



Australian Government

Department of Education and Training

Innovative Approaches for Enhancing the 21st Century Student Experience

Final Report 2016

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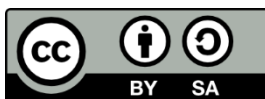
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<http://melbourne-cshe.unimelb.edu.au/research/experience/innovative-perspectives>



Support for the production of this report has been provided by the Australian Government Department of Education and Training. The views expressed in this report do not necessarily reflect the views of the Australian Government Department of Education and Training.



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2017

ISBN 978-1-76051-133-3 [PRINT]
ISBN 978-1-76051-134-0 [PDF]
ISBN 978-1-76051-135-7 [DOCX]

Acknowledgements

The Project Director Hamish Coates acknowledges the contribution of project team members: Paula Kelly (Researcher, 2016 Manager), Vic Borden (Expert), Linda Corrin (Researcher), Jason Lodge (Researcher), Phil Long (Expert), Marian Mahat (2015 Manager), Kelly Matthews (Expert), Sid Nair (Expert), Ryan Naylor (Researcher), Damian Powell (Expert), David Wilkinson (Expert) and Helen Zimmerman (Expert).

The team extends its thanks to representatives at the 31 Australian tertiary institutions who participated in the project fieldwork. In addition, thanks to another 200-plus colleagues from over 50 Australian and international institutions and agencies involved in consultations and workshops.

The Australian Government Office for Learning and Teaching (OLT) funded this work and provided support throughout the project. Particular thanks to Victoria Ross, Paul Corcoran and Di Weddell.

We are deeply grateful to the 44 students who participated in interviews.

The Project Reference Group provided invaluable support and advice. We thank Lori Beslow (MIT), George Brown (International College of Hotel Management), Malcolm Brown (EDUCAUSE), Simon Buckingham Shum (University of Technology Sydney), Thomson Ch'ng (Council of International Students Australia), Al Essa (McGraw-Hill Education), Darrell Evans (Monash University), Dominic Orr (FiBS) and Philippa Pattison (University of Sydney).

Grace Lynch (RMIT University) provided helpful advice as the Project Evaluator.

During the project, team members were advised by hundreds of national and international experts.

Executive summary

Everyone engaged in higher education wants students to succeed. Higher education transforms people's lives, creates the professional workforce, helps people engage as citizens and generates new knowledge and skills. A successful higher education experience yields important returns to many people and communities.

Yet Australia's grand work in this field is vexed and at risk of stalling. Entrenched rituals for garnering evidence on the student experience are yielding diminishing returns. Dated myths are used to identify who students are and how they experience higher education. People lack data to help plan the really meaningful experiences which flowed serendipitously in smaller and more regulated systems.

To step ahead, this project aimed to bring about sustainable strategic change through improving institutional capacity to enhance the 21st century student experience. It sought to build new concepts for understanding Australia's higher education students, identify new data sources and approaches for measuring the student experience and engage institutions in enhancement work and new conversations about students.

The project has distilled an innovative architecture to guide future leadership of student success in higher education. Working from research on contemporary thinking and practice, it has advanced new qualities and profiles for understanding the undergraduate student experience, explored expanded data sources and analytical approaches and laid foundations for leading institutional and system-wide reform. More broadly, the project has raised awareness of student identities and expectations, evoked different conceptions and dialogues about students, created more effective means for monitoring and enhancing education and set foundations for substantial further development.

The project clarified the following three specific initiatives which would do much to advance higher education:

1. Institutional Reshaping—reframing institutions around student success;
2. Student Advisory—creating a platform for activating successful experiences; and
3. Student Agency—establishing an agency for student success.

These initiatives spring from insights structured by four leadership resources produced in this project:

1. Enhancement Framework (EF)—which through a stepwise architecture helps institutions envision new arrangements and create cultures and conditions for student success;
2. Nine Qualities Model (9Q)—which distinguishes qualities that define a successful student experience, and can be used to marshal evidence to articulate student profiles and journeys;
3. Data Experience Leadership Model (D+E+L)—which conveys the need for joined-up data-driven leadership to help students succeed; and
4. Institution Maturity Matrix (IMM)—which institutions can deploy to diagnose the maturity and change-readiness of their institution research, their leadership of the student experience and their perspectives on student success.

Combined, these leadership resources provide a Leadership Architecture (LA) for enhancing the 21st century student experience that defines success and clarifies strategies for development. Positioned within the overarching frame of the Enhancement Framework, the logic, in a nutshell, is that achieving success in terms of any or all of the nine qualities comes from joining data with experiences with leadership. The IMM provides the tool to diagnose and advance practice.

The project furnished a host of insights into contemporary data, leadership and the student experience through:

- Nine published project reports and documents;
- 40 invited plenary and keynote presentations in around 15 countries;
- Five workshops in five Australian States and Territories;
- 11 scholarly publications, including seven refereed journal papers, three chapters in internationally published books, and one sole-authored book; and
- Three op-eds in the national press and a variety of other commentary.

These contributions flowed from a three-phase project approach that involved:

- Phase 1: Development
 - Forming an expert team and advisory group.
 - Framing consultations with around 50 higher education experts, leaders and staff and other stakeholders.
 - Producing a background research report and materials including instruments for fieldwork.
- Phase 2: Validation
 - Procuring insights from 31 higher education institutions which participated in national fieldwork.
 - Collecting insights from 30-minute interviews with 44 undergraduate students, sampled from a range of institutions.
 - Developing and consulting on models to define student success.
- Phase 2: Engagement
 - Developing a framework to assist institutions enhance practice.
 - Consulting through a series of workshops nationally with around 200 stakeholders and experts.
 - Finalising project documentation and reports.

These initiatives and resources are documented in a suite of reports, workshops, papers and resources. Through these contributions, the project has sought to ferment formative dialogue regarding the data and leadership required to help each student succeed, and to conduct scoping work to clarify what infrastructure must be developed. Project outcomes provide foundations and seeds for future development.

Along with a series of project materials, the following documents are published alongside this final report:

- Enhancement Framework for the Student Experience (Borden, Coates, Kelly & Zilvinskis, 2016);
- Models and Case Studies: Data-driven leadership of student success (Kelly, Coates & Borden, 2016);
- New Anthropology for Higher Education: Background research report (Coates, Kelly & Naylor, 2015a);
- New Perspectives on the Student Experience (Coates, Kelly & Naylor, 2016); and
- Student Success Leadership Resources (Coates, Kelly, Borden, Naylor & Zilvinskis, 2016).

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1. Valuing each student's success

Valuing each successful experience

At least once, people should ask what value higher education might add to their life. People should consider—often in conversation with family or friends—how higher education could enlighten them, make them a more able professional, or a better citizen. In advanced societies like Australia, it is expected that such questioning is almost ubiquitous—that the vast majority of people should make such inquiry.

Unfortunately, it is also almost universally clear that hardly anyone has access to the kind of good-quality information needed to inform such discovery and decision making. It is unclear where helpful information can be easily sourced, who governs such advice and how higher education institutions can use data to improve. The problem endures for those who engage in higher education as they bump through bureaucracies, sit lonely in crowded lectures and seek personalised insight from teachers and institutions to help them succeed.

Information abounds, of course, but is of varying quality and relevance and can be difficult for even experts to decode, let alone exploit to articulate a transformative higher education experience. Typically, data has a 'supplier-centric' tinge to it, providing results from a distinct data collection on an institution's past, rather than advice as to how different parts of that institution might help an individual's future. What is needed is an effective means for conveying to each person what a successful higher education experience looks like, which is what the project that underpins this report sought to achieve.

This state of play creates several problems. Most particularly, individuals are unable to inform, let alone optimise, how they might invest in higher education. As well, the people and institutions that provide higher education are unable to communicate the value of what they do. Society overall can fail to recognise the value of the higher education system, with consequences for constrained government funding, reduced community perceptions of value and attenuated engagement with other industries and businesses. The lack of good information, particularly given the complexities of higher education, creates problems and potentially failure. The situation gets more serious in light of transformations shaping so many facets of higher education, like regulation, markets, staffing, students, institutions and governments.

Surely everyone engaged in higher education wants students to have an intellectually engaging and personally fulfilling experience. Yet higher education today is a huge venture and really meaningful experiences that once flowed serendipitously must now be programmed explicitly into broad education designs. In a small-scale community, students and teachers will tend to naturally interact. However, in today's very large tertiary institutions, which are deploying increasingly distributed forms of education, it can even be hard to know when students are flat-lining. Higher education in Australia is shifting from a highly regulated and supply-driven system to a more market-driven venture that must be increasingly sensitive to the needs of students. We must continue to explore new approaches for helping each student succeed.

A successful experience is core

Ensuring that every eligible person has a successful experience is critical to the future of higher education. Australia has made world-leading progress over the last three decades to define the student experience, collect various forms of data and report insights to various stakeholders in increasingly sophisticated ways (Ramsden, 1991; Griffin, Coates, McInnis & James, 2003; Coates, 2006, 2009; Coates, Tilbrook, Guthrie & Bryant, 2006; Radloff, Coates, James and Krause, 2012). Yet much of this work rests on generation-old and suboptimal approaches to identifying people, to gathering insights and to helping students succeed. More contemporary perspectives are needed, particularly given little has been done to rigorously define what constitutes a successful student experience.

This project has striven to provoke a step-change in how we think about and lead higher education student success. It sought to distil an innovative architecture to guide future leadership of student success in higher education. Working from detailed and ongoing research of contemporary thinking and practice, it has advanced new qualities and profiles for understanding the undergraduate student experience, explored expanded data sources and analytical approaches and laid foundations for leading reform. It has sought to raise awareness of student identities and expectations, evoke different conceptions and dialogues about students, create more effective means for monitoring and enhancing education and set foundations for substantial further development.

The new perspectives are prompted by critical constraints challenging current circumstances. While each student's experience is essentially highly individual in nature, prevailing myths and institutional norms fixate on crude group-level generalisations. Higher education lags compared with other service sectors, stuck in batch-like mindsets that undervalue the agency and potential of core participants (Higher Education Commission, 2016). As teased apart below, the basic concepts that sustain much current theorisation and practice are based on reified views on who students are. Stereotypes can bear little relation to the identity or aspirations of prospective or current students. The dominant survey methods used to study student engagement have waning utility. Student survey response rates are low and shrinking, variance explained is small and more effective electronic footprints seem available (Siemens, Dawson & Lynch, 2013; Sclater, Peasgood & Mullan, 2016). While most work on this front is framed within the context of institutions and fields, higher education is increasingly trans-disciplinary and trans-institutional in nature. There is a need to break through bureaucratically entrenched barriers and look instead through the eyes of the student (Nahai & Osterberg, 2012). There are practical problems. Institutions and stakeholders are increasingly unresponsive to results from student surveys, which in many instances are detached from lived practice, increasingly used for external purposes and reinforce approaches convenient to institutions rather than serving students (Ladd, Reynolds & Selingo, 2014). As a result of these and other muddles, we seriously lack insights into just who students are, how people approach higher education, the ways in which they learn and how people change as they progress.

This state of play provokes myriad uncertainties and questions. What are students seeking to achieve? How can we move beyond the suite of popular but limiting constructs on teaching, retention, experience and engagement to look instead at student profiles, types

and segments? What data exists or could be used to better understand students? How can technical analysis explain more variation in the experience, particularly at the individual level? How can we get information on each and every student, not just the one-fifth who respond to surveys? How can we explain more than a fraction of the variation in students' experience? What steps can be taken to improve leadership of the student experience? What are effective means for conceptualising the success of programs and institutions? How can institutions better manage their experiences as they progress through study? How can institutions move beyond conceptualising students as a source of data? Most broadly, what can be done to link concepts, techniques and practices to forge more evidence-driven and cogent leadership of the future student experience? These are deep and broad, yet basic, questions that require us to better understand how an increasing number and range of individuals approach higher education, students' identities and expectations, and how institutions can manage and enhance the 21st century student experience. This fresh work will help sustain Australia's leadership in this area, with benefits for the sector, institutions and individuals.

This project was designed to address such challenges, uncertainties and questions. It aimed to prompt sustainable strategic change through improving institutional capacity to enhance the student experience by building new concepts for understanding students, identifying new data sources and approaches and engaging institutions in leading enhancement work. By blending earlier work on students with more contemporary perspectives, the study validated new concepts and new methods for helping institutions lead the student experience. Conceptually, it investigated who students are and what they expect from higher education—inquiry that goes beyond stereotypes, generalities and assumptions about demography and contexts. Methodologically, the study proposed new approaches to measure and report on these new constructs and profiles by helping institutions leverage under-utilised existing data for quality enhancement.

Framing this report

This document is the final report of a project delivered to stimulate new thinking and build sustainable approaches for enhancing each student's experience. The report has been drafted to provoke reflection and discussion about the nature of data-informed leadership that can best help students succeed. Considered from the perspective of the macro-level change that it seeks to provoke, the report seeks to spark formative dialogue about the student experience that may in time provoke new infrastructure development and discourse that can spur and accelerate improvement. In a more concrete sense, the report presents outcomes of detailed project planning and background research, and validation involving wide-scale consultation with individuals and institutions, both nationally and internationally.

The report continues in four sections. Section 2 reveals current institution and student settings on success, data and leadership. These insights frame the presentation of the Nine Qualities Model in Section 3. This provides foundations for reviewing opportunities to lead individual journeys in Section 4. Section 5 charts three initiatives to propel future work, and Section 6 offers a brief summary.

This report has been drafted for a broad audience. It is not intended as a highly referenced research review nor as a final summative ‘solution’. Rest assured, however, that the observations that follow bring together substantial expertise, reviews of scholarly and applied literature and substantial investigation and consultation. Appendix B details the innovation approach. Attachment 1 includes several resources that detail the underpinning research.

The innovation sought in this project is not always straightforward to initiate, progress or achieve. Making desired progress involves battling myths and rituals entrenched in people’s roles and in institutional processes and systems. It requires engaging institutions in fieldwork and working through commercial considerations. It requires careful identification of collaborative opportunities that stimulate sufficient involvement to invoke momentum and progress. Large-scale change in leadership and practice takes time, ranging from months with early adopters to anything up to a decade for national reform. Hence, it is essential to garner capabilities essential to the successful rejuvenation of faltering systemic and institutional arrangements. These capabilities include a team with the experience, prescience and imagination to create, networks that afford reconnaissance and consultation and a zeitgeist that prompts desire for and engagement in novel initiatives.

It is important to flag limitations of the study and this report. Practically, the study has sought to prompt new dialogue about student success that advances higher education over the next decade and beyond—an ambitious agenda that, to succeed, must navigate a range of uncertainties and change-blockers. Technically, the project sought to validate concepts rather than prove the feasibility of implementation, which must be tackled in future work. Substantively, the study has been guided mostly by English-speaking work and networks—an important caveat given the substantial growth of higher education in non-Anglophone settings. Fieldwork for the study was conducted in Australia in 2015 and 2016 with a sample of institutions and students. Consultation and dissemination work has confirmed that the ideas have broader international traction, but such generalisation should proceed with caution. The study focused on institutions and students as the primary units of analysis. This has been appropriate for building the ideas but, of course, ignores many of the nuances that are fundamental to higher education, such as disciplines, small business units and perspectives of staff. Such limitations bound the current study and also frame work that lies ahead, namely examination of the feasibility of various options for implementation.

2. The apparent state of play

Overview

Motivated by these broad rationales, an investigation of contemporary ideas and practices was launched. This section begins by reviewing the approach to this investigation, then highlights insights into contemporary practice.

Formative research and consultation

This investigation was framed by deconstructing the ‘student experience’ into four topics: student identity, student success, data sources and change leadership. Teams were formed to investigate each of these topics by reviewing a wide range of research and consulting with more than 50 experts. These investigations helped to articulate a model of student success, to clarify more effective ways for understanding each individual’s identity, to flesh out effective strategies for analysing and interpreting huge volumes of data on activity and performance, and to unpack the attributes of academic leadership required to help people succeed. This background research clarified the study’s broad design. In essence, the project posits that education data underpin a better understanding of students and their experience, which in turn spurs student success. Each of these areas, and particularly their intersection, is coherently integrated by distributed academic leadership. This work was compiled in an interim report (Coates, Kelly & Naylor, 2015a; see Attachment 1).

National fieldwork

The background research furnished important conceptual and practical clarification of the contemporary student experience. It also helped finalise fieldwork plans (Coates, Kelly & Naylor, 2015b; see Attachment 1). Through the fieldwork, we assessed contemporary approaches to understanding the successful student experience. We tested our motivating conceptual frames and designed new insights and approaches.

The project sampled institutions, then students. All 41 Australian universities and 94 other higher education providers were invited to participate in fieldwork. Thirty-five institutions signalled participation but four dropped out prior to submitting data. A total of 31 institutions returned an inventory. These institutions ranged across provider types (18 universities, 13 other higher education institutions), states and territories (eight in Queensland, eight in New South Wales, seven in Victoria, four in Western Australia, two in South Australia, two in the Australian Capital Territory), and included diverse student mixes. Site visits and interviews were conducted at six institutions which, according to the project team’s analysis, were situated at different points along a spectrum of practice. All 31 participating institutions were asked to recruit undergraduate students for interview. Semi-structured interviews were conducted with a total of 44 students from metropolitan and regional universities, as well as small- to mid-size private institutions and pathway providers. Participating students represented a wide range of ages, diverse fields of education and cultural backgrounds.

Two instruments—a student interview schedule and an institutional inventory—were developed from the study design to yield information about the nature of student success, the identity and experiences of today’s students, the nature and use of information available to institutions regarding student success and what leadership practices are needed to improve. Appendix C presents the instruments. Both instruments were open-ended and qualitative given the nature of the phenomenon under study, the project aim and maturity of the research and practice.

The empirical work in this study sought to probe current concepts of the student experience and shape new ones rather than yield any kind of sector-wide 'baseline data'. Even so, a reasonably large number of institutions contributed insights, offering modest generalisability. Initially, information from institutions and students was used to document and describe current practice across the sector. In terms of student identity, student success and the accessibility of relevant data sources, with further analysis it was feasible to locate institutions along a developmental spectrum according to whether practice was shared, differentiated, emerging or aspirational. With respect to leadership, consideration was given to the importance of several attributes for improving student success, understanding students and improving data.

Insights into success, identity, data and leadership

As a pathway into reconstructing the student experience, an assessment was made of each institution's maturity in articulating student success, the identity and experiences of today's students, the nature and use of information available to institutions and what kind of change leadership is needed to improve. A developmentally nuanced interpretative frame (Figure 1) was constructed to structure analysis of data gathered.

Phase	Student success	Student identity	Information use	Change leadership
Strategic	The institution describes multiple aspects of success, incorporating a broad range of perspectives from students and other stakeholders, including broader communities.	Many aspects of student experience, including academic and broader experiences, are considered vital to understanding students and data is sourced accordingly.	Data collection reflects broad-ranging information, including personal, educational and cultural background, current studies, co-curricular activity, aspirations and post-graduate activity. Diverse data sources, including student-supplied and synchronous-trace data, are integrated dynamically.	Sophisticated analysis capabilities provide quantitative and qualitative data from all sources in user-friendly forms, including personalised student-facing information for immediate use. The analysis produces new insights to guide enhancement of individual student experience.
Integrated	The institution has a broad view of student success, reporting a number of different aspects of success and possibly acknowledging a range of stakeholder perspectives.	Student data is defined in broad terms and includes personal, demographic and performance data, and elements of behavioural or cognitive data.	Data collection undertaken throughout entire student experience, leveraging and integrating information from existing systems with new system capabilities. Data analysed across systems to provide predictive information identifying areas of support, need or risk.	Student-facing information directs individual students to resources necessary to assist learning. Data reported to staff and leaders can assist in developing support strategies tailored to current needs analysis of particular student cohorts.
Developing	An understanding of student success focused on employability and program completion and formulated from an institutional, or more often disciplinary, perspective.	Students are understood by demographic and performance data and through sporadic surveying.	Planned periods and frameworks for collecting data are resourced and exist in dispersed systems. System capabilities are limited and require manual manipulation of information.	Reporting is limited to institutional leaders and staff and is used to make institutional improvement to student services or to specific courses based on student feedback.
Basic	The institution is unable to define student success beyond the retention and pass rates defined by external agencies.	Students are defined by administrative, compliance or external reporting requirements.	Student data is limited to personal and/or demographic details collected at admission and to academic results as the student progresses.	Analysis is restricted to reports for external requirements and for leaders for administering services and facilities.

Figure 1: Frame developed to interpret current practice

The pressure on individual institutions to articulate the value of higher education is increasing given the focus on employability, student debt and broader community debates around the contemporary purposes of higher education in a managed market for higher education. A clear conception of student success is integral to attracting, retaining and graduating students.

Approaches to student success can be considered at their most basic in terms of retention. Institutions with broader conceptions of student success include graduation, employability, personal growth, engagement with campus or extracurricular life, critical thinking and inquiry skills, gaining access to higher education, engaging with peers and making friends. A more expansive approach to student success takes into consideration multiple perspectives from institutions, students and a range of other stakeholders, including broader communities and attitudes. Of the 31 participating institutions, the majority of responses in relation to student success were expansive and included both universities and other higher education institutions.

There is growing pressure on higher education institutions to differentiate the value of the student experience to potential and existing students. As students invest heavily in not just one but sometimes multiple higher education providers, qualifications and experiences, institutions have become adept at articulating what success may look like for their students. The findings of the institutional inventories support a highly developed conception of student success across the sector.

An expansive conceptualisation of student success is reflected in a case study university that is moving towards an individualistic conceptualisation of student identity. Although institutional data systems are not fully matured to allow individualistic engagement, there is a move towards developing internal systems that are aligned to well-developed conceptions and institutional cultures surrounding student success. To assist in understanding and supporting student relationships with different aspects of the university, students complete an introductory survey regarding their motivations for study. This is supported by a study contract, to promote individual responsibility and self-reflection, which is in turn driven by a theoretical model of student success. A problem currently being grappled with is reaching and engaging all students. For example, students who are not considered 'at risk' or 'academic high achievers' may not be experiencing the full range of opportunities and supports offered by the university. Although this university is making efforts to increase its institutional reach to engage these students through interactive student portals and experiences, staff are aware that there were still students who may not have strong relationships with the university. Plans are being considered for personalised student portals or 'skins' to facilitate the student experience, foster community and provide services. Implicit in the way these opportunities are delivered is a conception of students and their relationship to the university.

Box 1: Student success case study

An institution's capacity to understand students is fundamental to its capacity to lead a successful experience (Kuh et al., 2006). Partly because of rapid expansion, but also likely due to sector characteristics, higher education remains fond of batching people into groups. Lip service may be paid to individual diversity, but practice is dominated by identifying students according to metrics that are, in effect, basic socio-demographic categories, often formed in terms of deviation from elite-era stereotypes. There is scant regard for psychological factors, including motivation or expectations.

Of the 31 institutional inventories received and organised along a developmental continuum from basic to strategic perspectives, most institutions were located in the middle—that is, they operate with traditional or batch-like approaches to student identity. These traditional approaches identify a narrow range of identity factors (typically conventional demographic features) that contribute to student success. These demographic factors link with government reporting requirements, particularly concerning equity groups. Thus, age, cultural background, gender, socio-economic status, first in family status and disability status were identified, as was employment status. A broader approach can be characterised as a batched perspective that takes into account more than just demographic features. Most institutions falling into this category reported that their student body had grown more diverse in recent years and now included increasing numbers of less prepared students and international students from a larger number of countries of origin. While most institutions fell into one of two, relatively traditional, understandings of student identity, an acknowledgment that more nuanced, personalised or individually focused understandings of students was required.

A small group of four institutions espoused an individualistic view on student identity that considers that there are no ‘typical students’. Rather, each student has unique circumstances, backgrounds and choices to make. Two of the four institutions described using ‘big data’, particularly behavioural data, to identify novel groups or individual behaviours that contributed importantly to student success, rather than relying on traditional student groupings (such as membership of nationally defined equity groups).

Most institutions were situated in less developed stages of an individualistic student experience. At the same time, many acknowledged the need for greater granularity of student information covering, for instance, literacy and numeracy levels, educational background, more granular information within equity groups, mental and emotional health, whole of experience perceptions, motivations and objectives for study, aspirations and hopes for achievement, library use, co-curricular activities, technology use, barriers or difficulties in study, engagement levels and graduate outcomes.

For a dual-sector higher education institution specialising in disciplinary-based undergraduate study, students are diverse with high representation of students identified as being disadvantaged. As a result, greater granularity of information about students is sought by the institution to differentiate within equity categories. The student experience is measured primarily through proxy information and through a range of enrolment data, internal and external surveys, identification of equity status and through the occurrence and effect of intervention strategies.

The institution collects information through the student journey, including pre-admission information, enrolment data and student progression. It has strong links with graduates through social and professional online networks and an alumni association. As an institution that focuses on professional practice in industry, information about graduates is particularly important for reputational status and for strengthening relationships with industry to leverage future opportunities for current students. The institution has implemented a student lifecycle project that is developing student typologies and addressing current limitations on the collection and analysis of student data.

The establishment of a data warehouse for integrated protocols has begun and a data scientist is currently cataloguing data points throughout the student lifecycle. The institution reports that some information is often limited and anecdotal and analysis is often underutilised. However, a number of initiatives are developing to address these limitations, including an inventory of student technology as part of a teaching and learning project to assess usage and preference. While retaining students is a significant aspect of the approach to student success, the institution is now developing broader measures that can be used to understand the student experience using multiple data points.

Box 2: Student identity case study

Enhancing the student experience through the collection and analysis of data is a strategic priority across the sector. However, acknowledgment that current institutional systems are not fit for purpose is widespread. Many institutions are hampered in their efforts to access important student information often disaggregated and stored in silos within and across institutions, or not captured at all.

I don't think very much happens with student data... I suspect it languishes somewhere on a computer service.

Fifth-year full-time student

Four stages can be considered to define the approach and culture for using data to enhance students' experiences and successes. The stages range from basic to a second stage in which the approach is developing. Stage 3 espouses an integrated approach and culture and the most developed stage embraces a strategic approach. Given the challenges universities face in the contemporary higher education environment, as noted above, it is unsurprising that practice across the sector is identified as being situated in the two least developed stages, characterised as basic and developing.

A basic approach to defining data items and collecting data is driven by administrative, regulatory or external compliance requirements. Student data is limited to personal or demographic details collected at admission and to academic results as the student progresses. Data analysis is restricted to producing reports for external reporting requirements and for institutional leaders for purposes of resourcing essential student services and facilities.

In the developing stage, demographic and performance data is complemented by information from tests, surveys and market research, with planned and resourced periods

and frameworks for collecting data. System capabilities are often limited and require manual manipulation to yield useful information. Reporting is limited to institutional leaders and staff and is used to make institutional improvements to student services or to specific courses based on student feedback.

Only a small minority of institutional responses reflected practice that can be described as integrated or strategic. An integrated approach is characterised by student data that is defined by personal, demographic and performance data and elements of behavioural or cognitive data. Data collection is undertaken throughout the student experience, leveraging information from existing systems, integrating systems or introducing new system capabilities. Data from various sources and held in different systems is integrated and analysed, yielding predictive information that brings timely information to staff and students, identifying areas of support or risk. Student-facing information directs individual students to resources necessary to assist learning. Data reported to staff and leaders can assist in analysing the current needs of particular student cohorts and tailoring support strategies.

Only one institution reflected an approach to student data that can be characterised as strategic. This approach considers how data impacts the individual student experience and defines data in broad terms, including personal, educational and cultural background, current studies, co-curricular activity, aspirations and post-graduate activity. Diverse data sources, including student-supplied and synchronous trace data, are collected and integrated dynamically. Sophisticated analysis capabilities provide quantitative and qualitative data from all sources in user-friendly forms, including personalised student-facing information for immediate use. The analysis produces new insights to enhance individual student experience. The strategic approach to personalising the student experience is aspirational. However, rapid technological advances and increased appetite for enhancing individualised student experiences across the sector mean the strategic approach is increasingly an objective for many higher education institutions.

For one regional university in Australia, the mix of online, distance and locally based on-campus students has influenced an approach to the student experience defined by well-being and flexibility to meet the needs of both on-campus and external students. Unique to the university is an online mechanism that collects real-time data through student emoticons indicating their feelings towards a particular aspect of the student experience. The online tool also measures engagement with internal systems, including LMS usage, assignment submission, support and assistance. Additionally, the university uses word cloud technology, which collects information from contributing students who enter words representing their feelings with reports updated regularly throughout the day during study periods.

Analysis of this well-being data is both institutional and student-facing. Weekly reports are provided to the Heads of School about student satisfaction, lack of engagement and reasons for discontinuation. Emails are sent to students flagged 'at risk', with recommendations or student support information. Analysis of the word cloud data identifies commonly used words that indicate levels of student well-being, and information or student tips are generated in response. For example, if the word 'stressed' is used significantly around exam times, resources and recommendations are provided for general use. With a significant proportion of students studying externally and online, the system represents a proxy for personalised support and data collection.

Box 3: New data sources case study

What is required to shift existing practice towards more evidence-driven leadership of each individual's success? Higher education is moving into a larger and more competitive milieu,

and there is an evident need to build capability that will yield required transformations in quality and productivity. Broadly, it seems, the institutions in this study are relatively progressed with respect to their approach to student success, moderate in terms of thinking more individually about students, and underdeveloped when it comes to sophisticated use of data to identify and cater to individual student experience.

Institutions were asked to identify important factors for executing and sustaining institutional change. Specifically, they were invited to rank the following six attributes:

- culture—the environment created by the totality of systems, structures and people;
- structure—the operating framework, including governance and management;
- systems—the operational elements of the institution, including IT systems;
- leadership—the style of management and the strategic direction of the institution;
- staff—the current breadth and scope of roles responsible for operationalising systems; and
- skills—the development of staff skills and knowledge required to operationalise institutional systems.

Table 1 summarises the rankings provided by all responding institutions. In terms of substantive experiential matters—student success and student identity—it is clearly more humanistic matters like culture, leadership and staffing that are seen to count. For education data it is systems, skills and staff that rank more highly. The need to build staffing and skills features prominently across each dimension and, conversely, the need to advance governance and management structure was generally seen as low. Again, divergence between the substantive and technical facets affirms the disconnectedness of current practice. These very broad insights marry with the maturity insights shown above, flagging the need for more fundamental system development on the technical dimension.

Table 1: Importance of change factors

	Culture	Structure	Systems	Leadership	Staff	Skills
Student Success	High	Low	Low	High	Medium	Medium
Student Identity	High	Low	Medium	Medium	High	Low
Education data	Low	Low	High	Medium	Medium	High

Looking broadly, therefore, the need to develop education data systems could be seen as the main constraint hampering progress. Institutions flagged the particular need to develop greater understanding of students in specific areas like educational background, personal circumstances (including emotional and mental health), study aspirations and motivations, participation in non-academic activities, and a holistic view of the educational experience. With richer and more granular information, institutions noted the ability to produce more nuanced reports of various kinds for students, staff and the broader community.

While student success and understanding students are considered largely influenced by culture and leadership, collecting and analysing information needed to realise student success and to better understand students is seen as a systems issue. This apparent

disconnect between leadership and culture, and the development of analytic skills, resources and systems, provides insights that stimulate new perspectives for bridging this gap. There is a particular need for educational, rather than solely technical, leadership of analytical systems to realise the goal of joining up the substantive, technical and practical facets of the future student experience.

Rather than relying on traditional student groupings, a large metropolitan university has begun interrogating system logs and behaviour to produce more meaningful understanding of student cohorts. Importantly, university leaders see the institution as a 'differentiated university'. This university has attempted to engage, through data, with 'the reality of what being a student is', rather than academic perceptions of idealised students. For example, while identity growth is a strong component of the liberal arts tradition, it is assumed that students are school leavers who need to 'discover themselves'. Many older students are less interested in this aspect of their education and their engagement with the university should therefore be different.

While the range of data collected is not unusual compared to other institutions of a similar size, its coordination and analysis appears to lead the sector. As noted above, they perform 'big data' analyses to identify strategic insights for the university—for example, WiFi usage, which has been used in turn to redesign spaces to encourage collaboration, study and an enriched campus experience. It has also begun using student dashboards to inform students about their learning. Rather than using learning metrics to stream or 'quietly manipulate' students, these dashboards are a learning experience in and of themselves. They enable students to observe their behaviour and make data-based decisions about changing their own practice. This provides students with agency that is lacking in the way traditional learning statistics are presented and reported. It draws student attention to things they otherwise wouldn't think about. Because it is performed at the level of the individual, subtleties are available that are lost in higher-level institutional reports. The underlying theme is to use data to 'get students to think, not tell them what they are'.

Box 4: Data-driven leadership case study

The project's fieldwork component confirmed that Australian universities and some higher education institutions use large amounts of institutional data to inform business decisions, such as marketing strategies and developing new funding sources and operating models. Fieldwork also confirmed that few universities engage in strategic, intentional and institution-wide approaches to collecting and analysing data that will assist to improve and personalise the student experience. Further, the research indicated that, although there is sector-wide commitment to enhance student experience, in practice concentrated data points occurred at admission and when students were identified as 'at risk'. The vast majority of students not identified by existing frameworks, including by equity descriptors or through retention algorithms, are largely amorphous and increasingly unknown to institutions as they transition through and out of higher education.

Broader and more meaningful information on each student throughout and beyond their higher education experience is considered important for student success. As student numbers increase, so too do the institutional challenges of maintaining high levels of awareness about how best to help people succeed. There is a significant challenge in integrating and analysing disparate pieces of information about each student and using it strategically to individualise and enhance their experience. Yet, from the student's perspective, these disparate bits of information existing in different institutional systems or not being captured in full, are artefacts of a personal educational experience.

Understanding each student through data-driven approaches requires harmonising of strategic priorities with institutional operations and systems. To be sure, there are multiple

challenges in re-orientating collection and use of data from an institutionally led frame to a more dynamic and individualised approach. Digitising student profiles and journeys in ways that make sense to institutions, and institutions using the ideas sketched in this report, may well evoke altered approaches to higher education. But much work is underway in pockets of the sector to increase system capability, analytical functions and data-warehousing. In the medium term, certain institutions and fields will advance more quickly than others until a critical mass of educational infrastructure reaches a tipping point that invokes fundamental reinvention of the student experience.

3. Nine Qualities of a successful experience

Overview

Getting a degree is part of success. Employment is a benefit but not the sole measure.

Validation is important.

Fourth-year full-time student

The fieldwork projected deep insights into contemporary practice, which extended and enriched preceding literature analysis and consultation. Building actionable concepts for understanding and leading students is core to future success in this area. Much applied, data-focused student management and institutional research work is a-theoretical, but taking a conceptual approach is critical as it helps people make educational and institutional sense of the phenomena under study.

The project team drew together prior insights into student experience, success and identity, along with the contemporary frames emerging from the empirical work. From this platform, the team proposed nine qualities for leading student success (Coates, Kelly & Naylor, 2016; see Attachment 1). The intersecting qualities presented in Figure 2 are asserted boldly as a means for developing new perspectives and advances on the student experience. They distil insights from the literature, from students, from experts and from institutions. For explanatory purposes, these nine qualities are grouped into three broader clusters: student outcomes; student formations; and student supports.

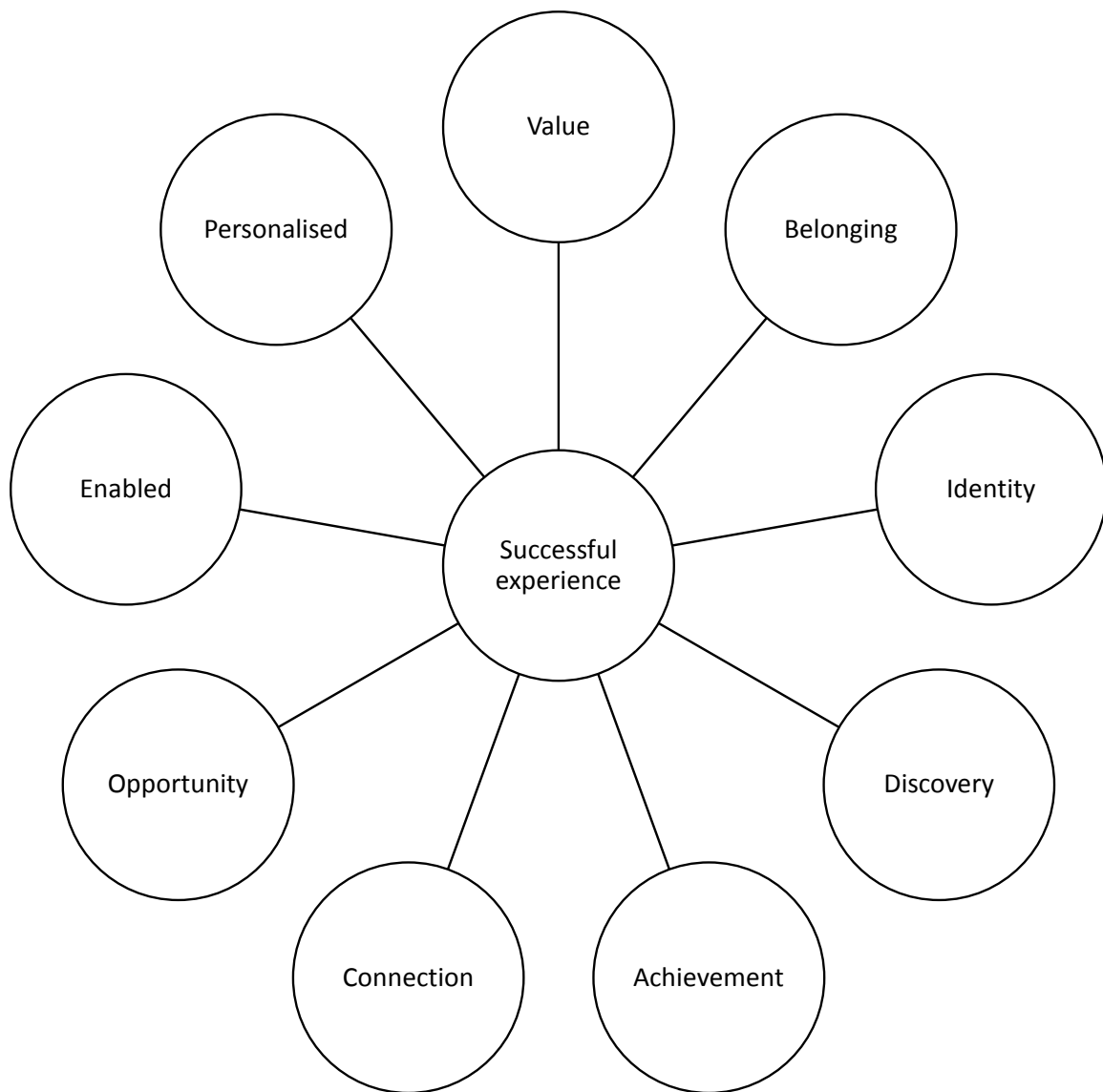


Figure 2: Nine Qualities Model (9Q): Defining student success

Student outcomes

In the reconceptualisation advanced here, student outcomes encompass four qualities: discovery, achievement, connection and opportunity.

Discovery is an essential quality of students' experience of higher education. Even in very epistemologically convergent areas of training or development, people relish experiences where they have the opportunity to encounter, but even better to create, new ideas. Ultimately, discovery seems cognitive in nature and provoked by intrinsic motivators, though it can be mediated socially and behaviourally and be associated with various emotions, such as stimulation, intrigue and delight. Discovery experiences in higher education are as varied as research experience, building understanding, generalising transferable ideas and skills, building emotional capability and creating social networks. As

this survey of potential experiences conveys, this quality is not presented as ephemeral but as tapping into experiences that may take years of persistent work or tinkering to achieve.

When you graduate you have no business connections. Opportunities for internships or networking while studying would help me succeed.

Fourth-year full-time student

Achievement plays a formative role in the student experience. Much student experience work has focused on learning and development processes, but outcomes are what really count. Somewhat separate policy and research traditions have emerged around education processes and education outcomes, yet students do not see the distinctions forged by governmental and institutional policies and practices. Instead, both students and experts cite achievement as critical to a positive student experience. Achievement means really concrete things, such as getting into higher education, passing units, getting good marks, completing courses, articulating to other qualifications and getting a job.

As an international student paying really high fees I don't think I can justify the value of higher education in terms of employability alone... but if I encompass everything including friends and life experience I guess you could say yes.

Second-year international student

Connection is something people seek from higher education, even in very theoretical moments. Connection is whether institutions, teachers, fellow students and support staff help learners make connections between ideas, people and experiences. Practically, such connection plays out in terms of learners establishing new networks within and outside their institutions, going on academic exchanges, joining up ideas across activities and academic learning, building cultural sensitivity to differences in orientations, collaborating with communities and linking with professional communities as well as those on campus.

The institution could help with options for the future—not just bums on seats now, then graduation. Assistance [is needed for] what you want to do as an individual.

Fourth-year full-time student

Opportunity is a reason that people embrace higher education. Academic and professional opportunities are principal attractions, but there are others, like enhancing health, social and cultural prospects. The kind of opportunity being defined involves social linking, providing helpful insights into prospects and building people's sense of personal enrichment and empowerment. Hence, there is a broad range of activities and conditions in play, ranging from personalised perceptions of accomplishment to tangible vocational achievement.

Engaging with other students you form networks which become valuable assets for you in other ventures.

Fourth-year full-time student

Student formations

Student formations encompass three qualities: value, belonging and identity.

Higher education is important not just to gain disciplinary knowledge but to develop the ability to evaluate yourself and your future.

Third-year full-time international student

Value should be returned from higher education. While seemingly simple and self-evident, this proposition masks myriad complex and difficult considerations. Often, value is segmented into different categories, like financial, social, educational, professional or personal. A common, though complex, distinction is almost made between private value for individuals versus public value for industries or society as a whole. In terms of an important quality of the student experience, value is defined as people seeing that higher education was worth the cost, time and effort. This definition puts emphasis on monetary and opportunity costs, as well as broader forms of cognitive, emotional and behavioural effort. Value embraces academic and broader supports, inasmuch as people will see their experience as valuable if these supports have been deployed effectively. The term ‘worth’ also signals interest in understanding the return on investment from higher education.

Belonging to a community has long been seen as an important quality of higher education, associated with many forms of constructive experiences and outcomes. The concept of belonging taps into part of what is embraced by research into student engagement—that is, people’s support for participating in educationally purposeful practices. More specifically, belonging pinpoints people’s orientation to, inclusion in and recognition by communities. Importantly, belonging signals the absence of alienation, whereby people feel detached or even lonely in a crowd.

I would describe my identity as a student as invisible... I was never given any choice over my education throughout my whole degree

Fourth-year full-time student

Forming **identity** is an important rationale for participating in higher education. Higher education offers people opportunities to extend or change themselves, either in localised or more expansive ways—to become more responsible citizens. Simply put, it is expected that people who study medicine or engineering or accounting graduate not just with new knowledge and skills, but also with new personae. Similarly, mathematics and history graduates should have a sense of what they have learned and how to apply this to future opportunities. Identity formation is codified explicitly in many professional programs, as, for instance, ‘bedside manner’, ‘clinical skills’ and ‘management capability’. In other courses, ‘professional attributes’ are defined in more general ways (for example, ‘ethics’ and ‘integrity’). The presentation of ‘graduate attributes’ by institutions in recent decades has signalled an even more diffuse and pervasive form of identity development. Recent enthusiasm regarding entrepreneurialism is relevant here, signalling interest in higher education helping learners build a sense of themselves as leaders of new ideas.

Student supports

In terms of student supports, people should feel that their experience is enabled and personalised.

To help me succeed the University could provide more targeted information about events that I am interested in an accessible form.

Third-year full-time student

Higher education should **enable** people. It should help people acquire new competencies and also the broader self-regulatory and metacognitive capacities that will help them flourish in the future. Empowering students in this way comes from formal education, but also from broader experiences and conditions that affirm people's development and participation in organisational activities. Sitting on committees and boards, for instance, offers excellent experience in governance and leadership.

I assume data is used by institutions for improving courses and saving money.

Fourth-year full-time student

Growing relevance is being placed on a **personalised** higher education experience. Such experience is commonly characterised as 'just-in-time', 'just-enough' and 'just-for-me'. People receive information, support and guidance as they need it, rather than when the institution schedules its delivery. This does not imply a lack of curriculum and broader organising structures, but rather that such structures are nimble and responsive to different circumstances. Such personalised experience can be contrasted with industrialised batch approaches, like large lectures, scheduled paper-based exams and place-fixed learning, which have served as a means for scaling higher education from elite to mass to university levels. Perhaps surprisingly, it seems likely that higher education is one of the least personalised facets of contemporary life, given the technological reform of many industries and organisations.

To help me better succeed, communicating the importance of networking would be useful... or communicating why things happen... nothing gets done in student experience surveys. What you want out of a course is often not what the lecturer wants.

Third-year full-time student

4. Setting sail

Overview

The value I'm getting from study is that my thought processes are changing from gaining broader knowledge about life, not just my course.

First-year full-time student

The paragraphs above sketch nine qualities that map out facets of a successful student experience. The following discussion positions these qualities and looks at prospects for operationalising them into practice. Before launching down this track, it is important to be clear about the limits of what is being attempted in this project. While the development of technology, policy or practice is rarely linear, unidirectional or unidimensional, Figure 3 shows general steps large-scale change might include. As detailed in Appendix F, this project has sought to ferment formative dialogue regarding the data and leadership required to help each student succeed, and to conduct scoping work to clarify what infrastructure must

be developed. Further work is required to develop such infrastructure, which can shift broader discourse and then accelerate educational improvement.

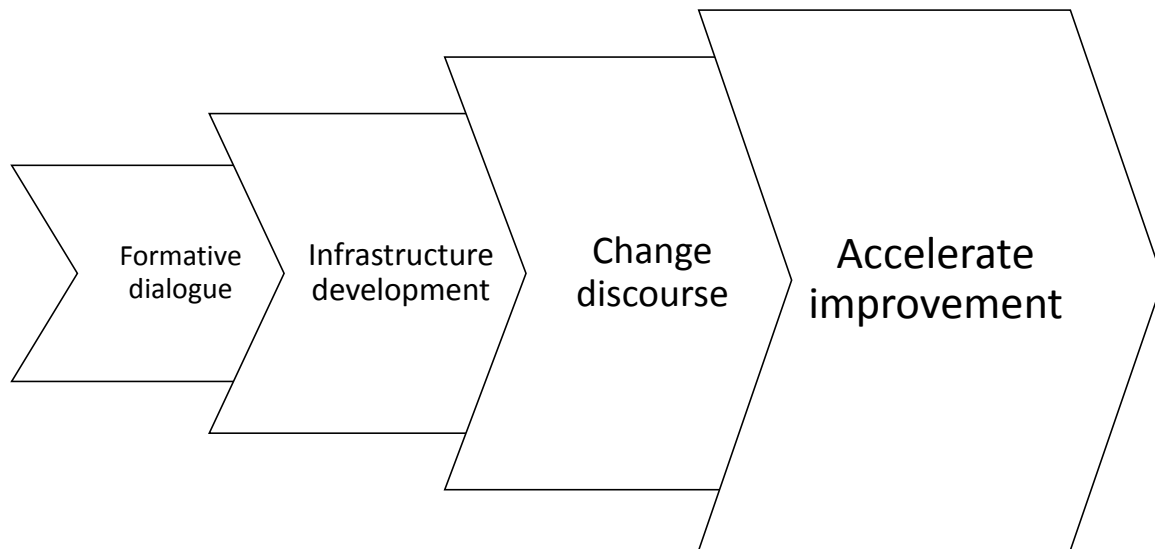


Figure 3: Steps in large-scale change

Clarifying the qualities

In articulating these nine qualities, it is acknowledged that they are neither exhaustive of the area nor mutually exclusive. The terrain is too complex and dynamic for any such claims to be made. Rather, it is suggested that they mark out a suite of worthy agendas and carry potential to create discourse that helps students and their institutions succeed.

The qualities step well beyond prevailing terms used to define and operationalise student experience and related constructs. For instance, while ‘student satisfaction’ has become somewhat entrenched, there is ample evidence that, beyond stamping out woeful practice, it offers substantially diminishing returns to improving higher education. Worse, it sucks energy and attention away from things that really count, as articulated in the Nine Qualities Model above. Major organising phrases such as ‘teaching quality’, ‘student support’ and ‘student services’ are also becoming less relevant as team-based computer-mediated teaching and facilitation become more pervasive. The nine qualities are broader than the frequently espoused, though rarely measured, ‘graduate attributes’. Rather than fixate on what are really supply-centric concepts, the nine qualities instead signal new co-created conceptualisations of higher education.

These qualities are designed to be equally meaningful to many diverse stakeholders, including people who haven’t thought about higher education, prospective students, students, graduates, employers, teachers and support staff. Given the transparencies and efficiencies afforded by new technologies and knowledge, it makes little sense to design ideas about education or quality for segmented or partitioned audiences, as has been the case in the past. Instead, common and suitably nuanced information can be provided to myriad stakeholders. What this means in concrete terms is that the same data used to

produce personalised reports for individuals could flow through to academic leaders in aggregated form.

Student involvement is rated highly by students and staff but the actual institution is more interested in high grades.

First-year full-time student

It is always difficult to articulate exactly the approach used to distil new concepts. A suite of strategies was used to create and test these qualities, as touched on in the introduction. The background research helped tease out emerging ideas and perspectives on who students are and how they are experiencing higher education. This research informed production of the institution inventory, which yielded very rich insights and commentary from dozens of reflective thinkers. Detailed review of these inventories by three analysts derived a shortlist of underpinning, forward-looking ideas. These ideas were tested in several consultations with academic leaders and student affairs experts and in student interviews. Additional reviews were gathered during several international consultations. The empirical feasibility of the qualities was mapped. Further consultation took place during the workshop series.

Establishing an evidence base

Articulating such qualities has the potential to be intellectually fruitful, though of little practical import without a feasible means for operationalising the ideas. A suitable suite of data is essential to giving life to the nine defined qualities of a successful student experience. To then activate future success, an effective platform is required to ensure that information is communicated in meaningful ways to as many people as possible who have the potential to benefit from higher education, and to individuals as they create a higher education experience.

Relevant and reasonably robust data must be available that support and advance the defined qualities of a successful student experience. An initial stocktake, based on the consultations and fieldwork conducted in this study, is provided in Table 2 for just two of the nine qualities. Appendix D provides the full resource.

The associated indicators provide important new analytical and actionable frames for discussing the student experience in Australia. They provide new means for correlating a range of demographic, contextual or psychographic factors with various facets of the student experience. Specific metrics are then identified to underpin the indicators. The metrics offer quantitative potential for giving life to the indicators. These are sourced from large and under-utilised storehouses of data held in a variety of institutional systems.

As Table 2 shows, desired data can flow from a range of sources. Aspects of the qualities can be sourced from survey data, and from a range of enterprise systems. Additional data is needed in places, as is the need to integrate and organise existing data in new ways. Known problems surround the lack of integration across systems, the inability to capture online student learning undertaken in non-institutional platforms, the exploitation of data from 'offline' activities that may be captured by card swipe or other systems (Higher Education

Commission, 2016), and working through a complex set of institutional, academic, pedagogic, social, ethical and cultural issues (Prinsloo & Slade, 2013).

Table 2: Mapping of two qualities with indicators and data

Quality	Associated indicators	Data availability	Data needs
Discovery	Specific indicators that underpin this quality include: developing new technical, generic and personal skills; advanced problem-solving skills; producing a body of creative academic work; understanding academic culture and expectations; and acquiring new interests.	Based on audit of existing information, lagged data is available from national student and graduate surveys. There is a shortage of collected data that measures students' capacity for discovery. However, internal data points, including curriculum and assessment systems and commercial online profiling platforms, would yield richer information.	Adequately assessing this quality of discovery would involve making available and integrating data collected by student surveys, institutional systems and commercial platforms.
Value	Specific indicators that underpin this quality include: graduate outcomes; course fees; course duration; work experience opportunities; physical and online facilities and services; perceptions of teacher quality; identifying study purpose aspirations; and student information.	Based on audit of existing information, lagged data is available from national student, graduate and employer surveys. Additional information could be gained from student service use and incidence of attendance, exit interviews, institutional alumni systems, and social media platforms.	Adequately assessing this quality would involve formalising, integrating and making available data collected by national surveys, institutional systems and records, and commercial platforms.

Articulating individual journeys

Student success is a personal thing. It's different for everyone.

Second-year full-time student

With a suitable evidence base, it becomes possible to chart individual paths through each of the nine qualities. The Nine Qualities Model maps out facets of a successful student experience and, for each of these, it is helpful to identify thresholds that signal transition from one level of experience to another. This exposes our adherence to a fundamental measurement assumption that gradations of increasing success can be specified for each quality. This does not imply that every student proceeds stepwise, or even necessarily through each threshold, or that each threshold is even meaningful for each student. It does imply a fundamental structure that underpins each quality and is relatively invariant across environments and people. This is uncontroversial if the thresholds are defined in sufficiently general ways that are able, through the process of measurement, to be particularised in relevant and helpful ways.

The process of defining such thresholds typically involves an iterative work that includes:

1. for each quality, conceptualising transition thresholds—that is, for instance, clarifying what characterises low, medium and high forms of personalisation or value or opportunity;
2. identifying or creating relevant data elements that have desirable technical properties—for instance, compiling information from student surveys and related systems into reports;
3. aligning data elements with each of the transition thresholds, giving consideration to appropriate assessment and reporting protocols;
4. validating the alignment of data with qualities, and testing and refining the model in small-scale applications; then
5. scaling the model for use in more general individual and institutional contexts.

This approach reflects the straightforward application of assessment science to build technical foundations for the nine qualities. It is important to follow such a process in developing new student experience infrastructure, though this does not mean the solution must be complex. The field of higher education student experience has a history of searching for more precision in evidence than is often warranted by the quality of the data—the pervasive (mis-)use of student satisfaction data is a primary case in point. Identifying robust but parsimonious indicators of these facets of the student experience will do more to advance practice than searching for decimal-place differences in current metrics will ever achieve.

As well as this growth dimension, it is important that the transition through thresholds is interpreted in an individualised manner. People do not move at the same pace, or even in the same way, through common educational experiences (Sturtz, 2008). Hence, as flagged directly in one of the qualities, there is a need for a highly individualised interpretation of student identity as part of the proposed model of student success. This project draws on the idea of ‘intersectionality’ (Dill & Zambrana, 2009), which opens up an approach to identity that uses intersecting vectors of relevant information to account for differences in identity criteria to build complex pictures of who people are. Such identity delineation already abounds for anyone with an online presence, yet it is just starting to emerge in higher education. Taking this approach helps move beyond bundling people into simplistic groups/boxes that fail to provide the nuance necessary for helping individuals succeed.

The ideas of profiles and journeys are useful tools for conveying this approach. Simply put, a profile can be envisaged as a complex dynamic of diverse attributes that portray an individual in relation to a successful student experience. A journey is a multiple branching pathway through a higher education process, from beginning to end. The idea of profiling ‘movements through journeys’ steps well beyond the idea of shifting ‘batched groups through lifecycles’. Together, these two approaches may seem, at first glance, to unleash infinite complexity for conceptualising and managing each student’s experience, but the history in other industries implies otherwise. After initial reworking in terms of new processes, effective digitisation has been shown to yield substantial increases in productivity

and quality of people’s purposeful interactions with organisations (Bommel, Edelman & Ungerman, 2014).

The most rewarding aspects of being a student are self-improvement and self-discovery, having more freedom to learn and have [sic] ownership over your life. The ways students learn and engage and definitions of success are different from 10 years ago.
 Part-time student in seventh year

Figure 4 depicts how such information might be relayed in a sample Student Success Report. For each quality, it presents information (scored on a scale ranging from 1 to 10) for students in a course, an individual student’s success to date and individual expectations.

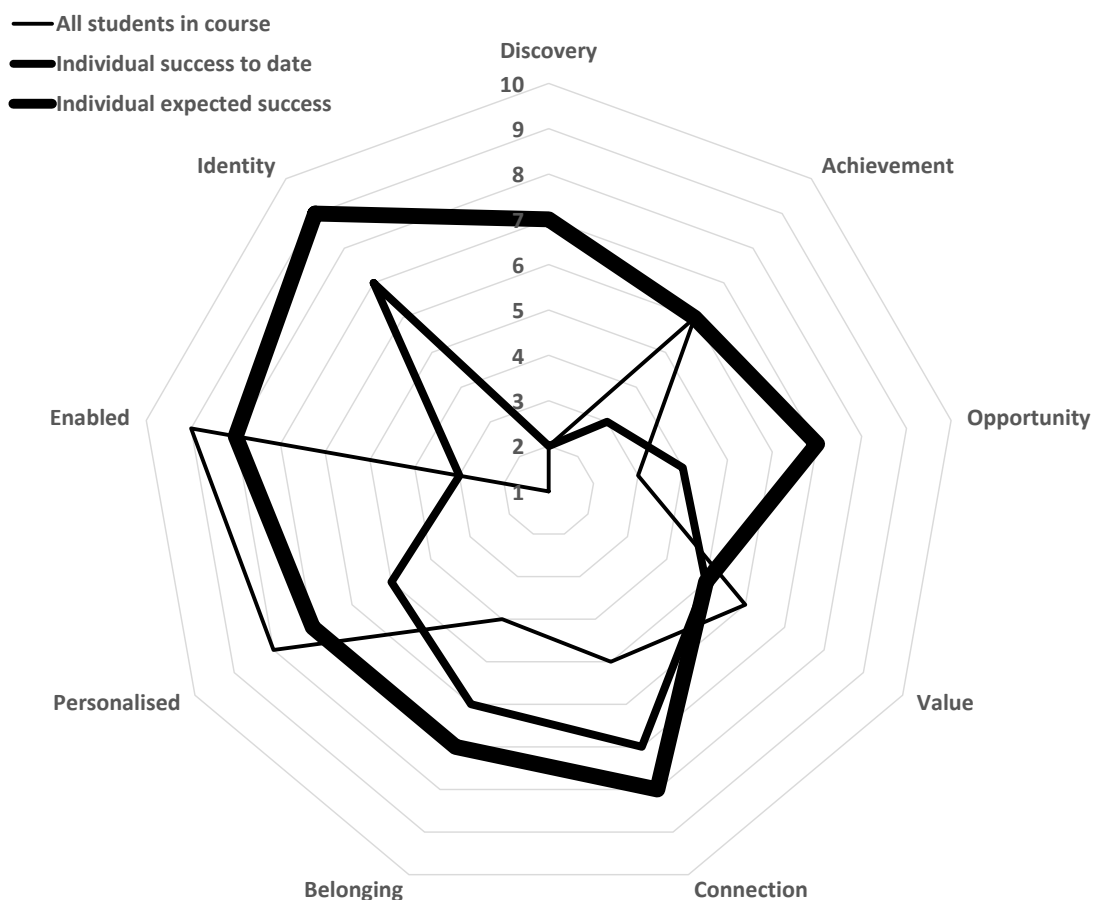


Figure 4: Sample Student Success Report

Different players will, of course, interface with this information in different ways. Indeed, understanding differences in perspectives and interpretation has proved to be an important part of how new forms of data are being positioned and developed in traditional/existing higher education structures (which are often changing themselves). It is important to design new approaches that take very seriously the demands of consequential validity. Technical development can then be driven by a clear sense of what should be achieved. The approach enacted in this study—involving reviews and discussions about research and practice—has sought to design an approach that yields meaningful insights for key stakeholders such as students, teachers, support staff, managers, leaders and the public at large.

Data-driven leadership for student success

Ambitiously, this study has sought foundations for new forms of data-driven leadership of the student experience. It has aimed to prompt sustainable strategic change through improving institutional capacity to enhance the student experience by building new concepts for understanding students, identifying new data sources and approaches and engaging institutions in leading enhancement work.

The study has been guided by the important rationale and premise that there is a pressing need for joined-up research and development of student experience, data and leadership. Pushing ahead separately on each of these frontiers will not achieve the desired change. Rather, leadership must focus more on using data for student success, data must be more aligned with student success and relevant to leaders, and student success must be grounded in data and leadership. Figure 5 presents the Data Experience Leadership Model, which depicts this joined-up perspective. Finding a 'sweet spot' that unites data with experience with leadership carries valuable potential for improving higher education.

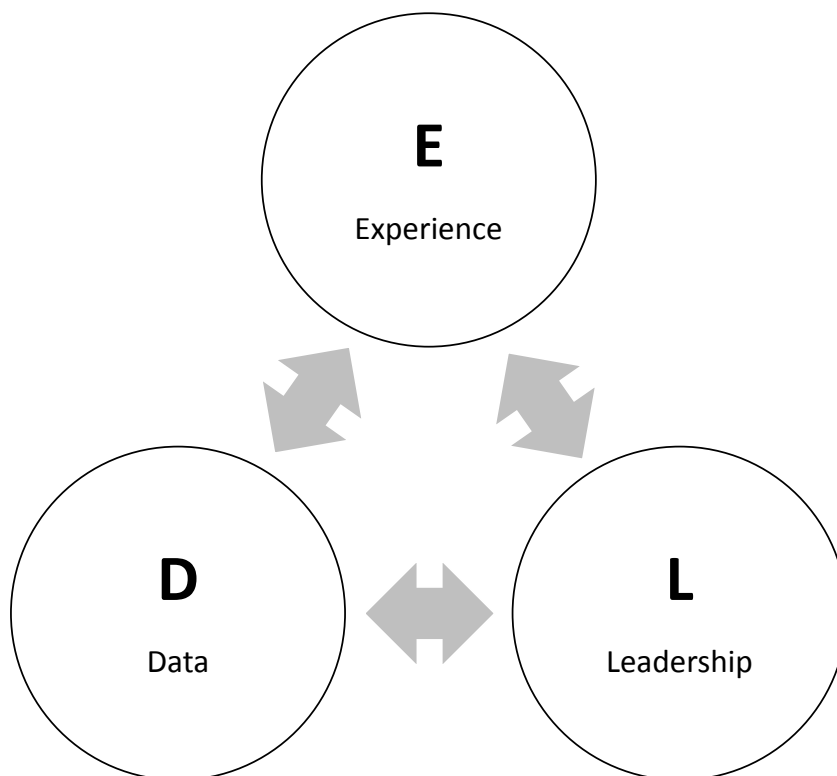


Figure 5: Data Experience Leadership Model (D+E+L): Data-driven leadership of experience

The study's research and consultation clarified aspects of this model. In higher education, leadership is invariably a distributed activity that involves a wide variety of people, and certainly not just people in formal management roles. In particular, and somewhat obviously, students play an enormously important role in co-creating a successful experience. Improving student success hinges on leaders using data to understand and steer practice. Data-driven leadership of student success is impossible if data does not exist, is not collated or reported in meaningful ways, or is not focused on the qualities that matter for

student success. Work on successful experience must be articulated and also underpinned by a suitable evidence base that is reported in ways relevant to people with the capacity to shape change.

To help institutions improve data, leadership and student success, and thereby advance beyond the limitations that fuelled this project, the frame developed to interpret the national fieldwork (Figure 1) was reconfigured into an Institution Maturity Matrix. This is presented schematically in Figure 6, with the full management resource in Attachment 2. As this Institution Maturity Matrix makes clear, building data-driven leadership of the student experience means improving in each of these three areas, and doing so in ways relevant to each of the others. Better data will not help unless it is relevant to leaders and success. Leadership will fail unless such energy is guided in ways that inspire success. Articulations of success are interesting but useless if they are not linked with data and people or systems that can shift practice.

		D: Data	E: Experience	L: Leadership
Phase	Basic			
	Developing			
	Integrated			
	Strategic			

Figure 6: Institution Maturity Matrix (IMM): Diagnosing maturity and readiness

An Enhancement Framework was produced to help institutions identify how they could build more evidence-based leadership of the student experience (Borden, Coates, Kelly & Zilvinskis, 2016; see Attachment 1). It sought ways to create a collaborative culture of student success within a professional bureaucracy. Enhancing the student experience will only happen if the appropriate people talk to each other, share their understanding and apply their expertise and diverse judgments to shape the institution’s environment for student endeavour. It is crucial to focus attention and effort to avoid or remedy ‘organisational attention deficit disorder’. It is important to shift to a student-centric perspective on the educational experience that encompasses a holistic frame familiar to students as they intersect with a broad range of processes and people, units and departments, platforms, services and requirements. Therefore, the Enhancement Framework envisions a ‘new order’ of institutional arrangements and capacities that support a more aligned focus on creating a culture for student success. The framework describes pathways for realising aspects of this vision.

Figure 7 captures the Enhancement Framework’s five stages, which include:

1. identifying priority areas for improvement and developing a shared vision for enhanced quality;
2. taking stock by assessing the current status of the institution’s inputs, processes and outcomes in relation to the vision for improved quality;
3. prioritising initiatives and selecting strategies for enacting improvements and developing action plans;
4. implementing the action plans with fidelity, typically starting with a pilot or small scope project; and
5. assessing the impact of the new processes and programs, making adjustments as needed, and scaling up.

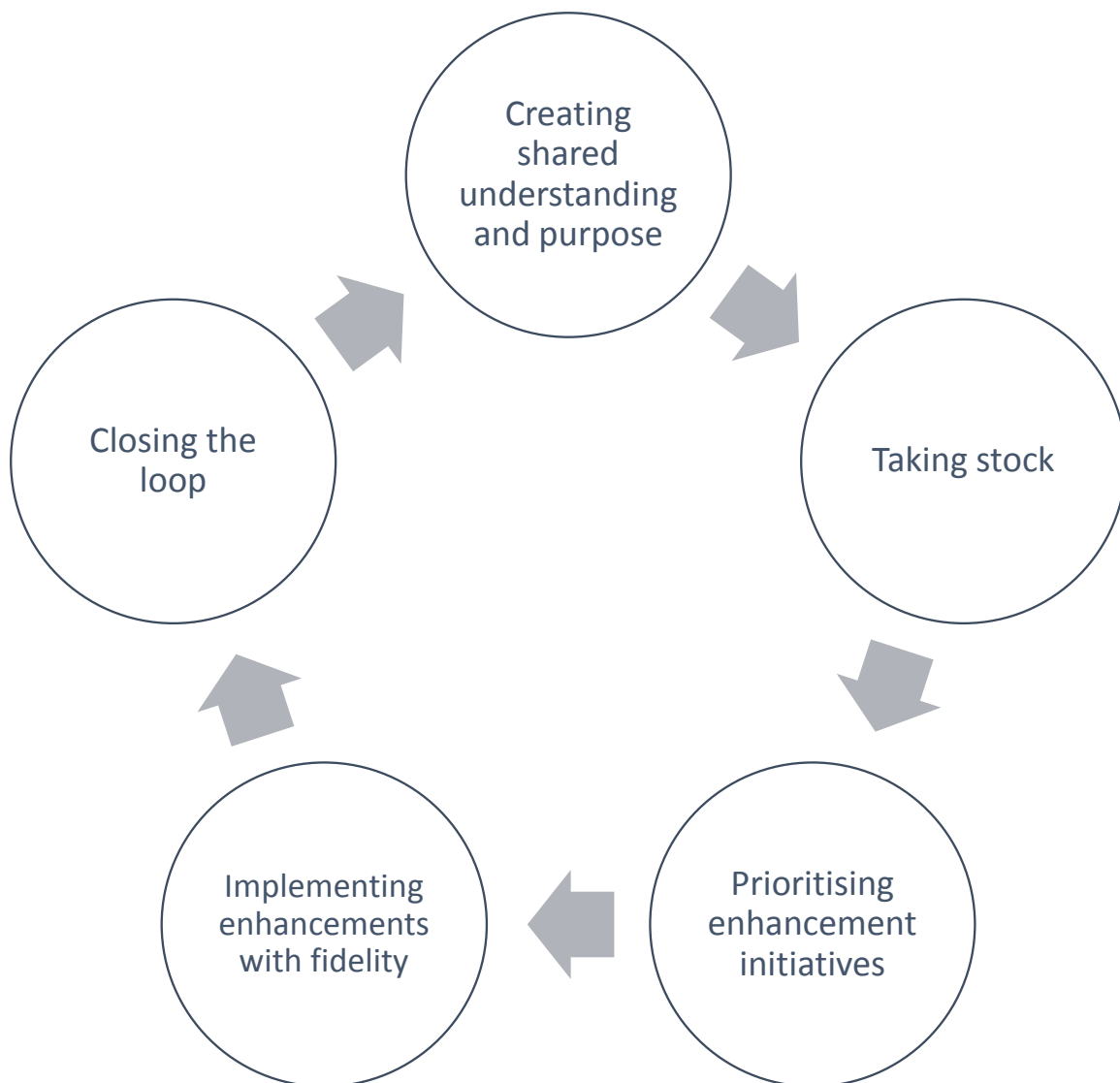


Figure 7: Enhancement Framework (EF): Creating a culture of success

Sometimes characterised as a cycle (for example, ‘plan, do, check, act’ or ‘plan, implement, review, improve’) (Deming, 1994), enhancement practices are better conceptualised as a set of interconnected and interdependent spirals. Specific improvements spiral through iterations of improved performance and increased understanding within a context of leadership and executive management that seeks to optimise overall performance.

Combined, these leadership resources define the successful student experience and clarify strategies for development.

1. The Enhancement Framework (EF) provides a stepwise architecture that helps institutions envision new arrangements and create cultures and conditions for student success.
2. The Nine Qualities (9Q) Model distinguishes qualities that define a successful student experience, and can be used to marshal evidence to articulate student profiles and journeys.
3. The Data Experience Leadership Model (D+E+L) conveys the need for joined-up data-driven leadership to help students succeed.
4. The Institution Maturity Matrix (IMM) helps diagnose the maturity and change-readiness of their institution research, their leadership of the student experience and their perspectives on student success.

These resources provide a Leadership Architecture (Figure 8) for enhancing the 21st century student experience that defines success and clarifies strategies for development. Positioned within the overarching frame of the Enhancement Framework, the logic, in a nutshell, is that achieving success in terms of any or all of the nine qualities comes from joining data with experiences with leadership. The IMM provides the tool to diagnose and advance practice.

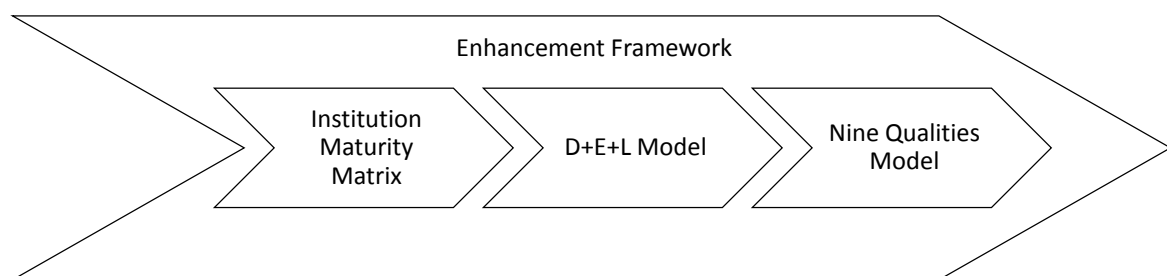


Figure 8: Leadership Architecture: Enhancing the 21st century student experience

5. Steps ahead

Recommending a course

To carry the desired change, the agenda articulated in this report must play out across many levels. Change of this scale needs to be deconstructed into several component initiatives. As

evidenced in this project, such change involves working with vast numbers of people and organisations—academics, leaders, policymakers, industry, vendor firms and, most particularly, students. It may require leading developments through various stages of acceptance, particularly when treading among sensitive matters, like how to represent the value of an institution’s provision.

Three initiatives distilled from the preceding research seem helpful for propelling future innovation. These could play out across institutions, or perhaps even within specific campuses or disciplines. A suite of state-based workshops was convened to test and enrich the ideas advanced in this project (Coates, Kelly & Borden, 2016; see Attachment 1). Appendix B provides an overview of the five workshops, which involved around 200 stakeholders and experts drawn from over 40 institutions and agencies, and Appendix E details other engagement and dissemination activities. In shaping the conclusions, the team sought further advice from experts and project advisors. The initiatives include:

1. Institutional Reshaping—reframing institutions around student success;
2. Student Advisory—creating a platform for activating successful experiences; and
3. Student Agency—establishing an agency for student success.

Institutional Reshaping—reframing institutions around student success

Higher education institutions have a major role to play in taking steps to help students have a successful student experience. There is little doubt that institutions and the people within them have an intrinsic drive to help people succeed. But this energy must be directed in the most effective ways. As suggested throughout this report, entrenched myths and rituals are delivering diminishing returns and there is a need to step beyond these and try new and different ways. Providing fresh perspectives on the student experience, exciting as they may be, is not sufficient to activate major strategic or practical change. Hence, the Enhancement Framework was developed to clarify and exemplify opportunities for sustainable adoption.

The Enhancement Framework is designed to prompt diverse practice within and among institutions. For example, the Leadership Architecture might be used in conjunction with the Institution Maturity Matrix and Data Experience Leadership Model to audit an institution’s data, leadership and experience. This audit might identify areas for collecting or reporting information on facets of the student experience with a view to improving success. Case studies have been distilled from the fieldwork to exemplify this process (Kelly, Coates & Borden, 2016; see Attachment 1).

By way of example, an institution may choose to evaluate its maturity in terms of using data to lead a particular facet of the successful student experience. One of the workshops concentrated on asking contributors to identify indicators for each of the nine qualities and to flag sources of available evidence that can be used for management and improvement. In what specific ways is ‘value’, for instance, defined in unique and helpful ways within a particular institution? What kinds of data are readily available to assess value in the ways

defined by the institution? What are the limitations of existing data, and what new evidence could be developed and collated? What reporting approaches can be used to convey insights regarding value to stakeholders in ways that advance the student experience?

The Enhancement Framework is expressed as a normative ideal. In its purest form, it requires institutions to operate in ways that are fundamentally different to how things are typically done. By describing such an ideal type, it is envisioned that individual institutions can apply the framework in select, priority areas and, through organisational learning, tailor the process to local contexts and expand upon enhancements. Institutions are never likely to reach the ideal type across all enterprise activities, but can make significant progress toward enhancing the student experience—a critical aspect of operation that requires the greatest amount of coordination and collaboration across academic and administrative units.

In advancing this framework it is acknowledged that managing change within higher education institutions is fraught with peril (Borden et al., 2013). The protective silos and other barriers to communication within these organisations serve to quell tensions that can arise from the diverse and sometimes competing objectives of organisational units within the institution, given fixed resources and multiple mission objectives. Fostering the collaboration and communication required to create an institution-wide collaborative culture of student success can reveal tensions and conflicts that the existing order has successfully masked. Accordingly, effective change leadership is required to navigate these rough waters and so is also considered as a core aspect of the Enhancement Framework.

Student Advisory—creating a platform for activating successful experiences

More information about students would build a platform of individual choice and cater activities to each student.

Fourth-year full-time student

Major work is required to build effective mechanisms for advising people how to create a successful higher education experience. There are more people and study choices than ever before, yet many, if not most, people make serious education decisions without anything beyond basic information about what might be done and achieved. Higher education plays a substantial role in people's lives, so more must be done to ensure people are taking the best step forward. Important study choices happen before application or admission, but many more shape the journeys students take as their studies unfold.

This project has articulated nine core qualities that create a successful student experience. Students tell us they want to know if they will get value from higher education, if they will belong to a community and if the time they invest will be an identity-creating experience. They want to discover and achieve things, to be connected with new ideas and people. They want opportunity and to feel personally enabled.

This data audit seeds the process of aligning available insights according to the nine qualities that map out a successful experience, moving away from technocratic reporting constrained

by the source of data. For instance, this presentation frames discrete surveys as subordinate to broader student-oriented perspectives, rather than as dominating entities in their own right. This is a simple, subtle but very important shift. It means students can seek information about experiences in ways that are relevant to them, rather than wade through reports structured by provider or industry or data collection characteristics. Organising data meaningfully is a critical precondition to being able to report insights that help people understand how they can engage in a successful higher education experience.

A platform is required that engages people and communicates key insights. The platform must be nuanced to the interests of the large numbers of people interested in higher education. It must move beyond third-, second- and even first-generation platforms that constrain higher education. It must instead have fourth-generation scope, sophistication and effectiveness (Coates, 2016). It must be broadly accessible to the public, not requiring industry-insider knowledge to find and use, and from first contact build relationships that inspire people to engage in higher education. To even build a minimum viable product, such platforms require designers, statisticians, programmers and tertiary institutions, along with broader infrastructure for positioning the service among existing stakeholders, most particularly aspiring students. It is essential to get right the ownership and management of this platform. Most platforms to date are controlled by governments (given their regulatory interests) or universities (given their oligopolistic interests), but, to be successful, the platform must be embraced fully by the public and students. This is vital, for this platform is to help people engage with higher education rather than safeguard state standards or vested institutional or sectoral interests. This implies that funds to sustain the platform should be sought from end users via some kind of formal arrangement, perhaps embedded in mechanisms for setting and payment of fees. At the outset, though, initial seed funds from institutions, government or the private sector seem necessary.

Nationally, Australia has a patchy track record in this space, with clear opportunity for future improvement. A succession of government-sponsored websites have been built to provide public information (e.g. 'Going to Uni', 'MyUniversity', 'QILT'). In its 2016 budget, the Australian Government allocated funds for more work in this area, principally it seems to add earnings (value and achievement) data to the existing instrument. These are welcome, but government-funded work is moving too slowly, taking more than a decade to develop reports that should have been widely disclosed a decade ago, before the introduction of uncapped student places. As well, these websites are supplier-centric and spatiotemporally misdirected—they emphasise reporting on an institution's past. Their primary purpose should be to help students frame their future, to provide 'insight for your future', not 'data on our past'. Meanwhile, international websites proliferate, as do a range of increasingly sophisticated commercial platforms. To develop the capability required there is a need to move soundly and swiftly.

People need information to guide their participation in higher education, and particularly how they can have a successful experience. Information about higher education abounds, but it is not organised or communicated in effective ways. As a result, millions of people are making uninformed or under-informed decisions. Major development is required to build a platform that harnesses existing data and reports this in ways that help people shape individual journeys in higher education.

Student Agency—establishing an agency for student success

Going to Uni is a choice so more information about what the experience will actually be like is needed, for example what does ‘blended’ mean for students?

Second-year full-time student

Australia has a rich tradition of innovation regarding the student experience and it is important there are means to sustain ongoing development. As conveyed by the broad rationales shaping this project, leadership of the student experience must keep moving, and preferably be a step ahead of policy and practice. Research into past practice, coupled with consultation during this project, has highlighted helpful mechanisms. This section advances the need for a Student Agency focused specifically on promoting student success.

Thinking broadly, a handful of shared interests are required to sustain future work in this area. This study has affirmed the value of developing better advisory mechanisms. Without these, the sector as a whole will suffer, as will the public. Improving these mechanisms will build capacity and infrastructure within each institution. But even to achieve this, analysts must do a substantial amount of technical work to collate, prepare and report new insights in ways that address stakeholders’ concerns. Further, concurrent work is needed to deploy emerging platforms to find how they can be shaped to ignite the interest of people in participating in higher education. This developmental work provides a shared platform for further multi-pronged development, including joint research, training programs and a range of quality improvement practices.

It would appear that initiatives of this type are most successful when they are ‘co-created’, rather than ‘driven’ or ‘owned’ by an interested individual or organisation. In a nutshell, co-creation involves bringing interested people together to jointly develop a valued outcome. Governments and institutions are powerful agents in the tertiary ecosystem. They have enormous capacity to steer discourse, but by themselves they are unable to deliver the required change. Students, the public, business and academics must be jointly part of future work on the student experience. Tertiary institutions have always had an intrinsic interest in helping students succeed, but this has shaped up as a competitive frontier with changes in higher education markets and the broader economy. ‘Coopetition’, in the language of strategy, seems the best way forward.

Clearly, a structure is required to support this student experience work. In 2015, the government in the United Kingdom proposed establishing an Office for Students to embrace and advance broad work in this area (BIS, 2015). Such development signals the lack of existing infrastructure, also the case in Australia. Many initiatives, networks and agencies touch parts of the future proposed in this project. But whether considered alone or together, none are positioned to advance the full agenda. For instance, the Australian Universities Quality Agency used to host an annual forum and good practice database (AUQA, 2010) which was not sustained when the agency was superseded by the Tertiary Education, Quality and Standards Agency (TEQSA). Relevant research and engagement was stimulated by the Australasian Survey of Student Engagement (Coates, 2009), which in 2011 was institutionalised into the mandatory national University Experience Survey (Radloff, Coates, James and Krause, 2012), now conducted by generic research agencies sponsoring

little broader capacity development. Technical facets of the proposed work might be advanced by the Australasian Association for Institutional Research (AAIR), though this community is changing given broader role and workforce shifts. The Higher Education Research Development Society of Australasia (HERDSA) focuses on scholarly work. The Australian Government has closed the Office for Learning and Teaching (which funded this project), and the Quality Indicators for Learning and Teaching website is a decontextualised initiative in need of major reform and repositioning to meet the future needs exposed through this project. Agencies like Graduate Careers Australia (GCA) focus on the graduate experience. Tertiary Admissions Centres (TACs) are owned by universities and focus on applications and admissions. Major student groups focus much more on political advocacy than on broader capacity development. Commercial conferences have proliferated, but these pay dividends to host organisations rather than the broader community. Several agencies exist to lead research (most prominently ARC and NHMRC), and it is revealing that Australia lacks an agency dedicated to advancing the interests of students.

Given the growing role students play in investing in and creating higher education, there is a strong case for an agency that exists to advance their interests. Through its work, this agency could help address the failures identified throughout this report, which exist at all stages of the education value chain—awareness, application, admissions, persistence, graduation and employment. Developing new work that advances the success of 21st century students will shift beyond entrenched constraints associated with how people enter higher education, will help engage and retain students through to graduation and will help more effectively convey students into their future professional work.

The government, leadership and management of such an agency must be carefully planned. The above remarks portend it should have a not-for-profit status. Additional work is required to clarify the nature and remit of such an organisation, and whether it might be aligned with an existing capability. A suitably governed network might be established that has as its mission the advancement of a broad suite of innovative work on the successful student experience. In this connection, it is difficult to ignore persistent bipartisan political calls for an expert higher education advisory body that is independent of both government and the sector. A commercial option might prevail—potentially without any input from tertiary institutions—considering the powerful role that online job boards have grown to play in people’s lives.

6. Summary

This project has aimed to prompt sustainable strategic change through improving institutional capacity to enhance the student experience, by building new concepts for understanding students, identifying new data sources and approaches and engaging institutions in leading enhancement work.

Through research, consultation, national fieldwork and reporting, the project has furnished initiatives, resources and documents that have striven to provoke a step-change in how we think about and lead higher education student success.

The work has clarified three specific initiatives which would do much to advance higher education:

1. Institutional Reshaping—reframing institutions around student success;
2. Student Advisory—creating a platform for activating successful experiences; and
3. Student Agency—establishing an agency for student success.

These initiatives spring from insights structured by four leadership resources produced in this project:

1. Enhancement Framework (EF)—which through a stepwise architecture helps institutions envision new arrangements and create cultures and conditions for student success;
2. Nine Qualities Model (9Q)—which distinguishes qualities that define a successful student experience, and can be used to marshal evidence to articulate student profiles and journeys;
3. Data Experience Leadership (D+E+L)—which conveys the need for joined-up data-driven leadership to help students succeed; and
4. Institution Maturity Matrix (IMM)—which institutions can deploy to diagnose the maturity and change-readiness of their institution research, their leadership of the student experience and their perspectives on student success.

Combined, these leadership resources provide a Leadership Architecture (LA) for enhancing the 21st century student experience that defines success and clarifies strategies for development. Positioned within the overarching frame of the Enhancement Framework, the logic, in a nutshell, is ‘9Q = D+E+L’, that is, achieving success in terms of any or all of the nine qualities comes from joining data with experiences with leadership. The IMM provides the tool to diagnose and advance practice.

These initiatives and resources are documented in a suite of reports, workshops, papers and resources. Through these contributions, the project has sought to ferment formative dialogue regarding the data and leadership required to help each student succeed, and to conduct scoping work to clarify what infrastructure must be developed. Project outcomes provide foundations and seeds for future development.

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Appendix A: Certification by Deputy Vice Chancellor (or equivalent)

I certify that all parts of the final report for this OLT grant provide an accurate representation of the implementation, impact and findings of the project, and that the report is of publishable quality.

Name: **Professor Richard James, Pro Vice Chancellor (Academic), University of Melbourne**

Date: **Thursday 4 August 2016**

Appendix B: The innovation approach

Phase 1: Development

Detailed planning

The project harnessed fresh perspectives and practices on the student experience into the 21st century. In the Project Proposal (Coates, Mahat, Borden, Corrin, Lodge, Long, Nair, Naylor, Powell, Wilkinson & Zimmerman, 2015; see Attachment 1), the team advanced an innovative approach to the student experience by building on solid and established theoretical research and practice, providing a current snapshot of institutional development, creating a platform for students to reflect on their experiences, and advancing enhancement initiatives to stimulate future innovation. As detailed in the Project Brief (Coates, Mahat, Borden, Corrin, Lodge, Long, Nair, Naylor, Powell, Wilkinson & Zimmerman, 2015; see Attachment 1), an ongoing consultative and collaborative approach was woven into the project as part of our broader aim of engendering evidence-based change and forging ongoing partnerships. In this way, the project team was able to refine, validate and execute effectively the conceptual, technical and substantive elements of the project at each of the three stages. **Error! Reference source not found.** presents the project schedule.

Phase	Activity	2015											2016						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J
1: Development	Project initiation																		
	Detailed project planning																		
	Background Research Report																		
	PRG meeting, Progress Report																		
2: Validation	Institutional scan																		
	Student interviews																		
	Model development																		
	New Perspectives and Prospects Report																		
	PRG meeting, Progress Report																		
3: Engagement	Enhancement Framework																		
	21st Century Students Report																		
	Project Website																		
	National Engagement Workshops																		
	PRG meeting, Progress Report, Acquittal																		

Figure 9: Project schedule

Expert team and advisors

This project was led by a team at the cutting edge of the field with extensive experience in conceptual and empirical research. Core researchers were located at The University of Melbourne’s Centre for the Study of Higher Education (CSHE): Hamish Coates (Project Director), Paula Kelly (Lead Researcher, 2016 Manager), Linda Corrin (Researcher), Jason Lodge (Researcher), Marian Mahat (2015 Manager) and Ryan Naylor (Researcher). The broader team included experts in institutional strategy, quality enhancement, institutional research, student experience, technology, student metrics, student learning and development, student identity and education policy: Vic Borden (Indiana University, Bloomington), Phil Long (University of Texas, Austin), Kelly Matthews (The University of Queensland), Sid Nair (The University of Western Australia), Damian Powell (Janet Clark Hall), David Wilkinson (Macquarie University) and Helen Zimmerman (Navitas). The team

convened every three to six months throughout the project and kept in ongoing contact as required.

An extended network of national and international advisors provided feedback on instrumentation, research briefings, conceptual design, theoretical understanding and global perspectives. The Project Reference Group (PRG) included: Lori Beslow (MIT), George Brown (International College of Hotel Management), Malcolm Brown (EDUCAUSE), Simon Buckingham Shum (University of Technology, Sydney), Thomson Ch'ng (Council of International Students Australia), Darrell Evans (Monash University), Al Essa (McGraw-Hill Education), Dominic Orr (FiBS) and Philippa Pattison (The University of Sydney). The team spoke with PRG members as required throughout the project. Two group meetings were convened along with a series of consultations towards the end of the project.

Advice, feedback and assistance was provided by the project evaluator, Dr Grace Lynch (Royal Melbourne Institute of Technology) (Lynch, 2016; see Attachment 1), and personnel at the Australian Government's Office for Learning and Teaching (OLT) and the Department of Education and Training (DET). In addition to ongoing liaison, verbal progress reports were delivered as required.

Background reviews and development

In Phase 1, background research was conducted to construct definitions and concepts, review relevant contexts and consult with experts and stakeholders. The team systematically compiled, then synthesised, a broad range of theoretical and empirical research to seed new concepts and build a working conceptual design. Part of this background research involved taking stock of existing technical work and contexts. A review of websites and other resources was undertaken, including a host of reports from relevant recent projects. This phase of the project also involved ongoing consultation with around 50 higher education experts, leaders and staff and other stakeholders, including from the private sector (Table 3).

Table 3: Phase 1 consultation overview

Organisation type	Count
United States higher education institution	9
European higher education institution	11
Australian higher education institution	27
Australian higher education peak agency	4
International agency	3
International corporation	4

A background research report was prepared (Coates, Kelly & Naylor, 2015a; see Attachment 1). Fieldwork materials were developed, including population and sampling specifications, letters of invitation to institutions and students, an institution inventory and student interview schedule, and response and data management resources (Coates, Kelly & Naylor, 2015b; see Attachment 1). Critical feedback was obtained from the PRG and other experts.

Phase 2: Validation

Overview

Phase 2 of this project involved substantial further engagement with Australian higher education, structured as part of formal fieldwork activities. Insights from this engagement helped form a model of the student experience.

Institution scan and student interviews

All 41 Vice-Chancellors from Australian universities and Chief Executive Officers of 94 higher education institutions (those with more than 1000 enrolments, TAFEs, and institutions part of a broader enterprise) were invited to participate in the project. Thirty-one institutions, including 18 universities, returned a completed institutional inventory. These institutions ranged across provider types (18 universities, 13 other higher education institutions), states and territories (eight in Queensland, eight in New South Wales, seven in Victoria, four in Western Australia, two in South Australia and two in the Australian Capital Territory), and included diverse student mixes. The project team undertook a further suite of six in-depth site visits, interviewing 12 institutional contacts to provide deeper understanding of practice and challenges that would inform case studies. Throughout the processes, collegial relationships were established and maintained with participating institutions and their representatives.

Interviews with undergraduate students began in tandem with the institutional scan and continued into Phase 3 of the project. All 31 participating institutions were asked to recruit undergraduate students for interview. Semi-structured interviews with 44 students were conducted either face-to-face or over the phone for approximately 20–30 minutes to garner individual student views, experiences and perceptions of their student experience. These students were from metropolitan and regional universities as well as small- to mid-size private institutions and pathway providers. Participating students represented a wide range of ages, diverse fields of education and varying cultural backgrounds.

Model development

The team designed the Nine Qualities' Model by distilling the Phase 1 research and consultation and the Phase 2 empirical work. Indicators and data sources were mapped for each quality to test the feasibility of uptake. The interim *New Perspectives and Prospects Report* (Coates, Kelly & Naylor, 2016; see Attachment 1) was drafted. This presented fieldwork findings, an introduction to the Nine Qualities Model, the indicator and data mapping, and prompts to stimulate new sector-wide conversations about the student experience. Phase 2 concluded with extensive dissemination of this report to over 250 colleagues, including all Deputy Vice-Chancellors (Academic) or equivalent in Australia, institutional and student participants, international experts, OLT cluster group members and the higher education media.

Phase 3: Engagement

Enhancement Framework

In Phase 3, the project focused on engaging even further with experts and stakeholders. The team produced the Enhancement Framework (Borden, Coates, Kelly & Zilvinskis, 2016; see Attachment 1) to service an architecture for linking the innovative perspectives formed through the project with existing practices that fieldwork results indicated were diverse and, in most cases, underdeveloped. Bringing together concepts regarding institutional research, leadership principles and quality assurance frameworks, the Enhancement Framework incorporated evidence-based case studies and good-practice guidelines showing how institutions can embed leadership strategies to use new data and technologies to understand and enhance students' experience. As such, the framework provided a platform institutions could tailor to their own contexts and needs. Building the capacity and shaping the culture necessary to re-think how the sector approaches the student experience into the next half-century will be a critical to realising and utilising the findings this project has contributed.

Consultation and validation

The project consulted with experts, stakeholders and students throughout each phase of the project. As part of final sector engagement, a series of state-based workshops were led in five states to yield unfettered feedback on project rationales, research, model development and enhancement strategies. Promotional materials were produced (Coates, Kelly & Borden, 2016; see Attachment 1) and distributed to institutions and key agencies across the higher education sector. The workshops were oversubscribed within a week, signalling unaddressed enthusiasm across Australia for conversations about the student experience. Table 4 summarises attendance—183 staff from over 40 institutions and organisations. Importantly, the workshops were attended by a diverse group of stakeholders, including academic staff and leaders, higher education researchers, student experience practitioners, higher education data specialists and representatives from university networks. Dialogue at these workshops affirmed and validated the concepts and strategies necessary to advance new lines of work into the student experience and provided useful feedback to refine and target findings in the final project report. Following the workshops, a number of individuals and institutions expressed interest in participating further in student experience work of this kind.

Table 4: Phase 3 workshop attendance

Date	State	Venue	Participants
14 June	Victoria	The University of Melbourne	39
15 June	New South Wales	The University of Sydney	37
15 June	New South Wales	Navitas, Wynard Green	31
16 June	Queensland	The University of Queensland	26
21 June	Western Australia	The University of Western Australia	23
26 July	Australian Capital Territory	The Australian National University	27
Total			183

Reporting and dissemination

The project concluded by taking stock and identifying next steps. This involved team debriefing following the national engagement workshops, reviewing ideas and engagements generated along the way, identifying next steps and associated recommendations, preparing case studies (Kelly, Coates & Borden, 2016; see Attachment 1) and drafting of this report (Coates, Kelly, Borden & Naylor, 2016). As anticipated, this report draws on prior materials but also, for the first time, elaborates the new ideas and techniques validated throughout the project to inform student experience practices and policies. It includes a high-level summary and recommendations for future work. Feedback was received from the Project Reference Group, Project Evaluator and Australian Government, and the report was delivered. All materials were made available on the project website: <http://melbourne-cshe.unimelb.edu.au/research/experience/innovative-perspectives>

This project serves as baseline work for future development. To activate this, project team members will draw on their substantial experience disseminating outcomes in ways that build awareness, appreciation and change. Following formal project completion, diverse and sustained dissemination through various media and channels will be used to ensure that practice changes in the sector. Sustained effort will be put into informal dissemination through the team's professional networks. A priority will be to ensure the widest geographic and institutional dissemination.

Appendix C: Fieldwork instruments

Institution inventory

Institution Inventory
Innovative perspectives and approaches for enhancing the student experience



Thank you for participating in the fieldwork of this research project.

This Institution Inventory is organised into modular sections. It is supplied in document format to enable flexible completion and dissemination should you wish to forward to colleagues for their input.

We would be grateful if you could return the completed inventory by **Thursday 3 September 2015**.

A project member will contact you before this date to provide assistance.

Should you require further information, or have any concerns about the project, please do not hesitate to contact Dr Paula Kelly on 03 8344 5233 or student-experience@unimelb.edu.au.

Institution background and context

What is the *name of your institution*?

What is/are your name(s)?

What is/are your title(s)?

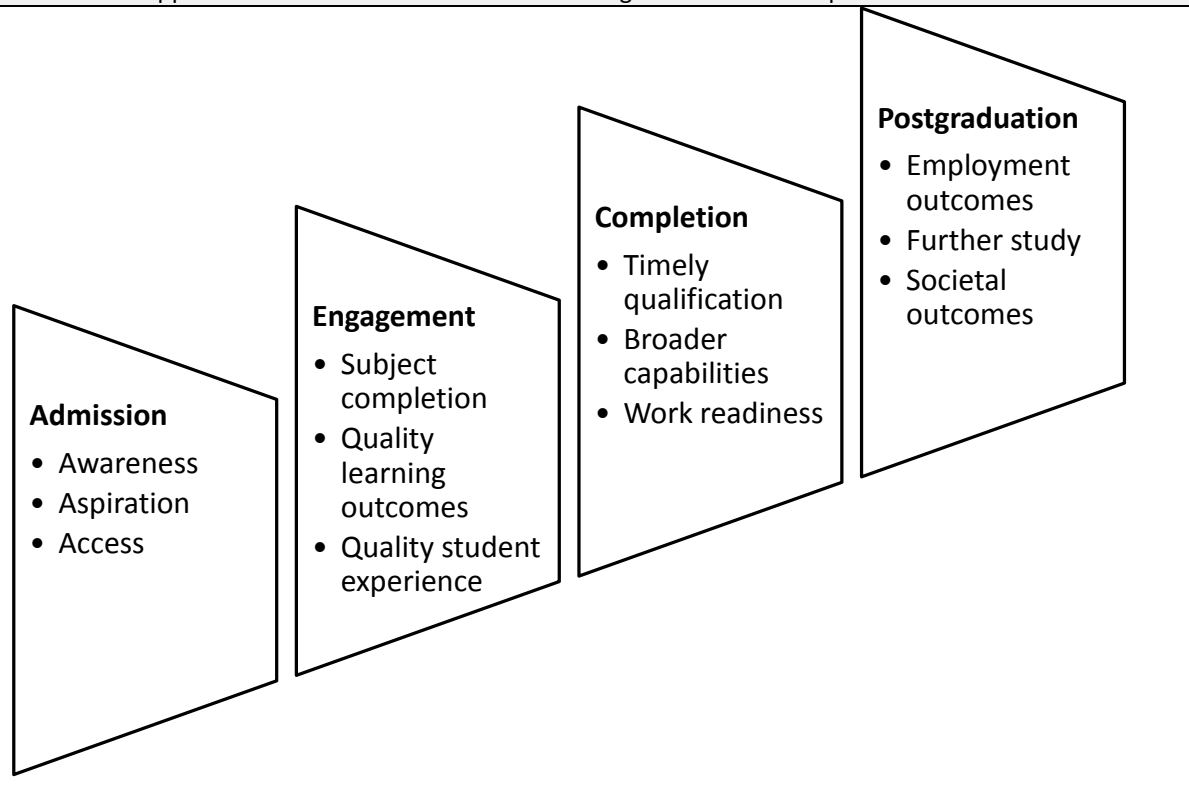
Questions about 'student success'

In what ways does your institution define 'student success' in various plans and actions? What plans and actions are most relevant?

What is distinctive about your institution's approach to defining student success compared with other Australian higher education institutions?

Thinking generally, how do most students at your institution appear to define student success?

A model of student success is presented below, showing general labels for key progression thresholds. Does this model align with your institution's approach to student success? If not, why not? What is your institution's approach? What additional content or configurations would improve the model?



Questions about your students

Why do students choose your institution? What evidence is collected regarding student choice (e.g. market research, admissions feedback, administrative data, data on partnership programs, academic advice)?

Thinking across your institution as a whole, what specific factors would appear to be most important to helping students at your institution succeed?

What evidence is collected to determine whether students at your institution are achieving success as expected (e.g. institutional research, informal feedback, information from external studies, anecdotal feedback, staff feedback)?

How would you know whether each student at your institution is getting personal, educational, professional, financial value from her/his higher education? What mechanisms are in place to determine the value that your institution provides to students, and areas in need of improvement?

What steps does your institution take to find out what students do after leaving your institution (e.g. national surveys, alumni programs, institutional tracer studies, dropout surveys)?

About student identity

How does your institution define/record students in formal administrative systems (e.g. mandated national

data collections, psychological profiles, discipline/industry information, cognitive data)? What informal approaches to identifying students would appear to exist in your institution's infrastructure or culture?

In the two columns below, please list factors which may be important to understanding students at your institution. Examples include: age, gender, cultural background, family environment, living arrangements, online profiles, employment status, extra-curricular clubs, historical information from high school or other institution, friendship groups.

Not very important

Very important

How has your institution's student profile changed/diversified over the last five years? How has your institution responded to changing student profiles through new research, new data, new management approaches?

Describe the 'typical' sets of students at your institution? What are these typical students' essential sociological characteristics? Examples may include: socio-demographic matters, economic matters, educational pathways, ways of studying, learning engagement, etc.

Through what management-related data collections does your institution recognise and cater to student diversity (e.g. performance tracking systems, CRM platforms)?

Data collection and use

Overall, what technologies, platforms and networks do your students use? Thinking across your institution, what inquiries have been made into what students are using?

What are the most widespread methods used by your institution to source information on students (e.g. admissions data, enrolment forms, market research)?

How does your institution use the information it collects to support students (e.g. external reporting, providing diagnostics to academics, feedback/advice to students, public reporting)?

What analytical/statistical information is provided to students on their study? How is this information represented to students?

Describe your institution's maturity in using data to support student success? What are specific opportunities for improvement?

Academic leadership for institutional change

In general, what would it be most helpful for your institution to know about to help each student make her/his study more successful?

What additional feedback could your institution provide and to which stakeholders (e.g. academics, current or prospective students, public) to better help each student succeed?

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The following attributes are important factors in executing and sustaining institutional change:

- Culture—the environment created by the totality of systems, structures and people;
- Structure—the operating framework including governance and management;
- Systems—the operational elements of the institution including IT systems;
- Leadership—the style of management and the strategic direction of the institution;
- Staff—the current breadth and scope of roles responsible for operationalising systems; and
- Skills—the development of staff skills and knowledge required to operationalise institutional systems.

In each box below rate the importance of each attribute for improving: student success; understanding students; and education analytics. Provide a score ranging from '1' (low importance) to '5' (high importance).

	Culture	Structure	Systems	Leadership	Staff	Skills
Student success						
Understanding students						
Education analytics						

To what extent do your institution's leaders use data to inform policies?

At your institution, what are the <u>main obstacles</u> to improving evidence-based approaches to understanding students and helping them succeed?

Student interview schedule

Study success: Admission
1. What were the main things that attracted you to further your studies?
2. Why did you choose this institution? Are these reasons still important to you?
Study success: Engagement
3. What are the most rewarding aspects of being a student PROMPT e.g. quality of teachers, support staff, campus life, positive academic results, clubs, socialising, learning new things, flexibility ?
4. Are you achieving what you had hoped for?
5. Are you achieving what is expected by your institution?
Study success: Completion
6. What outcomes really count in your study PROMPT (e.g. results, finishing on time, having broader experiences, completing your course, employment)?
7. Do you feel you are getting value from your higher education experience?
Study success: Post-graduation
8. Do you know what you are going to do after you complete your current studies?
9. <i>How close are you to achieving this?</i>
10. What do you see as the lifetime benefits of studying higher education?
11. How would this be different if you hadn't undertaken higher education study? PROMPT IF NECESSARY
12. <i>Do you think you will be better off in any other ways?</i>

Study success: General
<p>13. In what ways do you describe 'student success'?</p> <p>14. How do you think your institution defines study success, and what do you think about that?</p>
Identity
<p>15. Thinking very generally, how would you <u>describe yourself as a person</u> PROMPT (e.g. age, gender, cultural background, family environment, postcode, living arrangement, from the country, online profile, job, clubs, friends, high school, friendship group)?</p> <p>16. Now thinking more specifically, how would you <u>describe yourself as a student</u>?</p>
Data use and collection
<p>17. What technologies, platforms and networks do you use <u>as a student</u> (Facebook, Twitter, LMS, portal)? <i>First, for interacting with peer? With staff? Other tools for coursework completion? Other aspects of student life?</i></p> <p>18. What types of information do you think your institution collects about you?</p> <p>19. How do you think your institution uses this information about you?</p> <p>20. <i>Do you worry about such uses, or do they seem reasonable?</i></p>
Institutional change
<p>21. What could your institution do better to <u>help you succeed</u>?</p> <p>22. What should your institution know about you to make your study more successful?</p> <p>23. <i>Would you be happy supplying that information?</i></p> <p>24. What additional information could your institution provide to better help you succeed? Please think in terms of formal learning as well as broader experiences.</p>

Appendix D: Nine Qualities Model (9Q): Indicator and data mapping

Quality	Associated indicators	Data availability	Data needs
Discovery	Specific indicators that underpin this quality include: development of new technical, generic and personal skills; advanced problem-solving skills, production of body of creative academic work; understanding academic culture and expectations; and acquisition of new interests.	Based on audit of existing information, lagged data is available from national student and graduate surveys. There is a shortage of collected data that measures students' capacity for discovery; however, internal data points, including curriculum and assessment systems, and commercial online profiling platforms would yield richer information.	Adequately assessing this quality would involve making available and integrating data collected by student surveys, institutional systems and commercial platforms.
Achievement	Specific indicators that underpin this quality include: admission; passing; retention; learning outcomes; completion; and articulation into other qualifications.	Based on audit of existing information, lagged data is available from national student surveys and data collections and state-based admissions agencies. Additional information could be harnessed through e-portfolios or tracking mechanisms. There is a shortage of publicly available information on learning outcomes.	Adequately assessing this quality would involve making available and integrating data collected by public agencies, and working with institutions to develop a learning outcomes indicator.
Connection	Specific indicators that underpin this quality include: exposure to industry events, speakers and networks; undertaking work placements; student exchange and volunteering; and forming academic, collegial and social networks.	Based on audit of existing information, lagged data is available from national student surveys. Additional information could be gained from institutional systems that record data on work integrated learning experiences, online discussion boards, interaction in student groups, and commercial networks used in coursework. New collections that log student attendance or participation in industry or academic events. Subscriptions, membership, and participation in professional or academic networking platforms, organisations and chat rooms would indicate connectedness.	Adequately assessing this quality would involve making available, formalising and integrating data collected by national surveys, institutional systems and records and commercial platforms.

Quality	Associated indicators	Data availability	Data needs
Opportunity	Specific indicators which underpin this quality include: awareness of career opportunities and strategies; further study readiness; graduate employment; participating in collaborative networks; and participating in experiential learning or in leadership roles.	Based on audit of existing information, lagged data is available from national student, graduate and employer surveys. Additional information could be gained from admissions agencies and institutional alumni information and systems. There is a shortage of collected data that measures opportunities seized by individual students; however, participation in institutional events, leadership roles, experiential activities and graduate outcomes could be logged.	Adequately assessing this quality would involve making available, formalising and integrating data collected by national surveys, institutional systems and records and commercial platforms.
Value	Specific indicators that underpin this quality include: graduate outcomes; course fees; course duration; work experience opportunities; physical and online facilities and services; perceptions of teacher quality; identification of study purpose aspirations; and student information.	Based on audit of existing information, lagged data is available from national student, graduate and employer surveys. Additional information could be gained from student service use and incidence of attendance, exit interviews, institutional alumni systems and social media platforms.	Adequately assessing this quality would involve making available, formalising and integrating data collected by national surveys, institutional systems and records, and commercial platforms.
Belonging	Specific indicators that underpin this quality include: feeling welcome; awareness and participation in groups, forums and clubs; participation in online and face-to-face curricular and non-curricular activities; and forming and maintaining relationships.	Based on audit of existing information, lagged data is available from national student and graduate surveys. Additional institutional systems that log participation, attendance and duration of experience on campus or online could be used in conjunction with records that indicate attendance at orientation events, membership and participation in groups. Other new forms of data could include real-time student feedback about perceptions or swipe-card data. Alumni information and commercial online profiling offer other data.	Adequately assessing this quality would involve making available, introducing, formalising and integrating data collected by national surveys, institutional systems and records, student behaviour and perceptions, and commercial platforms.

Quality	Associated indicators	Data availability	Data needs
Identity	Specific indicators that underpin this quality include: leadership skills; cultural awareness; emotional intelligence; and self-reflectiveness.	Based on audit of existing information, lagged data is available from national student and graduate surveys. Institutional systems including administrative data and others that house assessment items including reflective and practical journals, capstone experiences and exchanges. Data that identifies participation in mentoring, leadership or orientation events or peer-assisted programs. Information about student awards and recognition and volunteer roles for both curricular and non-curricular activities could be captured. Other commercial online systems or personal blogs offer additional data sources.	Adequately assessing this quality would involve making available, and integrating existing data collected by national surveys, institutional systems and records, and commercial platforms and harnessing new personal, behavioural and reflective information from both institutional systems and commercial platforms.
Enabled	Specific indicators that underpin this quality include: student aid; scholarship availability; teacher quality; assessment feedback; academic support; online and physical resources; and student development sessions.	Based on audit of existing information, lagged data is available from national student and graduate surveys. Information from tertiary admission centres and institutional scholarship data could be used. Additional institutional systems that record incidence of support services, attendance at non-compulsory curricular events, use of online and physical resources including careers advice or utilisation of digital systems. Institutional information about alumni and commercial online profiling offer other data sources.	Adequately assessing this quality would involve making available, and integrating data collected by national surveys, institutional systems and records, and commercial platforms.
Personalised	Specific indicators that underpin this quality include: staff engagement with students; tailoring curriculum and teaching to students; experience/advice that is tailored to individuals; and provision of real-time assessment.	Based on audit of existing information, data is available, or could be made available, from national student surveys and institution systems on the extent to which staff and infrastructure are personalised. There is more information available on commercial platforms.	Adequately assessing this quality would involve making available and integrating data collected by institution systems, national surveys, and commercial platforms.

Appendix E: Project engagement and dissemination

Presentations

Coates, H. & Bice, S. (2015). Improving higher education through more transparent sustainability reporting. Paper presented at the European Higher Education Society (EAIR) Forum. Krems, Austria.

Coates, H. & Kelly, P. (2017). Innovative approaches to enhancing the student experience. Paper presented at the American Educational Research Association (AERA). San Antonio, United States.

Coates, H. (2013). Using data on student experience and learning to improve education. Keynote paper presented at the Assessing and Reporting Learning and Teaching Outcomes Conference. Melbourne, Australia.

Coates, H. (2015). A new ethnography for higher education: Innovative perspectives and approaches for enhancing the 21st century student experience. Keynote paper presented at the 6th International Conference on Higher Education Research. Moscow, Russia.

Coates, H. (2015). Consequences of expanding student contributions for higher education markets, institutions, functions and stakeholders. Paper given at the International Seminar on Innovative Methods of Financing of Higher Education. New Delhi, India.

Coates, H. (2015). How can universities prepare for the future in a changing world? How will this impact growth? Keynote presentation given at the 7th Annual Higher Education Summit Asia. Singapore, Singapore.

Coates, H. (2015). Implications of internationalisation for higher education evaluation and work. Keynote presentation given at the International Symposium on University Internationalization. Chengdu, China.

Coates, H. (2015). International trends in educational assessment and evaluation. Invited seminar for the Institute of Higher Education, Shanghai Normal University. Shanghai, China.

Coates, H. (2015). International trends in educational assessment and evaluation. Invited seminar for Institute of Higher Education, Zhejiang University. Hangzhou, China.

Coates, H. (2015). International trends in educational assessment and evaluation. Invited seminar for the Centre for World-class Universities, Shanghai Jiao Tong University. Shanghai, China.

Coates, H. (2015). International trends in educational assessment and evaluation. Invited seminar for the Institute of Higher Education, Beijing Normal University. Beijing, China.

Coates, H. (2015). International trends in educational assessment and evaluation. Invited seminar for the Institute of Education, Tsinghua University. Beijing, China.

Coates, H. (2015). Learning sciences and online education. Keynote paper presented at the Symposium on Learning Sciences and Online Education. Beijing, China.

Coates, H. (2015). Leveraging data for strategic advantage. Panel participant at the EDUTECH Conference. Brisbane, Australia.

Coates, H. (2015). New perspectives on higher learning. The National Centre for Assessment in Higher Education (QIYAS) Conference, Saudi Arabia.

Coates, H. (2015). New transparencies for enhancing quality and productivity of higher education. Paper given at the RIHE-CSHE Spring Research Meeting. Melbourne, Australia.

Coates, H. (2015). New transparencies for higher education. Dean's Lecture presented at the Melbourne Graduate School of Education. Melbourne, Australia.

Coates, H. (2015). Rising of the new digital generation—How to bring technology into the classrooms? Panel participant at the 7th Annual Higher Education Summit Asia. Singapore, Singapore.

Coates, H. (2015). Teaching in the future academic workforce. Invited seminar for the Institute of Teaching and Learning Innovation (ITaLI), The University of Queensland. Brisbane, Australia.

Coates, H. (2015). Teaching in the future academic workforce. Invited seminar for the Institute of Teaching and Learning Innovation. The University of Queensland. Brisbane, Australia.

Coates, H. (2015). The future of assessment. Keynote for the Board of Studies Teaching and Educational Standards. Sydney, Australia.

Coates, H. (2015). Transparent Universities: International trends in educational assessment and evaluation. Invited seminar for the CSHE Issues and Ideas Seminar Series. Melbourne, Australia.

Coates, H. (2015). Valid assessment of learning outcomes in higher education: International comparison and methodological challenges. Seminar discussant at the American Educational Research Association (AERA) Annual Meeting. Chicago, United States.

Coates, H. (2016). Building institutional research in Asia. Keynote paper presented at the International Conference on Institutional Research. Taichung, Taiwan.

Coates, H. (2016). Feasible options for building evidence on learning outcomes. Keynote paper presented at the ASIIN International Conference. Germany, Berlin.

Coates, H. (2016). Improving student engagement in tertiary education. Keynote paper presented at the Hong Kong Council for Accreditation of Academic and Vocational Qualifications 25th Anniversary Seminar. Hong Kong SAR, China.

Coates, H. (2016). Leading transparent higher education. Invited paper presented at the University of Hong Kong. Hong Kong SAR, China.

Coates, H. (2016). Measuring productivity in higher education: Selected APO member countries. Plenary paper presented at the Conference on Raising Productivity in Higher Education. Jakarta, Indonesia.

Coates, H. (2016). Productivity indicators in higher education: What do they mean? Plenary paper presented at the Conference on Raising Productivity in Higher Education. Jakarta, Indonesia.

Coates, H. (2016). Productivity, quality and performance excellence in higher education. Plenary paper presented at the Conference on Raising Productivity in Higher Education. Jakarta, Indonesia.

Coates, H. (2016). Student experience, participation and retention. Paper presented at the Office for Learning and Teaching Conference. Melbourne, Australia.

Coates, H. (2016). Using student engagement surveys for tertiary improvement. Workshop convened for the Hong Kong Council for Accreditation of Academic and Vocational Qualifications. Hong Kong SAR, China.

Coates, H. (2016). What is quality in higher education? What does it mean, how is it measured, and who decides? President's Roundtable at the European Higher Education Society (EAIR). Birmingham, United Kingdom.

Coates, H. (2017). Innovative Approaches for Enhancing the 21st Century Student Experience. Seminar presented at xTalks, Massachusetts Institute of Technology. Boston, United States.

Coates, H. (2017). Innovative Approaches for Enhancing the 21st Century Student Experience. Seminar presented at the Ontario Institute for Studies in Education. Toronto, Canada.

Coates, H. (2017). Unlocking individual success: Emerging approaches to tertiary admissions. Keynote presented at the International Conference on the Closer Cooperation between Secondary and Higher Education Facing the Challenge of the New Policies of University Recruitment. Beijing, China.

Coates, H., Kelly, P. & Naylor, R. (2015). Leading online education from participation to success. Keynote paper given at the Second Symposium of Learning Science and Online Education. Beijing, China.

Coates, H., Lennon, M.C., Ursin, J. & Zlatkin-Troitschanskaia, O. (2015). Innovation to improve the assessment of student learning outcomes. Paper presented at the European Higher Education Society (EAIR) Forum. Krems, Austria.

Kelly, P. (2016). Understanding student expectations for developing a new perspective for the 21st century student experience. Speaker at the Student Retention and Success Conference, Melbourne, Australia.

Kelly, P., Coates, H., Naylor, R. & Mahat, M. (2016). New perspectives and prospects for enhancing the student experience. Presentation given at the European Higher Education Society (EAIR). Birmingham, United Kingdom.

Kelly, P., Corrin, L. Naylor, R. & Coates, H. (2015). Innovative perspectives and approaches for enhancing the student experience. Panel participant at the Higher Education Research and Development Society of Australasia (HERDSA) annual conference. Melbourne, Australia.

Naylor, R. (2015). Innovative perspectives and approaches for the student experience. Students Transitions Achievement Retention & Success Conference (STARS). Melbourne, Australia.

Naylor, R., Coates, H., Corrin, L. & Kelly, P. (2016). Contemporary approaches to student engagement in Australia. Paper presented at the International Conference on Student Engagement for Quality Assurance of University Education. Tokyo, Japan.

Naylor, R., Kelly, P. & Coates, H. (2015). The (r)evolution of student survey research to student analytics. Workshop presented at the NACADA Annual Conference. Melbourne, Australia.

Project reports

Borden, V., Coates, H., Kelly, P. & Zilvinskis, J. (2016). *Enhancement Framework for the Student Experience*. Parkville: University of Melbourne.

Coates, H., Kelly, P. & Borden, V. (2016). *2016 National Engagement Workshops: Enhancing the Student Experience—Innovative Perspectives and Approaches*. Parkville: University of Melbourne.

Coates, H., Kelly, P. & Naylor, R. (2015a). *New Anthropology for Higher Education: Background research report*. Parkville: University of Melbourne.

Coates, H., Kelly, P. & Naylor, R. (2015b). *Innovative Perspectives and Approaches for Enhancing the Student Experience: Fieldwork Pack*. Parkville: University of Melbourne.

Coates, H., Kelly, P. & Naylor, R. (2016). *New Perspectives on the Student Experience*. Parkville: University of Melbourne.

Coates, H., Kelly, P., Borden, V., Naylor, R. & Zilvinskis, J. (2016). *Student Success Leadership Resources*. Parkville: University of Melbourne.

Coates, H., Mahat, M., Borden, V., Corrin, L., Lodge, J., Long, L., Nair, S., Naylor, R., Powell, D., Wilkinson, W. & Zimmerman, H. (2015). *Innovative Perspectives and Approaches for Enhancing the Student Experience: Project Brief*. Parkville: University of Melbourne.

Coates, H., Mahat, M., Borden, V., Corrin, L., Lodge, J., Long, P., Nair, S., Naylor, R., Powell, D., Wilkinson, D. & Zimmerman, H. (2015). *Innovative Perspectives and Approaches for Enhancing the Student Experience: Project Proposal*. Parkville: University of Melbourne.

Kelly, P., Coates, H. & Borden, V. (2016). *Models and Case Studies: Data-driven leadership of student success*. Parkville: University of Melbourne.

Workshops

Coates, H. (2016). 2016 Canberra National Engagement Workshop: Enhancing the Student Experience—Innovative Perspectives and Approaches. Parkville: University of Melbourne.

Coates, H., Kelly, P. & Borden, V. (2016). 2016 Brisbane National Engagement Workshop: Enhancing the Student Experience—Innovative Perspectives and Approaches. Parkville: University of Melbourne.

Coates, H., Kelly, P. & Borden, V. (2016). 2016 Melbourne National Engagement Workshop: Enhancing the Student Experience—Innovative Perspectives and Approaches. Parkville: University of Melbourne.

Coates, H., Kelly, P. & Borden, V. (2016). 2016 Sydney National Engagement Workshop: Enhancing the Student Experience—Innovative Perspectives and Approaches. Parkville: University of Melbourne.

Nair, S., Coates, H., Kelly, P. & Borden, V. (2016). 2016 Perth National Engagement Workshop: Enhancing the Student Experience—Innovative Perspectives and Approaches. Parkville: University of Melbourne.

Publications

Bice, S. & Coates, H. (2016). University sustainability reporting: Taking stock of transparency. *Tertiary Education and Management*.

Borden, V. & Coates, H. (2017). Learning Analytics as a Counterpart to Surveys of Student Experience. In Zilvinskis, J. & Borden, V. (Eds.) *New Directions in Institutional Research*. San Francisco, Jossey Bass.

Coates, H. & Dollinger, M. (2016). *Student Experience and Engagement*. Oxford Bibliographies. Oxford: Oxford University Press.

Coates, H. & Radloff, A. (2017). Leveraging student engagement evidence for institutional change and improvement. In: Strydom, F. & Kuh, G. (Eds.) *Engaging Students for Success: Creating conditions that matter for student success in South African higher education*. Stellenbosch: SunMedia.

Coates, H. (2016). *The Market for Learning: Leading Transparent Higher Education*. Dordrecht: Springer.

Coates, H. (2017). Student financing of higher education. *Journal of Educational Planning and Administration*, XXX(4), 299-314.

Coates, H., Kelly, P. & Naylor, R. (2017). Leading online education for student success. *International Journal of Chinese Education*.

Coates, H., Popenici, S. & Kelly, P. (forthcoming). A framework for student engagement: Analysis of progress and future directions. *Educational Psychology Review*.

Kelly, P., Coates, H. & Naylor, R. (2015). Leading online education from participation to success. *Tsinghua Journal of Education*.

Kelly, P., Coates, H. & Naylor, R. (2016). Leading online education from participation to success. *Educational Studies Moscow*.

Kelly, P., Dollinger, M. & Coates, H. (2016). New directions for quality assurance: Transparent outcomes for industry collaboration, research training and student success. *Higher Education Evaluation and Development*.

Melguizo, T. & Coates, H. (2017). The value of assessing higher education student learning outcomes (editorial). *AERA Open Higher Education Special Topic*, 3(3), 1-2.

Naylor, R., Coates, H. & Kelly, P. (2016). From equity to excellence: Renovating Australia's national framework to create new forms of success. In Brett, M., Harvey, A. & Bernheim, C. (Eds.) *Student Equity in Australian Higher Education: Twenty-five Years of A Fair Chance for All*. Dordrecht: Springer.

Sample media outputs

Coates, H. (2016). Australia must do better in conveying value of higher education. Higher Education Supplement, *The Australian*, June 1, 2016.

Coates, H. (2015). Employability: Time for higher education sector to step up. Higher Education Supplement, *The Australian*, November 25, 2015.

Hare, J. (2016). QUT keeps tabs but most unis in the dark about student activity. Higher Education Supplement, *The Australian*, March 16, 2016.

Appendix F: Project impact plan

Table 5: Project impact plan

	Anticipated changes at:			
	Project completion	6 months post-completion	12 months post-completion	24 months post-completion
(1) Team members	<ol style="list-style-type: none"> 1. Build extensive research and practical insights on the undergraduate student experience in Australia. 2. Develop indicators and metrics which will provide important new analytical and actionable frames for the undergraduate student experience. 3. Building further research capability through extensive involvement/networking. 	<ol style="list-style-type: none"> 1. Team members will continue to contribute to national and international discussion around student experience outcomes through interactions with institutions, government, peak bodies, professional bodies, relevant media and other stakeholders. 2. Team members will develop further sustainable and practical options to realise system- and institutional-level advancements that impact student ability to navigate and use information about the higher education sector to enhance decision making and educational experiences. 		
(2) Immediate students			<ol style="list-style-type: none"> 1. Implementing improvements to the undergraduate student experience based on evidence-based decision making to enhance the student experience. 2. Students and wider community being aware of, utilising and benefitting from nuanced student-centric data sources and platforms. 	
(3) Spreading the word	<ol style="list-style-type: none"> 1. Enhancement framework for staff which will incorporate evidence-based case studies and good practice guidelines. 2. National engagement workshops for disseminating project outcomes. 	<ol style="list-style-type: none"> 1. Academic publications arising from the research project. 2. An online resource for the undergraduate student experience for academic and practical endeavours. 3. Media articles that advance national discourse in the undergraduate student experience. 	<ol style="list-style-type: none"> 1. Ongoing dissemination of information through national and international discussion on student experience through interactions with institutions, government, peak bodies, professional bodies, relevant media and other stakeholders. 	
(4) Narrow opportunistic adoption			<ol style="list-style-type: none"> 1. Data and new technologies to understand and enhance student experience being implemented across participating institutions. 	

	Anticipated changes at:			
	Project completion	6 months post-completion	12 months post-completion	24 months post-completion
(5) Narrow systemic adoption			1. Data and new technologies to understand and enhance student experience being implemented across other institutions.	
(6) Broad opportunistic adoption			1. Professional development delivered to academic and professional staff in using new data, methodology and technologies to understand and enhance student experience. 2. System-level changes that take into account new frames and data mapping for student success.	
(7) Broad systemic adoption				1. Establishment of national body designed to realise student-centric information and build student engagement strategies at the system level of Australia's higher education system. 2. Data, methodology and/or technologies used across all higher education institutions and/or at system level. 3. Support further development of academic standards across the higher education sector. 4. Better data for making judgments about overall quality of teaching and learning within and between institutions

Attachment 1: Interim and supplementary reports

1. Coates, H., Mahat, M., Borden, V., Corrin, L., Lodge, J., Long, P., Nair, S., Naylor, R., Powell, D., Wilkinson, D. & Zimmerman, H. (2015). *Innovative Perspectives and Approaches for Enhancing the Student Experience: Project Proposal*. Parkville: University of Melbourne.
2. Coates, H., Mahat, M., Borden, V., Corrin, L., Lodge, J., Long, L., Nair, S., Naylor, R., Powell, D., Wilkinson, W. & Zimmerman, H. (2015). *Innovative Perspectives and Approaches for Enhancing the Student Experience: Project Brief*. Parkville: University of Melbourne.
3. Coates, H., Kelly, P. & Naylor, R. (2015a). *New Anthropology for Higher Education: Background Research Report*. Parkville: University of Melbourne.
4. Coates, H., Kelly, P. & Naylor, R. (2015b). *Innovative Perspectives and Approaches for Enhancing the Student Experience: Fieldwork Pack*. Parkville: University of Melbourne.
5. Coates, H., Kelly, P. & Naylor, R. (2016). *New Perspectives on the Student Experience*. Parkville: University of Melbourne.
6. Borden, V., Coates, H., Kelly, P. & Zilvinskis, J. (2016). *Enhancement Framework for the Student Experience*. Parkville: University of Melbourne.
7. Coates, H., Kelly, P. & Borden, V. (2016). *2016 National Engagement Workshops: Enhancing the Student Experience—Innovative Perspectives and Approaches*. Parkville: University of Melbourne.
8. Kelly, P., Coates, H. & Borden, V. (2016). *Models and Case Studies: Data-driven leadership of student success*. Parkville: University of Melbourne.

Attachment 2: Student Success Leadership Resources

1. Leadership Architecture (LA): Enhancing the 21st century student experience.
2. Enhancement Framework (EF): Creating a culture of success.
3. Nine Qualities Model (9Q): Defining student success.
4. Data Experience Leadership Model (D+E+L): Data-driven leadership of experience.
5. Institution Maturity Matrix (IMM): Diagnosing maturity and readiness.