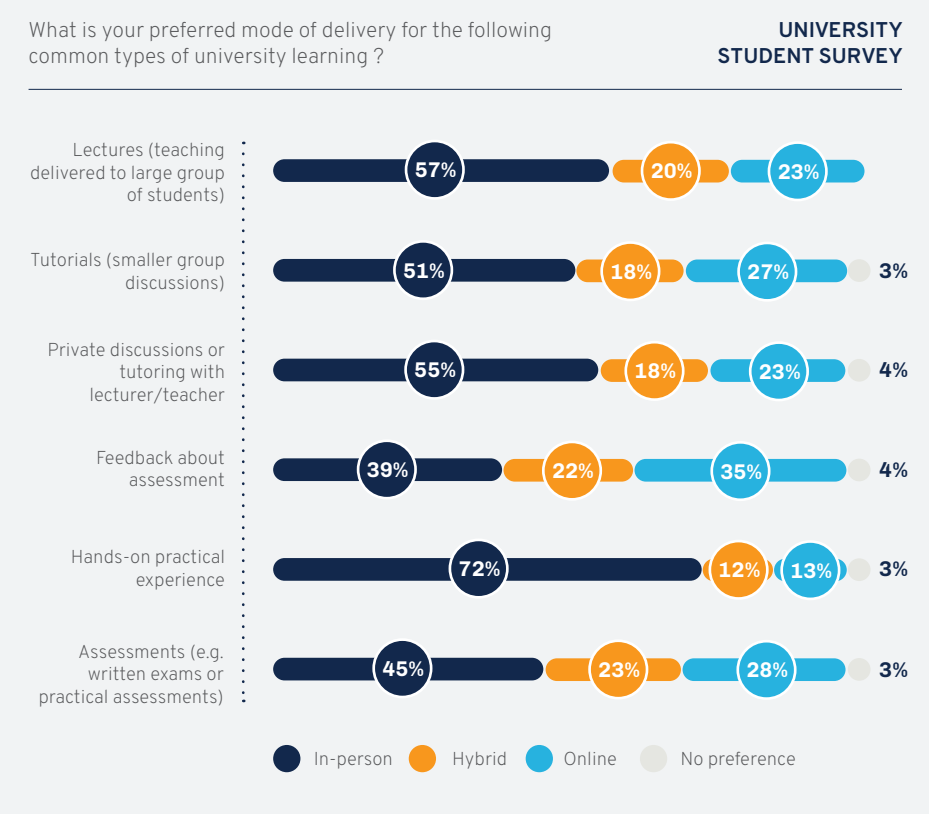
Creating inclusive learning environments: Universities increasingly need to create and cultivate inclusive learning environments and approaches to improve access, equity and outcomes, especially for traditionally underrepresented student cohorts.

4.1
Fit-for-purpose online learning and teaching

Online delivery has become a core part of universities' educational offerings in Australian, Canadian and UK universities. In all three countries online delivery has grown steadily over the last ten years. Blended and hybrid delivery modes are increasingly the norm, both because students want flexibility in how and when they learn, and because offering education across different modes is a way for universities to attract new student cohorts.

This does not mean in-person delivery is any less desirable than other modes of delivery. Indeed, our survey of university students found that a majority of students (both undergraduates and graduates) preferred in-person delivery for most types of learning (lectures, tutorials, private tutoring, assessments, assessment feedback and practical experience). However, nearly 40 per cent also preferred pure online or hybrid delivery (see Figure 13).

FIGURE 13
UNIVERSITY STUDENT PREFERENCES FOR MODE OF DELIVERY FOR COMMON TYPES OF LEARNING



University leaders agree. In the university leader survey only seven per cent of respondents agreed or strongly agreed with the statement "most students in the higher education sector will study primarily or solely online in five to ten years' time." By contrast, over two-thirds of respondents disagreed or strongly disagreed. As universities seek to cater to the diverse preferences of their students, the challenge is to provide flexibility without compromising on the quality of education delivery and in a way that is economically viable for the university. While online offerings are common across countries and disciplines, they are not always done well. In online settings it can be hard to replicate the experiences that occur naturally through in-person connections.

A common theme that we heard across this study is that there is considerable work to ensure that online learning is a meaningful and rewarding experience for students. For example, in our survey of university leaders, over two-thirds regarded their online education to be average or below average in quality.

Universities that excel in online delivery carefully consider pedagogy in the design and structure of online, blended and hybrid offerings. This can involve:

- **Intentional learning approaches** – Developing flipped classroom or other blended learning approaches that prioritise in-person activities for materials that are best learned through face-to-face interactions, while enabling information transmission to occur in other settings. This should be informed by careful consideration of which educational content is most suitable for synchronous or asynchronous learning.
- **Personalised learning pathways** – Developing interactive online offerings that provide personalised learning pathways, engaging ways to understand key concepts, opportunities to test and apply these understandings, tailored assessment approaches and regular feedback.
- **Learning capability** – Building digital pedagogy and technology-enhanced learning capabilities among teaching academics or providing centralised support for them to access this expertise. Notably, our survey of university leaders found that limited faculty training or capability was ranked as the top challenge for universities in improving the scale or quality of their online offerings.

Through these strategies, online delivery need not be just a necessary evil or a requirement for the sake of convenience; rather, it can be a catalyst to enhance teaching delivery, particularly for those cohorts of students for whom it is preferred.

Importantly, universities need to be selective about how they invest in improving online delivery. It is costly to develop bespoke online offerings or content, and it may not always be necessary for high-quality learning experiences. For example, our survey of university students found that they were significantly more optimistic about the quality of online education than university leaders and academics. Nearly three-quarters (73 per cent) of student survey respondents reported that the quality of online at their university was very good or good, while only four per cent rated it as poor or very poor. In this context, it is important for universities to consider where they can get the most bang for their buck in investing in improvements to online delivery – for example in attracting new students, scaling existing offers or enhancing quality in areas identified to be poor performing.

Examples of good practice

Flexible delivery by default

The StudyFlex program at La Trobe University (Australia) offers significant flexibility in course delivery, accommodating both on-campus and online learning formats. It allows students to choose from subjects available either entirely online or on campus, with at least one-third of a course's subjects accessible in either format. StudyFlex majors provide sequences where at least half of the subjects are offered online or on campus, catering to the diverse needs and preferences of students.[62]

Putting pedagogy at the heart of an online education offering

Arizona State University (USA) has an innovative, student-centric approach to online education. Its courses are designed specifically for online delivery, focusing on asynchronous learning to accommodate diverse schedules, and incorporating virtual reality to bring to life what students are learning in the classroom. Programs cater to different learning styles by incorporating a variety of materials and assignments, such as video-based presentations, virtual simulations and interactive assignments. The course structure emphasises shorter, focused sessions, allowing students to delve deeper into subjects, offering flexibility and potential for accelerated degree completion.[63] Arizona State University recently partnered with OpenAI to integrate generative AI tools into its digital learning platforms.[64]

> University processes and governance is too slow relative to the pace of AI development, a major challenge will be upskilling academics to use AI successfully.
>
> **Vice Chancellor interviewed in this study**

> People are going to use [AI], you can't stop it. We need to carefully think about how we use it and start shaping AI literacy earlier rather than later.
>
> **Professor of Higher Education interviewed in this study**

4.2 Harnessing AI to improve teaching and learning

The rapid growth of the education technology (or 'EdTech') industry around the world – and increasing adoption of EdTech tools by universities – reflects that technologies are becoming increasingly embedded into education delivery and learning processes. Most recently, the rapid emergence of AI, particularly generative AI, represents a major turning point which has significant potential to reform how teaching is delivered at universities and how students learn.

Since generative AI entered the public imagination with the release of ChatGPT in late 2022, its ability to quickly generate relatively high-quality text – which is often indistinguishable from text written by people – has presented challenges for universities around how to assess student learning. It is hard to ensure that students' written work is their own, and existing AI-detection tools are currently of limited use. This is prompting a reconsideration of traditional forms of assessment.

Given these challenges, it is understandable that a kneejerk reaction from many universities has been to focus on the downside of generative AI, with some outright banning its use for certain subjects.[65] However, prohibitions are not a realistic long-term solution. Aside from the fact that students can readily access and use these tools, they also have a vast potential to enhance teaching and learning. By leveraging AI, educators can enhance educational outcomes through various applications. For example:

- **Providing more personalised learning** – Generative AI tools can act as private tutors, providing feedback, clarifying complex concepts and offering tailored suggestions to improve students' understanding and performance. This personalised support can enhance learning by addressing individual student needs, fostering greater engagement, and helping students develop critical thinking and problem-solving skills through interactive and adaptive learning experiences.[66]
- **Greater support for academic teachers** – Generative AI tools can enhance teaching by automating routine tasks and providing valuable resources to create more engaging and interactive materials for students. For example, educators can use AI on a wide range of tasks such as designing marking rubrics, drafting lesson plans, creating discussion prompts, providing feedback on written work and composing exemplars for critique.[67]
- **Improving student experiences and outcomes** – Predictive AI tools can use machine learning and models to identify patterns and anticipate future behaviour, such as flagging students who are at risk of dropping out and giving them information, supported services and tailored academic support. [68]

Forward-thinking universities are starting to harness this potential. They are using generative AI to tailor educational experiences more closely to individual student needs, encouraging bottom-up innovation from academic teachers about how to use these tools, and providing guidance about how to use these tools to enhance learning.

Examples of good practice

Building students' AI capabilities

San Diego State University (USA) undertook a comprehensive student survey to understand the needs of students and to ensure equitable access, foster responsible use, and empower faculty, staff, and students in navigating the generative AI landscape.[69] SDSU also launched a micro credential on Academic Applications of AI.[70]

Incorporating AI into student support

Studiosity is an Australian-based company partnering with university clients across the globe to offer a suite of online academic development and literacy support services for students. Their new product, Studiosity+ integrates AI with human oversight to deliver immediate academic feedback. Designed for scale, this platform provides formative feedback within minutes, significantly enhancing students' writing and critical thinking skills. Studiosity partners have recorded a 3.96-point increase in median grades and a 21.9 per cent boost in unit completion. By ensuring high-quality and ethical support across diverse student populations, Studiosity+ can support success of students and enhance institutional effectiveness.[71]

Developing clear university-wide policies around generative AI

Oxford University (UK) has taken a forward-looking and proactive approach to generative AI through its publication of guidance on the use of generative AI tools to support learning. These guidelines emphasise that generative AI should complement rather than substitute for human critical thinking and the development of evidence-based arguments and subject knowledge. There is guidance on the ethical use of tools, information on how to select the right tool, suggestions of prompts for academic writing and presentation skills, and ideas for how generative AI can support students' learning.[72]

Data-driven initiatives to address systemic inequity in educational outcomes

Georgia State University (USA) transformed its approach to student success by focusing on innovative solutions like AI-driven chatbots for admissions, creating freshman learning communities, and using predictive analytics to identify and support students at risk of dropping out. This proactive stance led to 3,500 more graduations per year for the 50,000-student university, with improvements weighted towards low income, black, Hispanic and Latino students. Higher student retention now generates an extra $80 million a year in revenue. The National Institute for Student Success at GSU also has a wide range of tools for other higher education institutions to improve student success.[73]

4.3
Creating inclusive learning environments

As universities welcome more diverse student cohorts, it is increasingly important to design inclusive learning environments that cater to a wide range of learning styles, abilities and capacities. This requires a whole-of-university approach that considers the needs of all students in all aspects of their student journey, not just for teaching and learning.

One method which has been proven to engage and include students and support institutional efficiency is Universal Design (UD). This emphasises and embeds inclusivity in all learning activities and processes, including in the development of instructional goals, assessments, methods, materials and learning environments. In doing so, universities lower barriers to learning for all students, not just those who traditionally have required individual support or adjustments. This requires intentionally building in flexibility for students, including for teaching and learning. Providing options for how students engage with the course content, access learning materials, and show their understanding and capabilities will allow all students to better engage with their studies. Options can be as simple as providing slides in advance of each class or eliminating timed assessments, both of which can remove barriers for students with additional needs.

UD equips universities to cater to a wide range of needs, and to do so in a sustainable way – when learning is inclusive by default, students have fewer requests for academic adjustments, learning support, and even mental health supports. It is a pro-active approach to managing and responding to student needs.

Examples of good practice

Placing Universal Design principles at the centre of education delivery

The University of Hawai'i at Mānoa (USA) employs Universal Design principles to cater to a diverse, non-traditional student body through its online teacher education programs. By addressing the unique needs of students from various backgrounds, including those with disabilities and adult learners, the university creates accessible and inclusive learning environments. Strategies include using asynchronous and synchronous technologies, offering multimodal content, and facilitating community and support. This approach shows a commitment to equity and inclusion, ensuring all students can succeed.[74]

Simplifying requirements through a block model for education delivery

Block teaching condenses traditional semester-long courses into consecutive blocks of learning. There are some well-established block models at universities – for example among liberal arts colleges in the United States and at some universities in Sweden – though the model has recently become more common around the world.[75]

De Montfort University (UK) has implemented a student-centred block model method for most of its undergraduate and postgraduate students. Under this model, students focus on one subject at a time with more regular assessments. The standard block structure allows students to study one block for seven consecutive weeks (totally two blocks per semester and four blocks per year). This aims to give students greater focus, provide a simplified timetable, and provide more regular assessment and feedback.[76]

It can be used alongside other preventative strategies for support student success, including:

- creating tailored learning pathways for those with additional needs, especially in the first year of a student's university education
- using adaptive learning for challenging units or subjects
- implementing early interventions to provide tailored and targeted support.

In short, universities can first make teaching and learning accessible to all and adopt targeted strategies to identify and support students who may have additional needs. Leading universities are advancing student success through data-driven programs and harnessing predictive analytics to identify risk factors and prioritise interventions. These and other initiatives proactively support diverse learning requirements and ensure that all students have the opportunities and resources necessary to succeed academically.

Inclusive learning environments require a whole-of-university approach that considers the needs of all students in all aspects of their student journey, not just for teaching and learning.

5

Investing in the core enablers of high-quality teaching and learning

It is an irony that many of the mechanisms put in place to support a high-quality educational offering often detract from teaching quality by creating additional work for academics, professional staff and even students. However, when the right systems, processes, supports and assets are put in place, there is significant opportunity to enhance the educational offering.

This chapter explores five ways that universities can improve teaching by investing in the core enablers of their education model:

5.1

Supporting teaching excellence: Universities can promote teaching excellence by building academic capability and releasing academic capacity for teaching.

5.2

Providing flexible academic workload models: Universities can trial flexible academic workforce models that play to academics' diverse strengths and provide incentives and recognition for diverse ways that they can enhance teaching and contribute to student development.

5.3

Clever use of physical assets: Universities can design, manage and use campuses and facilities to improve learning experiences and outcomes.

5.4

Rethinking the academic calendar: Rethinking the traditional academic calendar offers a way to better meet students' needs, enabling more flexible and accelerated degree completion options and improving student outcomes.

5.5

Governance and leadership for effective decision-making: Governance that typically comprises a mix of academic and professional staff and student representatives helps to entrench the decisions that work best for all. Adaptive leadership programs are useful to embed effective leadership across all levels and roles of a university.

5.1 Supporting teaching excellence

Academics should be supported and equipped with the tools and capabilities for teaching excellence. Through interviews with university leaders and survey of these leaders and academics with teaching responsibilities, two enablers have emerged as especially important.

Building teaching capability

Teaching well requires a broad range of skills beyond discipline-specific technical expertise. Many academics are deeply motivated to provide high-quality teaching, and many are good teachers, but this is not always the case. Just as proficient analysts do not necessarily make for good managers, so too good researchers do not necessarily make good teachers.[77] While the most capable university students are adept at autonomous learning with limited direction from their teachers, many students require more support, and increasingly so. Bringing to bear pedagogical expertise in the design and delivery of content can considerably improve learning outcomes. This is especially important for teaching student cohorts with more diverse learning needs and in teaching online without the benefits of face-to-face interaction.

Our survey of university leaders found that academics are, in general, better supported with some capabilities than others. For example, while a majority of leaders felt that academics at their university are very well supported or well supported with respect to pedagogical expertise, inclusive learning approaches and student-centred approaches, this figure dropped to 33 per cent for online delivery capabilities and 25 per cent for co-designing with industry (see Figure 14). This is corroborated by the finding (noted in Chapter 4) that university leaders cited limited faculty training or capability as the most significant barrier to increasing the quality or scale of online education at their university.

In general, academics with teaching responsibilities were less positive than leaders about their university's supports for high-quality teaching. In the staff survey, forty per cent of respondents reported feeling moderately, slightly, or not at all supported in terms of pedagogical expertise, 38 per cent for inclusive learning approaches, 43 per cent for online delivery, and 56 per cent for co-design with industry (see Figure 14).

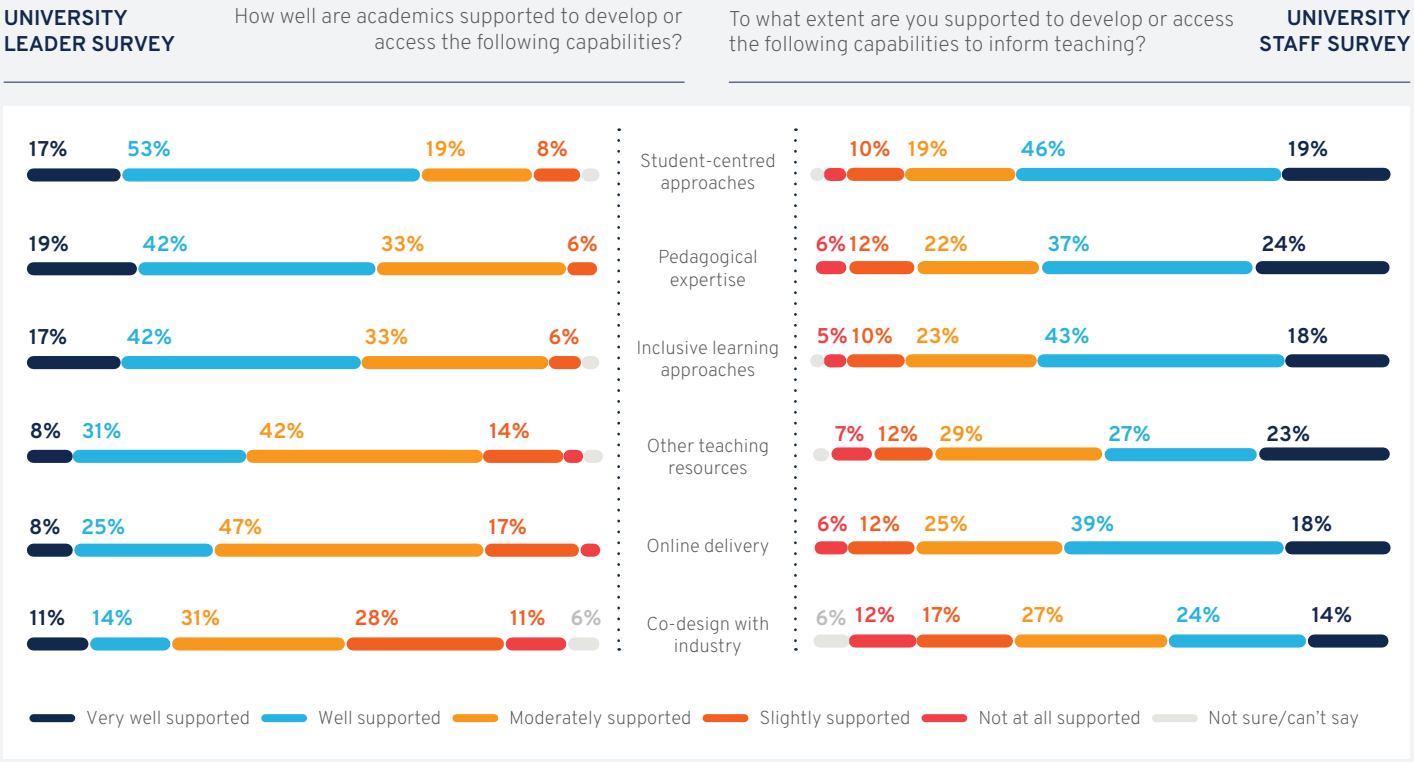
Universities can help academics to improve their teaching by providing:

- professional development opportunities to build teaching expertise, especially on how to use the latest insights from research into pedagogy in different learning environments
- access to ancillary capabilities (such as learning design and pedagogical expertise) in the design and delivery of educational content which provide 'wrap around supports' to teaching academics.

In addition, universities can better collect and use real-time student feedback to support more responsive teaching and a culture of continuous improvement. Many universities receive delayed and intermittent student feedback on teacher performance – such as at the end of a term or semester – which limits the ability for academics to adjust their teaching approaches to meet students' learning needs. For example, in our survey of academics with teaching roles, less than half (47 per cent) of respondents indicated that they receive useful feedback to improve their teaching to a large or very large extent. In this context, real-time feedback can be powerful tool to improve the quality of teaching and learning.

FIGURE 14

SUPPORT PROVIDED TO ACADEMICS FOR SKILLS RELATED TO TEACHING (LEADER AND ACADEMIC SURVEYS)



Examples of good practice

Building teaching capability and supporting innovative approaches to teaching

The University of Birmingham (UK) has established the Higher Education Futures Institute (HEFi) with a mission to support staff to deliver innovative and inclusive research-intensive teaching. The intention is to support staff alongside implementing university-wide initiatives around teaching and support learning. HEFi offers accredited training programs for staff including focused research, scholarships and development training. With an open access approach, HEFi also looks to facilitate shared learning between staff across the sector.[78]

The University of New South Wales (Australia) runs a range of professional development programs through its Academic Development team within the Pro-Vice Chancellor Education and Student Experience. This includes a Course Design Institute targeted at course convenors, a Beginning to Teach program primarily for early career researchers and higher degree research students, and a Teacher Accelerator Program for teaching staff new to the university.[79]

Improving teaching through near-real-time personalised feedback

Ziplet is a platform owned by Nous Group's education solutions business, NousCubane. It helps higher education institutions to measure, understand and improve student experience and teaching delivery by facilitating rapid and continuous feedback. It is used both within classrooms and other learning environments (to better understand and respond to student needs) and across institutions (to measure, understand and improve the student experience). It is used in over 150 countries by 10,000 educational institutions. For example:

At **Holmesglen**, one of Australia's largest tertiary-education institutions, the implementation of Ziplet in classrooms led to a 50 percentage-point increase in the provision of student feedback and reduced delays in teachers receiving feedback from over 40 days to less than one day. Better understanding and harnessing the student voice to improve teaching and learning has assisted in substantially improved student completions.

At Swinburne University (Australia) the introduction of Ziplet has helped to embed flexible, innovative teaching practices across the university and to support the transformation of teaching and learning.

Releasing academic capacity for teaching

A consistent theme reported by university leaders and academics engaged in this study is that burdensome administrative processes and systems are a barrier to high-quality teaching:

- Our survey of **university leaders** found that 'timetabling' and 'classroom and physical asset allocation' were consistently ranked as the two most significant administrative barriers that affect teaching quality. Many leaders also reported that managing student requests, such as for extensions or special consideration, can be a significant impost on academics' time.
- Our survey of **academics with teaching responsibilities** corroborates these findings. Around two-thirds of survey respondents reported that 'timetabling and/or scheduling classes', 'handling student requests' and 'balancing teaching and research commitments' were either a moderate or significant barrier for them in providing high-quality teaching to students. In addition, 79 per cent of respondents reported that 'limited time allocation for teaching commitments' was a moderate or significant barrier.

In this context, investing in efficient administrative processes can be, in the words of one university leader interviewed in this study, a "game changer" by releasing academic capacity for teaching. In addition to 'back end' improvements, teaching excellence can also be enabled by investing in what is sometimes referred to as a 'middle office' or in 'para-academic supports' that undertake activities like learning design, course management and student administration that have traditionally often been undertaken by academics. In some cases, technology-enabled solutions are also being deployed, for example AI-powered chatbots that handle and respond to more simple student requests.

Examples of good practice

Benchmarking performance to enable evidence-led administrative transformation

UniForum, developed and administered by NousCubane, is a multi-year program that provides benchmarking and practice-sharing capabilities across universities. UniForum leverages the diversity in scale, research intensity and disciplinary mix of its members to support university leaders and professional services teams to enhance the efficiency and effectiveness of university administration.

Uniforum was used by the **University of Exeter** (UK) to guide a significant organisational transformation aligned with its forward-looking 2030 strategy. This benchmarking initiative provided crucial intelligence that facilitated a data-driven, transparent restructuring process, converting from six colleges to three streamlined faculties and reconfiguring administrative services. This rapid transformation, completed in just nine months, was supported by broad stakeholder engagement, ensuring alignment with academic goals and enhancing operational efficiency across the university.

Investing in a 'middle office' to release academic capacity for teaching

The University of Edinburgh (UK) has invested in a new cohort of student advisers to enhance the academic support infrastructure, allowing faculty members to focus more effectively on teaching and research. Each student at Edinburgh is assigned a student adviser who serves as the first point of contact for any degree-related queries and personal or academic challenges. These advisers help manage course choices, facilitate the understanding of coursework and examination results, and provide crucial support during personal crises that might affect academic performance. Advisers alleviate the administrative burden on academic staff, enabling them to dedicate more energy towards direct educational activities and content delivery. They also ensure that students receive timely and personalised support, enhancing both student satisfaction and academic outcomes.

Using AI-powered tools to reduce demands on academics' time

Georgia Institute of Technology (USA) was an early adopter of an AI-powered virtual teaching assistants. Since 2016, the university has used a virtual teaching assistant called 'Jill Watson' to respond to students' messages and requests on an online message board. Automation of answers to common and simple requests has helped to up human teaching assistants to do more meaningful work.[80]

Releasing academic capacity by improving timetabling

The University of Liverpool (UK) successfully improved its timetabling service through a new resourcing model (consisting of a dedicated university-wide timetabling unit which maintains strong links to faculties), significant system enhancement, better reporting and data to inform decision-making and improved personalisation. UniForum Service Effectiveness data shows significant improvements to process efficiency/effectiveness, confidence in staff capabilities and understanding and responsiveness of support. Engaging academics effectively – and showing benefits to faculties and academics as quickly as possible – was critical in this transformation.[82]

5.2
Providing flexible academic workload models

Many universities have prescribed academic workforce models – both across all activities that academics undertake (such as the 40:40:20 division between teaching, research, and administration or service in Australia) and within an academic's teaching load (such as a 'class load' that stipulates the number of classes taught per semester). There are strengths to these workload models; for example, they are transparent, reduce conflict and maximise perceptions of fairness.

But within a dynamic education system with significant potential for innovation, these models can have unintended consequences. They may not be tailored to the distinct strengths of individual academics (such as those who excel in teaching). They may not provide a holistic way to evaluate the value that academics bring to teaching and student development – a professor that is a fantastic mentor receives no explicit credit for this under the 'class load' model.[82] And they may not provide flexibility to adjust over time, such as if an academic obtains grant funding and needs to dedicate more time to research for a specific period.

Throughout this study we heard from many university leaders and academics that current workload models can be a barrier to teaching excellence. For instance:

- Nearly two-thirds of university leaders surveyed (61 per cent) agreed or strongly agreed that "A more flexible academic workforce model would help to improve the quality of teaching at my university."
- Nearly two-thirds of teaching academics surveyed (61 per cent) reported that "Rigid academic workforce models" presented a barrier to providing high quality teaching to students. This was most evident in Australia and Canada (66 per cent) though it also presented a barrier for half of UK academics surveyed.

A further challenge, one that is particularly acute in research-intensive universities, is that teaching often is subordinated to research for reputational, cultural and financial reasons. As Professor Ronald Barnett writes in The Philosophy of Higher Education: "From the mid-twentieth century, teaching in higher education came to play second fiddle to research" (2019: 109).

In this context, universities and departments can adopt workforce models that do not disband traditional allocation of time across different activities, but nonetheless support greater flexibility and reflect a broader understanding of the way that academics can add value through their roles.

In addition, a greater emphasis on teaching-only positions can help to cultivate teaching expertise, play to academics' diverse strengths, and mitigate against the deprioritisation of teaching excellence in research-intensive institutions. Teaching-only academic positions are becoming increasingly common across Australia, the UK and Canada.[83] Universities can harness teaching expertise by creating prestigious opportunities for teaching-focussed academic careers. Across this study, we heard that it remains a challenge to ensure that teaching-focussed academics remain sufficiently connected to research to ensure that teaching materials do not lose relevance with the field. Even in this context, universities can promote connections between teaching and research, such as through research groups and informal collaborations.

Examples of good practice

Adopting a flexible, principle-led approach to academic workloads

The Aeronautics and Astronautics faculty at the Massachusetts Institute of Technology (USA) balances research and teaching tensions by implementing clear norms and expectations for faculty roles and emphasising a balanced contribution to research, teaching, and service, with transparency and accountability in annual reviews to recognise individual strengths and exceptional service.

For example, mentoring of students is recognised as part of teaching, and exceptional service is formally recognised in a variety of ways. The workload model aims for equitable workload conditions and is underpinned by six principles: transparency; clarity; credit; norms; context; and accountability.[84]

Building teaching-focussed academic career pathways

The Sydney Horizon Educators Scheme led by the University of Sydney (Australia) offers a clear education-focused academic career pathway to recognise and support talented university educators. The scheme provides access to a range of professional development opportunities and grants to support educational innovation.[85]

Examples of good practice

Conscious design of spaces to facilitate teaching and learning outcomes and experience.

The Learning and Teaching Building at Monash University (Australia) features several innovative spaces to enhance the learning experience. It includes rooms with 360-degree whiteboard walls and strategically placed teaching stations to promote interaction and multiple learning modes. The central map table encourages collaborative work and demonstrations. The building also emphasises accessibility, with carefully considered room sizes, table shapes and charging facilities, accommodating thousands of students and supporting diverse, active learning pursuits.[87]

The University of Toronto (Canada) is currently building Canada's largest urban geo-exchange system on its St. George Campus. The King's College Circle Geothermal Project provides a way to reduce greenhouse gas emissions while also supporting the university's research in geothermal energy generation. It will be integrated with pedagogy by giving students opportunities for experiential learning.[88]

The 'Design and Innovation Building' at the University of California, San Diego (USA) is designed to promote interdisciplinary collaboration. It houses various programs, including engineering, design and entrepreneurship. It features flexible studios, maker spaces and meeting areas to encourage cross-disciplinary interactions.[89]

Nottingham Trent University (UK) has developed learning spaces design guidelines to standardise teaching spaces across its campuses. Developed collaboratively with university stakeholders, these guidelines ensure consistent learning environments that support flexible and accessible educational experiences. The initiative, part of a broader infrastructure improvement project, has led to significant upgrades to enhance teaching facilities in line with modern educational needs.

5.3 Clever use of physical assets

Physical interaction is often an important factor to enable deep learning.[86] Online learning, though it has potential to be a more meaningful and fulfilling experience for universities, has yet to replace the richness and impact from in-person engagement. In this context, universities' campuses and facilities have an important role to play in promoting high-quality teaching. In our survey of academics with teaching responsibilities, almost two-thirds (64 per cent) of respondents reported that "Physical infrastructure, technology, equipment and other resources" is a barrier to providing high-quality teaching, and 20 per cent of respondents reported that it is a major barrier.

Universities can ensure that campus and facility design is informed by teaching and learning experiences and outcomes in a variety of ways. This includes:

- Better utilising assets through a range of strategies, including mapping utilisation to optimise space for teaching and learning (such as by teaching intensives over weekends or providing flexibility through evening classes), repurposing existing space for new offers and co-locating with industry for project-based learning.
- Developing spaces that foster interdisciplinary collaboration and innovation, flexible learning spaces and experiential labs that can be easily adapted to different teaching and learning styles. For example, flat floor spaces can enable varied configurations that support diverse educational activities.
- Designing campuses that foster a close connection to local communities and industry. This ensures that learning environments are both inclusive and contextually relevant.

5.4 Rethinking the academic calendar

The traditional academic calendar – usually designed around semesters, terms, or quarters – often does not align with the diverse needs of students. For example, many students increasingly study while juggling work and family commitments. Students are also seeking more accelerated or flexible learning paths to complete their degrees. For example, when students were asked about their ideal university experience, the second most common category of answer was "Duration and time commitment". Yet, more than 70 per cent of students found that the academic calendar at their university was a barrier to the timely completion of their studies. Over one-third (36 per cent) reported it as a barrier to a large extent or very large extent.

Providing education outside of the traditional academic calendar is challenging for a range of reasons. It involves significant administrative effort and requires a shift in how academic workloads, enrolment systems and student supports are managed to ensure students remain engaged. In addition,

operational considerations – such as aligning subject offerings with demand, adjusting placement schedules, and redesigning course or program content around different delivery timeframes – are essential for a smooth transition. Funding arrangements and regulatory systems can also present barriers to innovation.

Nonetheless, some universities have overcome challenges associated with the traditional academic calendar through flexible study modes, offering short-term intensive courses throughout the year, and utilising asynchronous learning to allow students to learn at their own pace. Responsive communication and adaptable assessment can help to ensure that the quality of education delivery and student supports is not compromised by non-traditional delivery timeframes.

5.5 Governance and leadership for effective decision-making

Universities increasingly operate as dynamic organisations, adopting both centralised and devolved structures. In some universities, their faculties, schools and academic centres are essentially run as distinct entities, with their own balance sheets and corporate arrangements. Other universities have a more centralised or hub-and-spoke model. Whatever the structure, effective governance, leadership and agreed ways of working are critical to secure agreement and collaboration between and within academic groups and professional staff.

Institutional governance and stewardship that comprises experienced operators

As the complexity and operational challenges for universities have increased, there has been growing recognition that university governance bodies (boards, senates and academic councils) need to have a broad range of skills, expertise and viewpoints. Across the UK, Canada and Australia, these bodies tend to comprise a mix of government representatives, industry spokespersons, and unions. This composition provides for a holistic purview of the university remit. At the same time, it is important to ensure that an intimate understanding and appreciation of the unique operating context of the academy is maintained, recognising concerns in some jurisdictions about the 'corporatisation' of university governance bodies. When it comes to effectively managing the core business of a university – its educational offerings – representation from leaders from other universities can be of significant benefit. For example, ex vice-chancellors, presidents and provosts can offer no-holds-barred advice based on their own triumphs and failings.

Clear governance to make decisions and stick to them

The driving forces behind educational offerings demand a more responsive approach to what universities offer to whom and when. Academics hold the expertise in curriculum content and pedagogy. Professional or corporate staff bring operational effectiveness and practices to support viability. Both groups arguably bring strategic thinking – but to serve the interests of students, staff and the university as a whole, explicit governance arrangements are needed to make decisions, escalate priorities, respond to urgent matters and settle disputes. Without explicit governance arrangements, the most well-founded changes to portfolios, curriculum content, pedagogy and delivery modes can fail to be effectively implemented. Conversely, governance that is clear and well structured, comprising academics and corporate staff (and students where it makes sense to) can have remarkable impact on implementation of complex changes or just to support highly effective teaching and learning.

Examples of good practice

Implementing flexible academic calendars to improve flexibility and choice

University of Southern Queensland (Australia) is introducing a flexible academic calendar that is designed to meet the evolving needs of students and staff, offering a modern, multi-layered approach to course and program delivery. Starting in January 2023 and fully transitioning by January 2025, the calendar introduces trimesters, blocks, intensives, combinations and year-long options, all aligned within a single January to December calendar year. This phased implementation aims to provide greater flexibility and choice, accommodating diverse learning preferences and schedules.[90]

Enhancing choice by enabling students to 'start anytime'

Deakin University (Australia) has a Start Anytime learning structure that allows students to begin certain units at any point throughout the year and complete it online at their own pace. In addition, Deakin's stackable short courses allow students flexibility to study a range of units that can be stacked together as credit towards a postgraduate degree.[91]

Leadership embedded in practice

Leadership, and adaptive leadership practice in particular, is increasingly sought out by university leaders across the UK, Canada and Australia.[92] The multi-faceted and ever-evolving nature of teaching and learning requires resilience and an ability to adapt to this evolution, or indeed to effectively challenge a change where it makes sense to. In addition, universities increasingly expect academics and professional staff to work collaboratively, each respecting the other's expertise, to make and carry out decisions about teaching and learning. This arguable dissolution of hierarchy also requires adaptive leadership in practice – to make decisions in the best interests of students and universities as a whole. Such leadership practice is in part intuitive for some, but it largely needs to be embedded for the majority of leaders.

Examples of good practice

Clear governance to support equitable and effective use of laboratory services

A faculty of engineering in a large Australian university has developed a new governance approach and structure that helps researchers and students to access laboratories, technical support and other services more equitably, efficiently and effectively. The structure comprises both academic and professional staff, and it has a hierarchy of decision-making and escalation. Prior to this arrangement, decisions (about who could use a lab and for what purpose), were made ad hoc and with limited strategic purview. This meant that students who benefited from lab access for work-integrated learning and project-based learning may have taken a backseat to research endeavour. The new governance arrangement considers both the strategic imperatives of research, and teaching and learning, to enable swift and fair decisions about lab use.

Leadership development drives new strategic direction

A large Australian university has built a leadership development program for senior executives, recognising highly effective leadership as a key driver of achieving its new strategic direction. This included:

- a 360-degree assessment process which helped to identify shared development needs
- a new leadership terms of reference to provide clarity about roles and responsibilities
- a practical program focussed on applying executive leadership behaviours to business challenges.

The leadership development program is being cascaded to the broader senior leadership team to drive a shared understanding of success across the university's leadership, and to build connections and improve collaboration.

Concluding remarks

Throughout our study into the future of universities' educational offerings, we consistently heard that universities face challenges in maintaining and enhancing the quality of teaching and learning. Most of these challenges are not new. Nevertheless, many universities are at an inflection point, a period in which evolutionary forces at universities seem to be accelerating given broad demographic, social, technological and economic trends. The many, and at times competing, pressures from governments, industry, students and communities create a range of strategic challenges. Navigating them requires a deft balance between tradition and innovation. Change for change's sake is inadvisable; so is standing still.

In this context, a clear understanding of and commitment to a university's academic and social mission – underpinned by a deep understanding of the diverse and changing needs of students – is critical to guide reform. There is no one-size-fits-all answer – the path to a distinct, sustainable and authentic educational offering will look different for each university.

Strategic priorities vary considerably. For some universities, investing in enablers of high-quality teaching will be the number one priority. For others, making online education a meaningful experience for students will be the most impactful way to enhance learning. For others still, developing partnerships and processes to support agile curriculum development and forging greater connections with industry will reinforce the value that they provide in preparing students for a rapidly changing world of work. Regardless, it is critical for university leaders to be clear about which components of their education model should be prioritised to have the greatest impact on teaching and learning experiences and outcomes.

Across this study, university leaders and staff have also consistently cautioned against overly top-down approaches to refining or reforming their educational offerings. Academic freedom and autonomy are core virtues of universities – this includes informing what and how to teach. Moreover, best practices in teaching are often highly specific to particular disciplines and fields of study, so empowering academics is more effective than commanding them. Yet there are many things that universities can do to enable and encourage teaching excellence. A resolute commitment to openness, transparency and meaningful engagement can be immensely effective in driving change.

Universities have displayed tremendous institutional resilience over many centuries – the fact that they remain the core institution that societies rely on to generate and impart knowledge is testament to this. As the great challenges facing societies become more global and complex in nature, universities and the education they provide to students are more important than ever. High-quality teaching and learning are critical ways that universities continue to show the enormous value they have for individuals, communities and the world.

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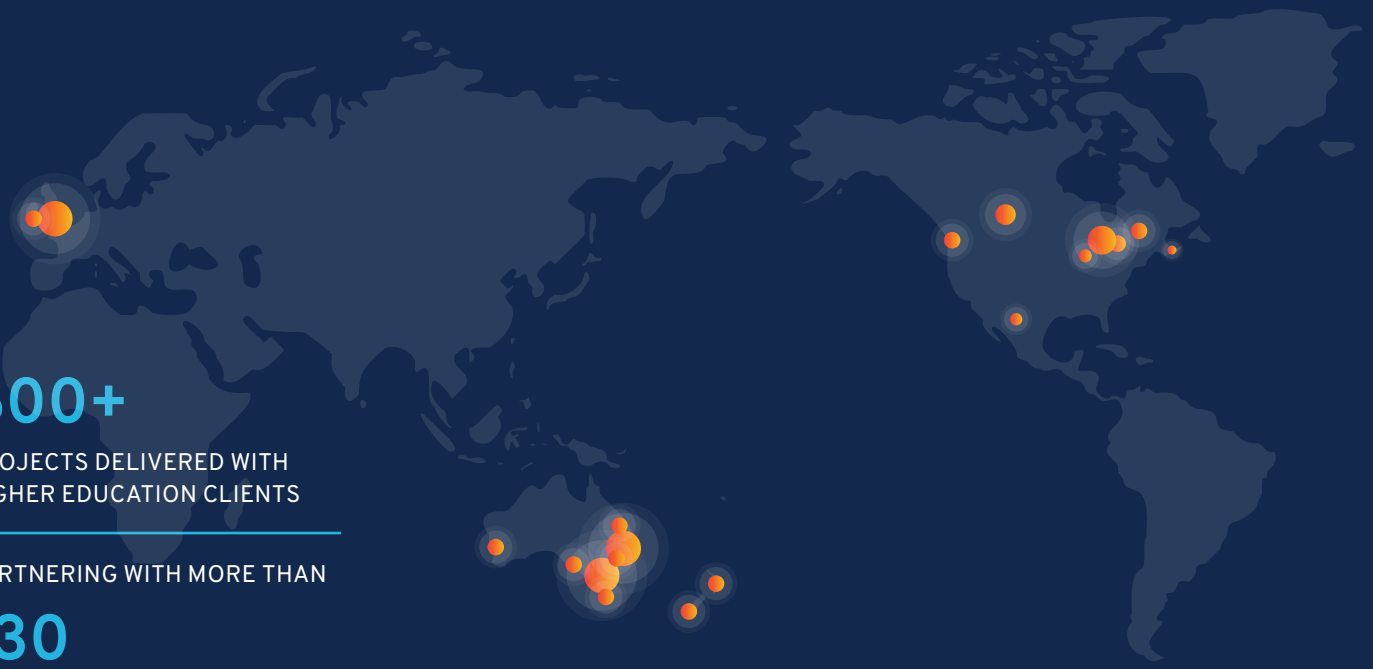

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