Australian Government

**Department of Industry
Innovation, Science, Research
and Tertiary Education**

UES University
Experience
Survey

2012 University Experience Survey National Report

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December 2012

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Acknowledgements

For more information on the UES project and development, please contact the UES Consortium on ues@acer.edu.au.

Acronyms and abbreviations

AAS	Appropriate Assessment Scale
ACER	Australian Council for Educational Research
AGS	Australian Graduate Survey
AHELO	Assessment of Higher Education Learning Outcomes
ANU	Australian National University
AQHE	Assessing Quality in Higher Education
AQTF	Australian Quality Training Framework
ATN	Australian Technology Network
AUSSE	Australasian Survey of Student Engagement
AWS	Appropriate Workload Scale
CATI	Computer Assisted Telephone Interviewing
CEQ	Course Experience Questionnaire
CGS	Clear Goals Scale
CHE	Centre for Higher Education Development
CM	Campus File
CO	Course of Study File
CSHE	Centre for the Study of Higher Education
DEEWR	Department of Education, Employment and Workplace Relations
DIF	Differential Item Functioning
DIISRTE	Department of Industry, Innovation, Science, Research and Tertiary Education
DU	Commonwealth Assisted Students HELP DUE File
DVC	Deputy Vice Chancellor
EC	European Commission
EN	Student Enrolment File
GCA	Graduate Careers Australia
GDS	Graduate Destination Survey
Go8	Group of Eight
GQS	Graduate Qualities Scale
GSS	Generic Skills Scale
GTS	Good Teaching Scale
HEIMS	Higher Education Information Management System
IMS	Intellectual Motivation Scale
IRU	Innovative Research Universities
LCS	Learning Community Scale
LL	Student Load Liability File
LMS	Learning Management System
LRS	Learning Resources Scale
NSS	National Student Survey
NSSE	National Survey of Student Engagement
NTEU	National Tertiary Education Union
NUS	National Union of Students
OECD	Organisation for Economic Co-operation and Development
OSI	Overall Satisfaction Item
PAG	Project Advisory Group
PISA	Programme for International Student Assessment

RUN   Regional Universities Network
SRC   Social Research Centre
SSS   Student Support Scale
UEQ   University Experience Questionnaire
UES   University Experience Survey
UNESCO   United Nations Educational, Scientific and Cultural Organization
UWS   University of Western Sydney
VC   Vice Chancellor

Executive summary

How students experience university plays a major role in their academic, personal and professional success. Over the last decade Australian universities and governments have placed considerable emphasis on key facets of the student experience such as skills development, student engagement, quality teaching, student support, and learning resources. Reflecting this, a project was conducted in 2012 to furnish a new national architecture for collecting feedback on understanding the improving the student experience.

The University Experience Survey (UES) has been developed by the Australian Government to provide a new national platform for measuring the quality of teaching and learning in Australian higher education. The UES focuses on aspects of the student experience that are measurable, linked with learning and development outcomes, and for which universities can reasonably be assumed to have responsibility. The survey yields results that are related to outcomes across differing institutional contexts, disciplinary contexts and modes of study. The UES provides new cross-institutional benchmarks that can aid quality assurance and improvement.

In 2012 the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) engaged ACER to collaborate with CSHE and UWS to build on 2011 work and further develop the UES. The project was led by A/Professor Hamish Coates (ACER) and Professors Richard James (CSHE) and Kerri-Lee Krause (UWS), and was managed by Dr Rebecca Taylor and Ali Radloff (ACER). The work was informed by the UES Project Advisory Group (PAG).

The UES is based on an ethos of continuous improvement, and it is imperative that quality enhancement work be positioned at the front-end rather than lagging tail of data collection and reporting activity. Using survey data for improvement is the most important and perpetually most neglected aspect of initiatives such as the UES, yet without improvement the value of the work is questionable. Recommendations were made to affirm the importance of reporting:

Recommendation 1: Interactive online UES Institution Reports should be developed to enable enhancement of the efficiency and reliability of reporting processes. This infrastructure should provide real-time information about fieldwork administration and student response.

Recommendation 2: A 'UES National Report' should be prepared for each survey administration that provides a broad descriptive overview of results and findings, and which taps into salient trends and contexts.

Recommendation 14: Strategies should be explored for international benchmarking, including the cross-national comparison of items, marketing the UES for use by other systems, or broader comparisons of concepts and trends.

Further development of the UES included extensive research, consultation with universities and technical validation. The survey instrument and its scales and items were further refined to be relevant to policy and practice and to yield robust and practically useful data for informing student choice and continuous improvement. Links were to be made with benchmark international collections. The future of the Course Experience Questionnaire (CEQ) was reviewed. The UES survey instrument was developed as an online and telephone-based instrument. The following recommendations were made regarding the substantive focus of the data collection:

Recommendation 3: The core UES should measure five facets of student experience: Skills Development, Learner Engagement, Quality Teaching, Student Support and Learning Resources.

Recommendation 4: The UES items reproduced in Appendix E of this UES 2012 National Report should form the core UES questionnaire.

Recommendation 5: As an essential facet of its utility for continuous improvement protocols should be adopted to facilitate the incorporation of institution-specific items into the UES.

Recommendation 6: Selected CEQ items and scales should be incorporated within an integrated higher education national survey architecture. The GTS, GSS, OSI, CGS, GQS and LCS scales and their 28 items should be retained in the revised national survey architecture, and the AWS, AAS, IMS, SSS and LRS scales and their 21 items be phased out from national administration. The name 'CEQ' should be discontinued and the retained scales/items should be managed as a coherent whole. A review should be performed after a suitable period (nominally, three years) to consider whether the scales are incorporated or discontinued.

The 2012 UES was the first time in Australian higher education that an independent agency had implemented a single national collection of data on students' university experience. The survey was also the largest of its kind. Planning for the 2012 collection was constrained by project timelines, requiring ACER to draw on prior research, proven strategies and existing resources used for other collections to design and implement 2012 UES fieldwork. Overall, 455,322 students across 40 universities were invited to participate between July and early October 2012 and 110,135 responses were received. The national student population was divided into around 1,954 subgroups with expected returns being received for 80 per cent of these. Much was learned from implementing a data collection of this scope and scale, and the following recommendation were made:

Recommendation 7: Non-university higher education providers should be included in future administrations of the UES.

Recommendation 8: As recommended by the AQHE Reference Group, the UES should be administered independent of institutions in any future administration to enhance validity, reliability, efficiency and outcomes.

Recommendation 9: All institutions should contribute to refining the specification and operationalisation of the UES population and in particular of 'first-year student' and 'final-year student'. Protocols should be developed for reporting results that may pertain to more than one qualification. Institutions should be invited to include off-shore cohorts in future surveys.

Recommendation 10: Given its significance a professional marketing capability should be deployed for the UES, working nationally and closely with institutions. To yield maximum returns, UES marketing and promotion should begin around nine months before the start of survey administration.

Recommendation 13: A UES engagement strategy should be implemented nationally as part of ongoing activities to enhance the quality and level of students' participation in the process.

Given the scope, scale and significance of the UES it is imperative that appropriate and sophisticated technical procedures are used to affirm the validity and reliability of data and results. Quality-assured procedures should be used to process data, coupled with appropriate forms of weighting and sampling error estimation. As with any high-stakes data collection all reporting must be regulated by appropriate governance arrangements.

Recommendation 11: Given the scale of the UES and student participation characteristics a range of sophisticated monitoring procedures must be used to enhance the efficiency of fieldwork and to confirm the representativity of response yield.

Recommendation 12: The validation and weighting of UES data must be conducted and verified to international standards. Appropriate standard errors must be calculated and reported, along with detailed reports on bias and representativity.

Recommendation 15: To maximise the potential and integrity of the UES governance and reporting processes and resources must be developed.

It takes around three to five years of ongoing design, formative review and development to establish a new national data collection given the stakeholders, change and consolidation required. The 2012 collection was the second implementation of the UES, and the first with expanded instrumentation and participation. Foundation stones have been laid and new frontiers tested, but data collections are living things and the efficacy and potential of the UES will be realised only by nurturing management coupled with prudent and astute leadership over the next few years of ongoing development. Developing the feedback infrastructure and positioning the UES in a complex unfolding tertiary landscape will require vision, capacity and confidence. Substantial work remains to convert this fledgling survey into a truly national vehicle for improving and monitoring the student experience.

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1.1 Introduction and context

How students experience university plays a major role in their academic, personal and professional success. Over the last decade Australian universities and governments have placed considerable emphasis on key facets of the student experience ecology such as skills development, student engagement, quality teaching, student support, and learning resources. This report discusses a 2012 project that furnished a new national architecture for collecting feedback on understanding the improving the student experience.

The University Experience Survey (UES) has been developed by the Australian Government to provide a new national platform for measuring the quality of teaching and learning in Australian higher education. The UES focuses on aspects of the student experience that are measurable, linked with learning and development outcomes, and for which universities can reasonably be assumed to have responsibility. The survey yields results that are related to outcomes across differing institutional contexts, disciplinary contexts and modes of study. As such, the UES will provide new cross-institutional benchmarks that can aid quality assurance and improvement.

The UES has been designed to provide reliable, valid and generalisable information to universities and the Australian Government. In the 2011–12 Federal Budget the Australian Government released details of the Advancing Quality in Higher Education (AQHE) initiative, including establishment of an AQHE Reference Group. AQHE is designed to ensure the quality of teaching and learning in higher education during a period of rapid growth in enrolments following the deregulation of Commonwealth Supported Places in undergraduate education. The AQHE initiative included the development and refinement of performance measures and instruments designed to develop information on the student experience of university and learning outcomes. In November 2012 the Minister for Tertiary Education, Skills, Science and Research announced that the Australian Government had accepted all of the recommendations made by the AQHE Reference Group, and that from 2013 the UES would be implemented to collect information for the MyUniversity (DIISRTE, 2012) website and to help universities with continuous improvement.

The development of the UES occurs within an increasingly competitive international market for higher education services, in which demonstrable quality and standards will be necessary for Australian universities to remain an attractive choice and destination for international students. The UES is therefore one component within the overall information, quality assurance, standards and regulatory architecture being established to ensure Australian higher education retains its high international standing.

Internationally, universities and higher education systems are focused on ensuring quality as participation rates grow, entry becomes more open, and students' patterns of engagement with their study are changing. Policy and practice are increasingly focused on understanding how academic standards can be guaranteed and student learning outcomes can be validly and reliably measured and compared. As well, universities are increasingly using evidence-based approaches to monitoring and enhancing teaching, learning and the student experience. The UES is an important development for the Australian higher education system for it will provide universities with robust analytic information on the nature and quality of the student experience that is without parallel internationally.

As these remarks and this report show, the UES is a very new data collection and one the seeks change to the landscape that verges on reform. Over the last two years it has been designed with high expectations of playing a major and formative role in Australian higher education. The UES has been developed not merely as a student survey—of which there are far too many already—but as a broader quality monitoring and improvement initiative. In this and other respects (such as the scope and sophistication of the collection), the UES has been established to place Australian higher education at the forefront of international practice. Foundation stones have been laid and new frontiers tested, but data collections are living things and the efficacy and potential of the UES will be realised only by nurturing management coupled with prudent and astute leadership over the next few years of ongoing development. Developing the feedback infrastructure and positioning the UES in a complex unfolding tertiary landscape will require vision, capacity and confidence.

1.2   Development background and focus

In 2011 DEEWR engaged a consortium to design and develop the UES. The UES Consortium was led by the Australian Council for Educational Research (ACER) and included the University of Melbourne's Centre for the Study of Higher Education (CSHE) and the Griffith Institute for Higher Education (GIHE). The Consortium designed and validated a survey instrument and collection method and made recommendations about further development.

In 2012 the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) re-engaged the UES Consortium to work with universities and key stakeholders to review the UES including its use to inform student choice and continuous improvement. The consortium is led by A/Professor Hamish Coates (ACER) and Professors Richard James (CSHE) and Kerri-Lee Krause (UWS). This research is managed by Dr Rebecca Taylor and Ali Radloff (ACER). The work was informed by the UES Project Advisory Group (PAG) (see Appendix A for Terms of Reference), which includes experts from across the sector.

Further development of the University Experience Survey included extensive research, consultation with universities and technical validation. The instrument and its constituent scales and items were to be further refined to be relevant to policy and practice and to yield robust and practically useful data for informing student choice and continuous improvement. Links were to be made with benchmark international collections as appropriate. The UES survey instrument was developed as an online and telephone-based instrument.

The aspiration shaping development of the UES questionnaire was to define what the student experience should look like over the next twenty years. Specifically, in 2012, the UES Consortium was asked to further develop the UES survey instrument and related materials with a focus on:

- investigating and testing extensions to the core 2011 instrument to ensure it is fit for informing student choice and continuous improvement;
- investigating and testing development of a set of tailored items for incorporation into the core instrument to reflect different student circumstances (e.g. distance, mature age, part-time students), where appropriate;
- beginning the development of a set of key non-core items and scales in consultation with the higher education sector to allow universities access to items and scales which will assist with their individual continuous improvement needs;
- developing a strategy to benchmark results against relevant international instruments;
- investigating the conceptual and empirical relationship between UES scales and Course Experience Questionnaire (CEQ) scales and advising on options for deploying these scales across the student life cycle; and

- investigating and developing qualitative analysis software to analyse responses to open ended questions in the instrument, to assist with continuous improvement.

In 2012 ACER sought to implement the most robust and efficient student survey yet delivered in Australia. In 2011, procedures for survey administration were developed in close consultation with universities. In 2012 further development was conducted and the core UES instrument was administered to Table A and participating Table B universities, which involved:

- administering the core UES instrument to first- and later-year undergraduate bachelor pass students, including both domestic and international onshore students;
- administering the UES using scientific sampling methods to select students, or when needed a census, with sampling designed to yield discipline-level reports for each university;
- developing a response strategy to ensure an appropriate response rate is achieved that yields discipline-level reports for each university, including administering the instrument in a range of modes including online and Computer Assisted Telephone Interviewing (CATI); and
- where possible, administering the 2012 UES instrument independently of universities.

Table 1 lists the 2012 project's key dates and timings. The timeline was compressed, with all activities taking place in around six months.

Table 1: 2012 key dates and timings

Event	Date
Project start	May
Consultation with universities and peak bodies	May to November
Research and infrastructure development	May to July
Revised instrument pilot produced	July
Administration preparations	June to July
Fieldwork	Late July and August
Draft reports	October/November
Final reports	December

Consultation plays a huge role in any work designed to capture the student voice for policy and quality assurance. Consultation was extensive and proceeded throughout the project in three main phases. The first phase involved input pre-fieldwork and, given timelines, was highly targeted and focused on technical and operational matters. The second phase, during fieldwork, involved extensive liaison on operational matters. The third phase—post-fieldwork consultation—was broader and involved liaison with a much larger group of people on a wide range of matters. Insights and feedback received from stakeholders and advisors are incorporated throughout this report. A report of the consultation process is included in Appendix B.

The UES Consortium prepared and delivered this UES 2012 National Report, which reviews development contexts, provides descriptive results and outcomes of more advanced statistical analyses, explores the refinement of the survey instrument, discusses operational and technical methods, and concludes with consideration of broader matters such as international benchmarking, incorporation of the CEQ, and a response-rate strategy.

In addition to this report, ACER provided detailed diagnostic and benchmarking reports for each participating institution. National and institution-specific data sets were produced. The Student Voice software was produced to analyse qualitative information from open-ended response items within the UES instrument.

1.3   An overview of this report

This 2012 UES National Report includes four more chapters. The next chapter looks at reporting contexts, providing an overview of institutional and national reporting, and a more detailed analysis of high-level national results. Chapter three discusses the design, development, delivery and validation of the survey instrument. Chapter four reviews the implementation of the 2012 data collection. The final chapter considers implications and broader research developments produced through the work. Further resources and information are provided in a series of appendices. Recommendations are made throughout this report. These highlight key areas for action but do not capture all areas in need of further development.

2   Pictures of the student experience

2.1   Reporting contexts

A data collection such as the UES has the potential to be analysed and reported in a wide range of ways. All appropriate forms of reporting should be encouraged given the wealth of information available and resources associated with national data collection. Three main reporting contexts were defined in 2012:

- institution-specific reporting, designed for continuous improvement;
- potential public reporting via MyUniversity; and
- summary results in this 2012 UES National Report.

2.2   Institutional reporting

Institutional reporting and analysis was a core rationale for the 2012 data collection. Starting from the 2011 version (Radloff, Coates, James, & Krause, 2011) an expanded 2012 UES Institutional Report was designed and developed for the UES. Validation of these 2012 reports drew on feedback from the sector. In December each institution was provided with a PDF copy of their own report and a data file. A sample report is included in Attachment II of this report.

Within the scope of the 2012 UES development project it was not possible to explore more advanced forms of dynamic online reporting that are rapidly assuming prominence in institutional research communities around the world. Such systems enable stakeholders to log in and explore institution characteristics and relativities. Examples include U-MAP (The European Commission of Higher Education Institutions, 2012), the OECD Better Life Index (OECD, 2012), the CHE Ranking (CHE, 2012), the NSSE Report Builder (NSSE, 2012), and PISA reporting interfaces (OECD, 2012). These systems would ensure that data is widely accessible while at the same time being used in technically and operationally appropriate ways. Consultation with institutions affirmed the value that these reporting mechanisms could add.

> *Recommendation 1: Interactive online UES Institution Reports should be developed to enable enhancement of the efficiency and reliability of reporting processes. This infrastructure should provide real-time information about fieldwork administration and student response.*

2.3   Public reporting

The cessation of performance-based funding in late 2011 left the publication of UES results on MyUniversity as one of the main policy rationales for the 2012 UES. This requirement influenced the scope of the population definition and student selection strategy, the resources deployed for data collection, quality assurance and risk management, and the criteria used for reporting. In December 2012 raw and scaled data were provided to DIISRTE for use with MyUniversity. As well as public reporting via MyUniversity, a range of other high-level reports may be prepared to provide assurance about the higher education sector as a whole.

2.4   National patterns

The 2012 UES provides a unique window into the experience of undergraduate students studying at an Australian university. The collection is unprecedented in its size, and it has captured information not hitherto available on a national scale, or at all within Australia. The full potential of this dataset will only be realised through substantial analysis and review. While the bulk of this report is methodological in flavour, reviewing insights captured by the largest ever survey of current university students is a top priority.

2.4.1   Students' contexts and characteristics

Data was received from 110,135 students at 40 Australian universities from all fields of education. Overall, of the weighted response data, 55 per cent pertained to later-year students, 57 per cent to females, 13 per cent to distance or mixed mode students, one per cent (around 4,500 of weighted data) to Indigenous students, 16 per cent to international students, 26 per cent to people who spoke a language other than English at home, five per cent to students with a disability, and 45 per cent to those that reported they were the first in their family to participate in higher education. This latter figure regarding first-in-family is a baseline insight for Australian higher education.

The UES questionnaire included several contextual questions pertaining to students' basic interactions with Australian universities. For instance, 71 per cent of students declared doing some or all of their study online, which varied depending on mode of study but was still around two-thirds for internal students.

Nationally, 44 per cent of students reported that their living arrangements had at least some impact on their study (51% reported no or very little impact, and 5% declared the question not applicable). There was no variation in terms of various demographics such as international student status, study year, family education background, sex, indigeneity, disability, home language or mode of study.

Just over half (51%) of students across Australia reported that financial circumstances affected their study, while around 49 per cent reported no or very little impact. This varied considerably across institutions, from between 30 to 50 per cent at 12 institutions, to 60 per cent or more at six institutions. Similar variability was evident across fields of education. There was little variation in terms of year, mode or location of study, sex, or international student status or language background. Students reporting a disability also reported greater financial constraint than others, as did Indigenous students and those who were the first in their family to attend higher education.

Similarly, just over half (52%) of students nationally reported that paid work had at least some affect on their study, with substantial variation across institutions. The influence of paid work was emphasised by later-year students, external students, and domestic students and people with English as their home language. As with many aspects of higher education, field of education had a large impact in this regard, with only around a third of people studying medicine or dentistry reporting the interference of paid work compared with around two-thirds of students in large, public health, building and various education fields.

Around two-thirds of students reported a grade of about 70 out of 100. Interestingly, external students and females reported higher average grades than internal students or males, as did non-Indigenous or domestic students, or people with English as a home language. Students' reports of their grade varied substantially across institutions, reflecting different grading contexts and practices. There were five institutions, for instance, at which 40 per cent or more reported an average overall grade of 80–100 out of 100, compared with another five at which such grade averages were reported for fewer than 20 per cent of students.

In terms of support, some of which is tapped into by the engagement focus area, around half of Australian students reported being offered very little or no support to settle into study, three-quarters of international students indicated that they had opportunities to interact with local students, 60 per cent of the one-third of students who answered the question indicated they received appropriate English language skills support, and three-quarters of the students who answered the question indicated that induction/orientation activities were relevant and helpful.

People responding to the UES were asked if in 2012 they had seriously considered leaving their current university. Just under one-fifth (18%) of students indicated they had given thought to leaving. These 18 per cent of students were then asked to nominate one or more reasons (each student could select multiple reasons). Table 2 lists these reasons, sorted by incidence. Roughly, each percentage point in this table represents around 700 university students in Australia.

Table 2: Selected reasons for considering early departure

Departure reason	Per cent of those considering departure	Departure reason	Per cent of those considering departure
Expectations not met	30	Paid work responsibilities	13
Health or stress	26	Academic exchange	13
Financial difficulties	24	Administrative support	12
Study/life balance	24	Commuting difficulties	11
Difficulty with workload	23	Gap year/deferral	10
Boredom/lack of interest	23	Institution reputation	10
Academic support	21	Difficulty paying fees	10
Quality concerns	21	Social reasons	8
Personal reasons	20	Other opportunities	8
Career prospects	20	Graduating	7
Need to do paid work	19	Travel or tourism	7
Change of direction	17	Standards too high	5
Need a break	17	Moving residence	5
Family responsibilities	15	Government assistance	3
Other reasons	14	Received other offer	2

2.4. Pictures of the student experience

The UES assesses five broad facets of students' university experience – Skills Development, Learner Engagement, Teaching Quality, Student Support and Learning Resources. Appendix I presents baseline descriptive statistics for these five areas, nationally and for key student subgroups. This section presents insights on each of these areas, drawing on available demographic and contextual information.

Student demographic groups, as in other data collections, appear to have very little impact on people's experience. At the national level, across the five focus areas there was very little difference in how male and female students experienced university study. Indigenous students reported experiencing more support than non-Indigenous students. Being the first in family to attend university had very little impact on experience. Domestic students reported slightly greater levels of engagement, and international students greater support. Home language had no reported impact on experience, though people reporting a disability observed slightly greater levels of support.

The lifestyle contexts that surround students study tend to play a modest role in shaping the experience. All measured facets of the university experience are rated lower by students who report that living arrangements affect their study. With the exception of perceptions of skills development, the same is true for people who indicated that financial circumstances affected their study. Similar patterns were observed regarding the impact of paid work.

Pleasingly, there is a positive relationship between specific forms of support and people's experience of university. This was evident, for instance, in people's perceptions that they were offered relevant support to settle into their study, that they received appropriate English language skill support, and that induction/orientation activities were relevant and helpful. Interacting with local students was related to a more positive experience, particularly regarding skills development. As expected, all measured facets of the student experience were linked positively with average overall grade, in particular learner engagement, teaching quality and perceptions of skills development. Resources and support appear to be threshold conditions which are required for academic success but exhibit diminishing returns.

Academic contexts, however, accounted for the most variability in students' experience. First-year students reported more positive experience of learning resources and student support, while later-year students reported greater skill development. Studying online had little impact on experience, as did studying externally with the exception of learners' engagement. As in other data collections of this kind, institution and field of education were the most closely related to students' experience. For reference Table 3 displays the subject areas used in the UES sorted from highest to lowest national scores on average across the five focus areas. The subject areas are used throughout the UES, and are the groupings derived for MyUniversity (see Appendix C). For clarity only the top five (shown shaded) and bottom five areas are shown. By way of example, students in the building and construction focus area report the lowest levels of learner engagement, and students in physiotherapy the highest. Dentistry students report the lowest levels of student support and people studying tourism and hospitality the highest. While this presentation brings out major patterns, the simple rank ordering of results does not imply any significant or meaningful differences.

Table 3: Subject areas sorted by score within focus areas

Learner Engagement	Teaching Quality	Learning Resources	Student Support	Skills Development
Physiotherapy	Physiotherapy	Public Health	Tourism, Hospitality & Personal Services	Physiotherapy
Medicine	Language & Literature	Justice Studies & Policing	Mathematics	Tourism, Hospitality & Personal Services
Veterinary Science	Psychology	Medical Sciences and Technology	Public Health	Occupational Therapy
Music & Performing Arts	Biological Sciences	Biological Sciences	Biological Sciences	Teacher Education – Early Childhood
Occupational Therapy	Occupational Therapy	Natural & Physical Sciences	Accounting	Veterinary Science
Law	Economics	Building & Construction	Veterinary Science	Banking & Finance
Accounting	Engineering – Other	Engineering – Mechanical	Medicine	Computing & Information Systems
Agriculture & Forestry	Engineering – Civil	Music & Performing Arts	Engineering – Mechanical	Economics
Justice Studies & Policing	Engineering – Mechanical	Architecture & Urban Environments	Building & Construction	Agriculture & Forestry
Building & Construction	Building & Construction	Dentistry	Dentistry	Building & Construction

Simplistic aggregation of UES results to the institution level conflates the inherent diversity within institutions and carries the potential to misrepresent and misinform. Nonetheless, there are substantial patterns among institutions across each of the five focus areas. Attachment III of this report lists mean and standard error statistics of each of the five focus areas by institution for the largest ten national subject areas. Institutions are de-identified in this presentation, with each being supplied their own randomly assigned code. This information can be used to produce graphs such as those in Figure 1 and Figure 2. Figure 1 shows average Learner Engagement scores for institutions for the humanities (including history and geography) subject area. Figure 2 reports average scores for the Skills Development focus area for the science subject area. The error bars reflect 95 per cent confidence bands. Given standard deviations of the scores a meaningful difference is at least 10 score points. Analysis of such information can be used to spotlight areas of strong performance and those with potential for improvement, and move towards the identification of benchmarking relationships and other forms of continuous improvement. Nonetheless, it has to be emphasised that these graphs are statistically very simplistic and as investigated in 2007 (Marks & Coates, 2007) much more nuanced analysis is required prior to any high-stakes application.
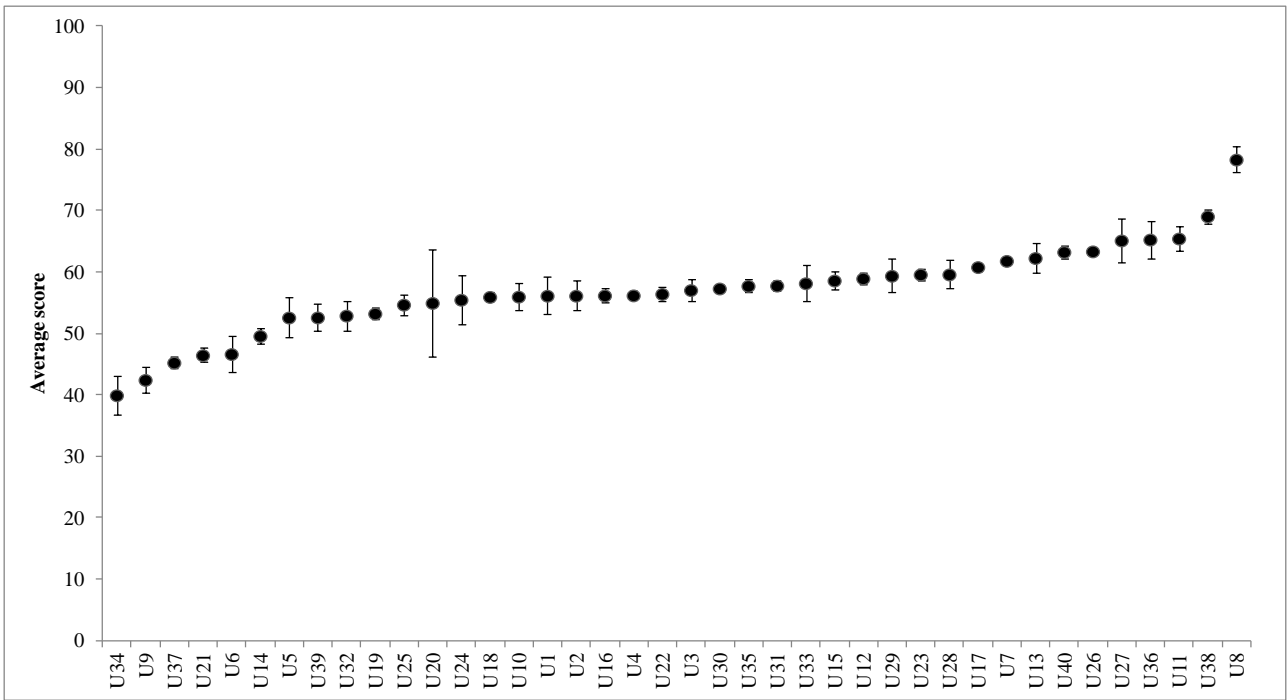
Figure 1: Humanities subject area Learner Engagement average scores by institution
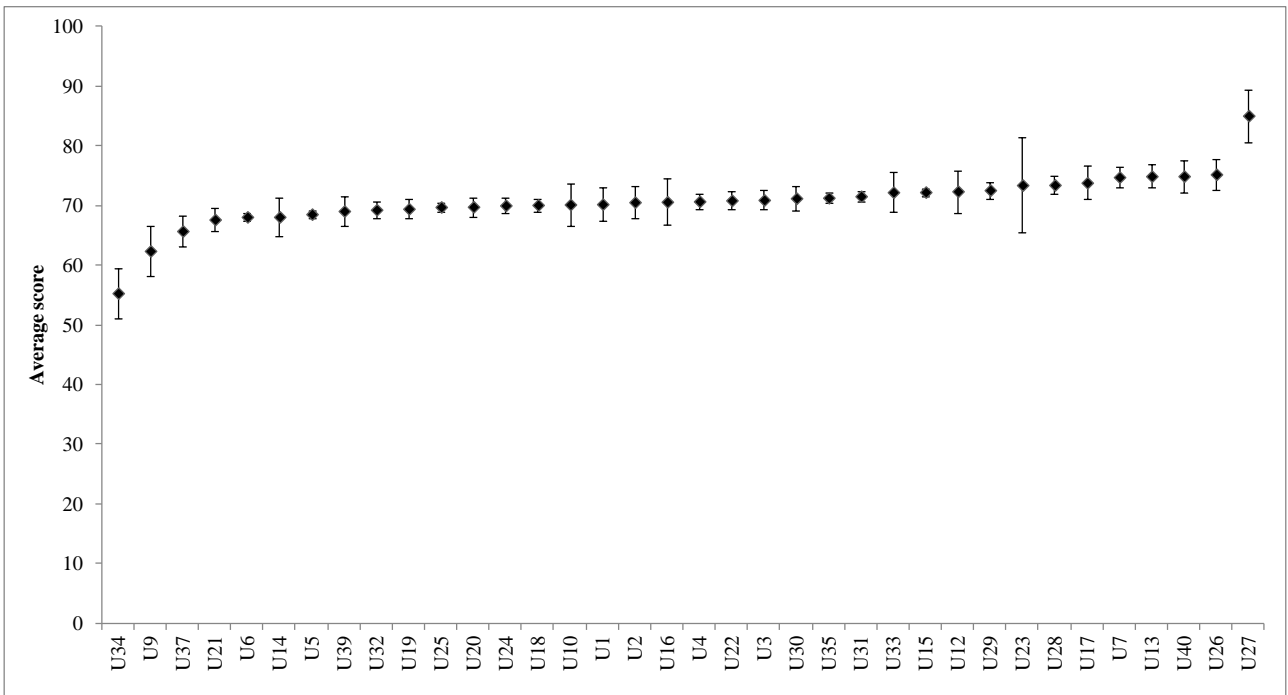
Figure 2: Science subject area Skills Development average scores by institution

2.4.3   A platform for national reporting

As suggested above, the UES provides a plethora of new insights into students' experience of university in Australia. In addition to national reporting of results via MyUniversity and any within-institution reporting, a comprehensive national report of results should be prepared at the conclusion of each survey cycle. As possible given data and contextual constraints, this should attempt to conduct longitudinal linkages and trendwise analyses.

Recommendation 2: A 'UES National Report' should be prepared for each survey administration that provides a broad descriptive overview of results and findings, and which taps into salient trends and contexts.

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3 Defining what counts

3.1 Introduction

Data collection such as the UES carries a powerful potential and responsibility to shape students' experience of higher education. Through the surveying process students are invited to reflect on the contents of the questionnaire. These contents form the basis of institutional and national reports, and hence play a formative role in shaping monitoring and improvement activities and decisions. The questionnaire contents bring together contemporary perspectives on the qualities that define a quality and productive experience. As this chapter shows, they incorporate insights from research, expert judgement, stakeholder opinions, strategic and technical modelling, and considerations of a practical and contextual nature.

This chapter discusses the further development of the UES questionnaire. It reviews the research background and presents the conceptual model that underpins the survey. The production of questionnaire items is reviewed, followed by an overview of instrument operationalisation and the psychometric validation of the questionnaire. In 2012 the UES Consortium was asked to explore the position of the Course Experience Questionnaire (CEQ) in the evolving national survey architecture, and the outcomes of this work are reported here.

3.2 Research background

In 2011 the UES Consortium developed and validated a survey instrument for the UES. This instrument was developed for the primary purpose of allocating performance-based funds to Table A universities. Secondary purposes included use for transparency initiatives (notably, MyUniversity) and for each institution's own continuous improvement. With these rationales in mind the UES Consortium developed a focused and relatively short actuarial instrument that was operationally efficient to implement, resonated with students and universities, and which measured widely-accepted determinants and characteristics of the quality of the student experience.

The survey was designed to focus on aspects of the student experience that are measurable and linked with learning and development outcomes. Importantly, the UES was designed to provide reliable, valid and generalisable information to the Australian Government and to universities. Because of its high-stakes accountability rationales, the UES instrument was focused on aspects of the student experience for which universities could reasonably be assumed to have responsibility. The conceptual structure that underpinned the 2011 instrument was formed through review of research, consultation, and by drawing on extensive experience in designing and managing higher education student surveys. It framed educational development as a product of both student involvement and institutional support, and saw these aspects of the student experience as complexly intertwined. It defined three broad concepts: Learner Engagement, Teaching and Support, and Educational Development.

Towards the end of the 2011 development project, the Australian Government announced as part of broader policy reforms that it would no longer allocate performance funds based on measures of the student experience or quality of learning outcomes, including the UES. This policy change, linked closely with the primary and motivating rationale for the technical development, provoked questions about the continuing rationale and sustainability of the instrument and collection. Put simply, net its driving policy rationales, did the UES still have a valuable role to play in Australian higher education? A broad and long-term view suggested that the answer was a clear 'yes'—that

there is enduring value in a government-sponsored national collection of information on students' experience of higher education—but that further improvement and positioning work was required.

Accordingly, the UES Consortium recommended that further development be undertaken to ensure that the UES provides information that would be useful for informing student choice and for each institution's continuous improvement. In total, the UES Consortium's 2011 report on the development of the UES made 10 recommendations regarding further development. The 2011 development report was released in early 2012, and feedback was sought from higher education institutions and stakeholders on how further work should proceed. Submissions were reviewed by the Advancing Quality in Higher Education (AQHE) Reference Group that recommended further development of the UES proceed.

In May 2012 the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) re-engaged the UES Consortium to work with universities and key stakeholders to improve the UES, including its use to inform student choice and continuous improvement. This 2012 development included research, consultation with universities, and technical validation. The scope of the instrument was expanded to render it more useful for informing student choice and continuous improvement. Specifically, in 2012 the UES Consortium further developed the instrument and related materials with a focus on:

- investigating and testing extensions to the 2011 core instrument (the 'common core') to ensure it is fit for informing student choice and continuous improvement;
- investigating and testing development of a set of tailored items for incorporation into the core instrument (the 'contextual core') to reflect different student circumstance (e.g. distance, mature age, part-time students), where appropriate;
- beginning the development of a set of key non-core items (a 'contextual optional') in consultation with the higher education sector to allow universities access to items and scales which will assist with their individual continuous improvement needs;
- developing a strategy to benchmark results against relevant international instruments;
- investigating the conceptual and empirical relationship between UES scales and Course Experience Questionnaire (CEQ) scales and advising on options for deploying these scales across the student life-cycle; and
- investigating and developing qualitative analysis software to analyse responses to open ended questions in the instrument, to assist with continuous improvement.

3.3   Shaping concepts

To respond to this suite of requirements, the UES Consortium enhanced the conceptual model developed in 2011 to more comprehensively denote the educational journey that constitutes each student's university experience. Figure 3 shows that the conceptual scope of the UES was expanded by considering five facets of the university experience. This articulates that Skills Development flows from Learner Engagement, which is facilitated by Quality Teaching and Student Support, which are underpinned by Student Support and Learning Resources. This reflected a conservative and powerful extension of the 2011 model, which added the stage-wise perspective and additional potential to focus on students' pathways into higher education. It mapped against the student lifecycle representation endorsed by the AQHE Reference Group (DIISRTE, 2012).
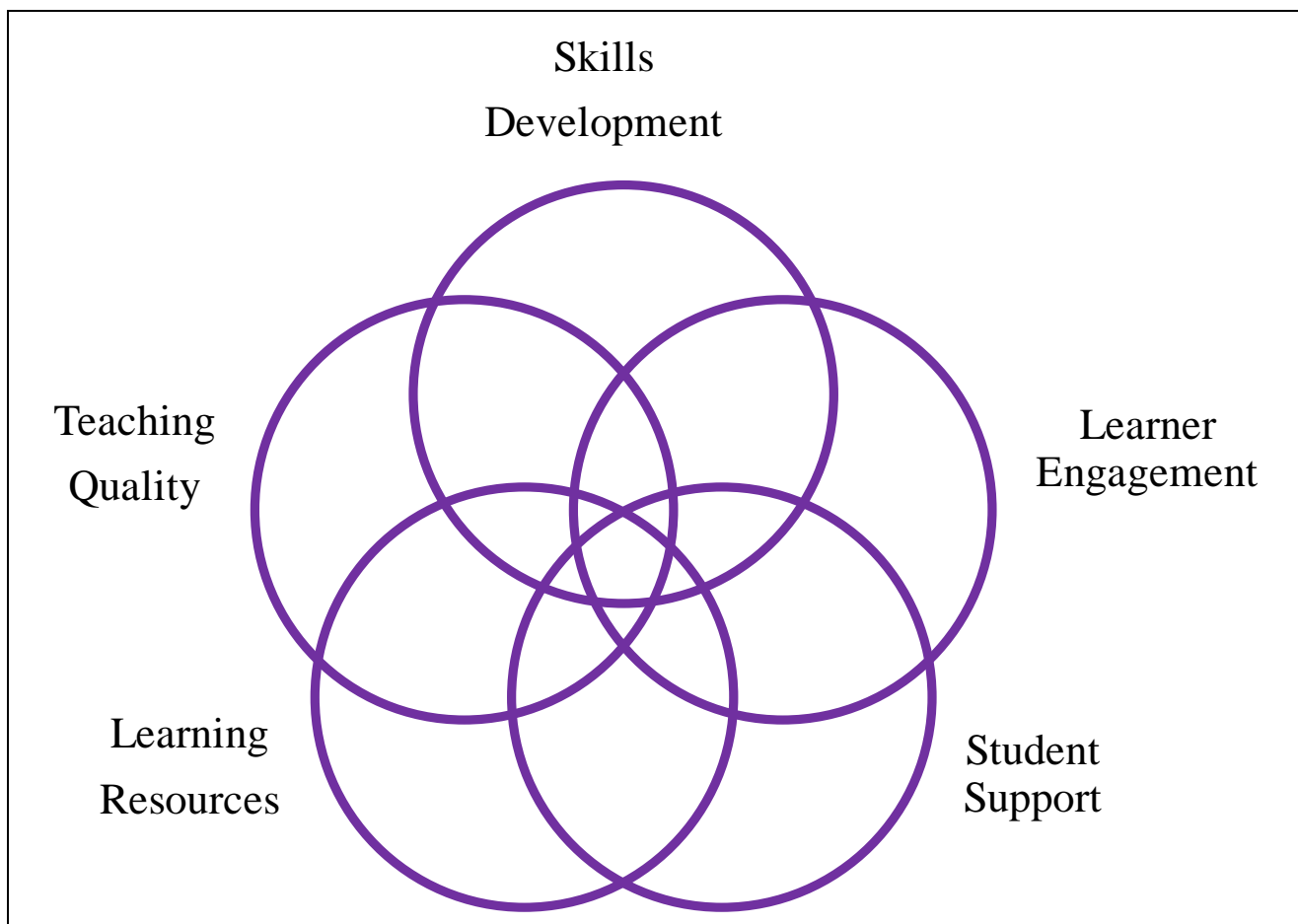
Figure 3: Expanded UES 2012 conceptual structure

Recommendation 3: The core UES should measure five facets of student experience: Skills Development, Learner Engagement, Quality Teaching, Student Support and Learning Resources.

3.4   Enhanced questionnaire items

Additional items were reviewed for inclusion in the expanded 2012 UES. A range of factors were used to guide selection of these items, including links with other data collections, consultation with stakeholders and experts, ownership arrangements, relevance to contextual and demographic groups, and type of use within the UES ('common core', 'contextual core', or 'contextual optional'). A shortlist of 'common core' and 'contextual core' items was produced by ACER, discussed with the UES Consortium and Project Advisory Group, refined and technically reviewed, and operationalised for field testing as part of the 2012 data collection.

National items are listed in Table 16 to Table 23 in Appendix E. In terms of the broader instrument architecture, after reviewing the remaining set of items it was decided to provide all items to all respondents rather than providing only 'common core' items to all respondents and 'contextual core' items to selected respondents of a particular group, though several 'not applicable' response categories were introduced. A review of item language was undertaken by the UES Consortium and experts, with small changes made to the wording of items piloted in 2011. As a result of consultation and research several new quality-focused and demographic/context items were added to the UES questionnaire.

> ***Recommendation 4: The UES items reproduced in Appendix E of this UES 2012 National Report should form the core UES questionnaire.***

While most UES items invite students to select from a prescribed set of responses, two open-response items invite students to provide any additional textual feedback on their experience. These items, listed in Table 21, are 'What have been the best aspects of your university experience?' and 'What aspects of your university experience most need improvement?'.

Responses to these items offer a wealth of information on students' perceptions of university. Automated classification using textual analysis software provides an initial means of analysing the voluminous data such items yield. To facilitate this, ACER developed such software within the frame of the 2012 projects—the Student Voice software. This software classifies these responses using textual processing algorithms and a predefined dictionary adapted with permission from the CEQuery software (GCA, 2012).The dictionary allows for phrases, variations of words, as well as common misspellings. Currently the dictionary contains over 7,500 lines describing about 420 key terms. The software counts terms in the dictionary and orders this count relative to a taxonomy. Specifically, each term in the dictionary exists within a category, and categories are nested within higher-level categories. The taxonomy was reformed to align with UES concepts presented in Figure 3. No dictionary is currently available for the Learner Engagement or Learning Resources areas. The software is currently online and can be made available to institutions through a secure login on the UES Exchange.

Australia has a large higher education system relative to population, but the system is small on the world scale and highly international. This makes building international points of comparison into the UES very important. During the 2012 development the following international surveys and contexts were kept in mind: the United States National Survey of Student Engagement (NSSE) (NSSE, 2012), the United Kingdom National Student Survey (NSS) (NSS, 2012), the OECD's Assessment of Higher Education Learning Outcomes (AHELO) (OECD, 2012), the European Commission's U-Multirank data collection (EC, 2012), and the AUSSE (ACER, 2012). Of course, deployment, analysis and reporting also play into the capacity to develop international comparisons. An international benchmarking strategy is discussed in the final chapter of this report.

Due to project timelines the development of 'contextual optional' items—those pre-existing items to be deployed for selected institutions—was deferred until after 2012 fieldwork, although the CEQ items were included in this regard to enable psychometric work and several institutions requested to deploy AUSSE items in a serial fashion with the UES, enabling testing of this facet of the UES architecture. Information on potential material to include in the 'contextual optional' section of the UES for the longer term was sourced from institutions through an online feedback mechanism in August/September. This matter was discussed at some length at a face-to-face forum with institution representatives on 30 August 2012, which indicated that incorporating institution-specific or group-specific items into the UES is critical to the sector, but that processes and protocols would be helpful. In response, the following protocols are proposed to guide the incorporation of institution- or group-specific items into the UES:

1. institutions (or groups of institutions) may opt to use the UES as a vehicle to link to additional items or instruments;
2. any non-UES material must be included after the core UES items;
3. no change can be made to UES administrative arrangements as a result of incorporation of third-party materials;
4. a register of such practice must be kept by UES management, with regular updates provided to DIISRTE;

5. the incorporation of this instrument should be made clear to potential respondents (including disclosures about privacy, confidentiality, purpose, ownership, etc.);
6. respondents must be notified within the survey when they are moving to the other instrument; and
7. the management, data and risk associated with any third-party materials rests with the manager of that data collection.

Recommendation 5: As an essential facet of its utility for continuous improvement protocols should be adopted to facilitate the incorporation of institution-specific items into the UES.

3.5   Instrument operationalisation

The UES items were programmed into ACER's online survey system and the Social Research Centre's (SRC) Computer Assisted Telephone Interviewing (CATI) system. To increase the efficiency, validity and reliability of data collection and outcomes, the UES did not involve deployment of a single static questionnaire. Rather, experimental design principles (namely: randomisation, replication and control) were deployed as possible to produce various item selections and orderings. Specifically, UES items were combined into three groups, with some rotation within the groups, and these were rotated with demographic items. To provide insights into students' engagement with the survey process a small number of 'marketing' items were asked to gather students' feedback on the instrument and ideas for promotion. CEQ items were divided into two groups and these were incorporated into two versions. As noted above, in 2012, a number of institutions elected to sequence the AUSSE items after the UES deployment, enabling testing of the 'contextual optional' items option. Table 4 shows the five versions used for 2012 fieldwork.

Table 4: UES instrument online rotations

Version A	Version B	Version C	Version D	Version E
UES group 1	Demographics	Demographics	UES group 1	Demographics
UES group 2	UES group 3	UES group 2	UES group 2	UES group 3
UES group 3	UES group 2	UES group 1	UES group 3	UES group 2
Demographics	UES group 1	UES group 3	CEQ version 1	UES group 1
Marketing	Marketing	Marketing	Demographics	CEQ version 2
			Marketing	Marketing

For the CATI instrument all students were asked a basic number of demographic items to ensure identity (university name, gender, year level, field of study). All students were asked two 'overall experience' items. Students were then presented all items from one of the five focus areas taken into the 2012 fieldwork (these were re-named after fieldwork). Only a limited amount of CEQ data was required for the 2012 analyses so no CEQ items were asked in the CATI work. As CATI was only being deployed to maximise response to key items targeted for potential use with MyUniversity (notably those related to overall experience and teaching), these were weighted quite considerably in the deployment of the instrument during fieldwork.

3.6   An overview of validity and reliability

All questionnaires should provide valid, reliable and efficient measurement of the constructs they purport to measure. This imperative is magnified given that the University Experience Survey questionnaire is designed for high-stakes national use, including for potential publication on MyUniversity. The validity and reliability of the questionnaire was analysed in detail, with results

affirming the content and construct validity of the survey instrument, the reliability of the composite focus areas, the performance of the response categories, and the concurrent validity of the data. Detailed results are reported in Appendix F.

3.7 Incorporation of CEQ scales and items

In its 2012 report, the AQHE Reference Group asked that, as part of the 2012 study, the UES Consortium investigate the conceptual and empirical relationship between UES scales and CEQ scales and advise on options for deployment of these scales across the student life-cycle. This matter was flagged as a key issue raised by a large number of institutional submissions received in early 2012.

The potential scope of this analysis is very large. The AQHE Reference Group report (DIISRTE, 2012), for instance, includes discussion of whether the UES deployed across the student lifecycle might embrace and thus replace the CEQ, or whether the UES and CEQ should be distinct surveys applied to different cohorts in the future. International benchmarking was raised, along with the significance of the CEQ's extended time series. As well, substantial feedback was received on this matter during the 2012 study. Sector feedback is very important, as this is not a matter that can be resolved by technical or operational analysis. This is not to say that sustained consideration of detailed matters is not required—it is, and results from such analyses are factored into the deliberations below. Contextual and conceptual considerations must also be taken into account. Findings from several precursor national analyses were considered.

A series of questions were phrased to structure the current analysis. Summary responses are included in this section as a prompt for further analysis. The guiding questions include:

- Is the CEQ as a national survey and the CEQ as an instrument remaining unchanged or is it subject to change and revision?
- What is the CEQ, why was it developed, and how has it changed?
- In a unified approach to student surveys, which CEQ scales would be the most important to retain? Which scales, if any, might be less important to retain?
- How might retained scales be incorporated within an expanded UES?

The first question sets a basic scope of the analysis. One option considered was that the CEQ and UES continue to be treated as separate survey processes and instruments and hence that, so far as the UES-nuanced perspective is concerned, the CEQ should stay as it is. The UES Consortium rejected this stance, primarily on the grounds that this would miss an opportunity to renovate a key facet of Australian higher education's national information architecture.

The second question posed the terms by which the instrument would be analysed. What, broadly, is the CEQ? Early development work proceeded in the 1970s in the United Kingdom (Entwistle & Ramsden 1983). The instrument was formalised within the Australian context by Ramsden (1991a, 1991b) and recommended by Linke for national deployment (Linke, 1991). A scale measuring generic skills was added soon after the development of the original CEQ. Intended for administration to students during their study, the instrument was eventually bundled with the Graduate Destination Survey (GDS) as a feasible means of achieving national deployment. The CEQ has been administered nationally since 1992. A major content extension was made in 1999 (McInnis, Griffin, James, & Coates, 2001), and a further operational and technical renovation in 2005 (Coates, Tilbrook, Guthrie, & Bryant, 2006). In 2010 a change made during national deployment led to an inadvertent break in the time series. The CEQ has served as the basis of numerous institution-specific instruments, and as the basis for international variants such as the

United Kingdom's National Student Survey (NSS) (NSS, 2012). Throughout its use, what is typically referred to as the 'CEQ' has in fact consisted of a series of between 17 and 49 items with these grouped into between four and ten scales. Since 2002 the CEQ scales have been distinguished into two groups, with these typically labelled 'core' and 'optional' (Coates & Ainley, 2006). The 'core' material includes the GTS, GSS and the OSI (the OSI is a single overall item). The 'optional' scales included CGS, AWS, AAS, IMS, SSS, GQS, LRS and LCS, with the IMS, SSS, GQS, LRS and LCS scales flowing from the 1999 development project. Drawing these and other considerations together, the current analysis takes the CEQ as a series of scales designed to seek information from learners about their education. Inherent in this definition is the understanding that:

- the 'CEQ' is to be analysed as a series of 11 composite scales (including OSI) rather than as a single questionnaire or as 49 discrete items;
- the 11 scales are applicable to students across all levels of education; and
- the scales be taken on their merits and not as objects for further improvement.

With this clarification it is possible to address question three: which CEQ scales should be retained and which might be less significant and might be discarded? There are many considerations here, including the UES conceptual structure, contemporary relevance and time series/legacy significance, the measurement properties of the scales, recoded use of the scales by institutions, coherence and value of the recommend scales, overlap with the UES, parsimony, and links with key institutional, national and international contexts. Taking these into account the UES Consortium concluded that:

- the GTS, GSS, OSI, CGS, GQS and LCS scales and their 28 items be retained in a revised national survey architecture; and
- the AWS, AAS, IMS, SSS and LRS scales and their 21 items be phased out from national administration.

The remaining six scales should be fully incorporated into the UES. The GTS, CGS and OSI should be aligned under the UES's Quality Teaching focus area, the GSS and GQS under the UES's Skills Development focus area, and the LCS with the UES Learner Engagement area. The name 'CEQ' should be discontinued and the scales/items should be managed as a group. The GTS, GSS, OSI, CGS, GQS and LCS scales should be used with all UES populations, and other populations as relevant.

This conclusion then flowed to the final consideration regarding arrangements to be made for retained scales. How should the scales be administrated, analysed and reported? In terms of administration a rotated design is recommended that reduces the burden on each respondent while enabling group-level analysis/reporting of information. Table 5 shows the proposed clustering of six scales into three administration versions. Within each version the CEQ items should be administered to students as a cluster. Items would be randomised within each version. Being a single and widely used item, the OSI is included in all three versions. These versions would be cycled within different versions of the broader UES instrument (see Table 4). To retain time series it is proposed that results from these six scales be reported separately alongside the UES metrics for at least three years.

Table 5: Administration versions of retained CEQ scales

Scale	Items	Version 1	Version 2	Version 3
GTS	6	■	■	
CGS	4	■	■	
GSS	6		■	■
OSI	1	■	■	■
GQS	6	■		■
LCS	5	■		■

This analysis has proposed changes that will incorporate key CEQ items and scales within an integrated national survey architecture described for the UES. With mind to broader considerations regarding transitional arrangements regarding the new national data architecture and the need to preview and monitor the proposed arrangements, it is suggested that after three administrations further review is triggered that takes stock of use by institutions and other agencies and considers whether the items be merged with the UES.

Recommendation 6: Selected CEQ items and scales should be incorporated within an integrated higher education national survey architecture. The GTS, GSS, OSI, CGS, GQS and LCS scales and their 28 items should be retained in the revised national survey architecture, and the AWS, AAS, IMS, SSS and LRS scales and their 21 items be phased out from national administration. The name 'CEQ' should be discontinued and the retained scales/items should be managed as a coherent whole. A review should be performed after a suitable period (nominally, three years) to consider whether the scales are incorporated or discontinued.

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4   Recording the student experience

4.1   Introduction

This chapter documents the approach taken to implement the 2012 UES and reviews participation levels and outcomes. The following sections look at institutional participation, defining the student population, selecting students, engaging students, fieldwork operations, participation levels and patterns, and data management procedures. The chapter closes with a brief overview of quality assurance arrangements. A range of more detailed subsidiary reports are provided in the appendices.

4.2   Institutional participation

On release of the AQHE Reference Group report in June (DIISRTE, 2012), ACER wrote to Vice Chancellors at Table A and Table B universities and invited them to participate in the 2012 UES. The letter provided an overview of the 2012 R&D work and data collection. A development brief was provided, and a draft Institution Administration Manual (ACER, 2012) followed shortly thereafter. Institutions were asked to nominate a senior and an operational contact, invited to attend a national teleconference in late June, and advised of access details for the UES Exchange and email. Non-university higher education providers did not participate in the 2012 UES, though given the number and the extent of provision by such providers it was suggested that these be included in future rounds.

> *Recommendation 7: Non-university higher education providers should be included in future administrations of the UES.*

The 2011 UES Development Report recommended that to ensure consistency and efficiency it was preferable that the UES be administered independent of universities. This approach was endorsed by the AQHE Reference Group, and was pursued in 2012. This called for ACER, the administering agency, to compile a national student sampling frame consisting of relevant student contact information, to select students for inclusion in the study, and to implement and review fieldwork outcomes.

During the preparation phase, complications arose as a result of privacy policies and laws that initially prevented around half of Australian universities from being unable to pass student details to a third party. While legislative changes are being progressed to facilitate administering surveys independently at universities in future years, a workaround was required in 2012. ACER communicated with each institution that had indicated they were unable to pass on student details to a third party over the months of June and July to agree to an approach to fieldwork that would enable the 2012 collection to proceed.

This work, requiring extensive input from ACER's legal office, led to arrangements whereby:

- nine institutions conducted the fieldwork for the UES internally (though three of these had followed an independent approach during the 2011 pilot);
- institution-specific non-disclosure agreements were executed between ACER and nine institutions, and between the Social Research Centre (who conducted telephone interviews) and three institutions;

- seven institutions ran an 'opt-out' email campaign with their students in advance of providing ACER with data—student contact details were not provided to ACER for students who had opted-out;
- one institution attempted an 'opt-in' campaign, but due to a low response had to revert to administering the survey using a devolved approach;
- one institution ran an 'opt-in' campaign during email distributions to enable centralised CATI to proceed;
- one institution agreed only to participate once fieldwork was nearly complete; and
- a small number of institutions, including those conducting fieldwork themselves, advised that they would not participate in telephone survey work.

A few institutions ranged across these categories, and some varied their approach as fieldwork was underway. Maintaining the integrity of the project in this context required robust adherence to technical and practical foundations, a very nimble approach to fieldwork management, and extensive liaison with institutional representatives. The net effect of this work was that in 2012 nine institutions implemented fieldwork in-house using a semi-devolved administration. These institutions used centrally developed resources, and worked to ACER's specifications and direction. The institutions provided routine reports of fieldwork processes, and were asked to provide:

- a copy of the precise template used for each email correspondence with students;
- if telephone interviewing was conducted with students, details on how this was conducted and the number of telephone calls made;
- further details on whether correspondence was sent to all sampled students, or sent only to students who had not yet participated in the survey;
- any other direct communication the university made with students for the 2012 UES (e.g. using SMS reminders);
- details of any student queries or complaints received via email or telephone (de-identified where required);
- details on any incentive(s) the university offered to students to participate; and
- a signed copy of the 'VC-UES 2012 non-independent form'.

The 'VC-UES 2012 non-independent form' summarised the total number of emails distributed, the dates of email correspondence, the number of bounce back, opt-outs and out-of office emails received, and which distribution list was used for each email (initial or updated sample file). The process was verified and completed by all universities throughout October and November 2012. Eight of these nine universities did not conduct any CATI. During fieldwork, one collected consent from students (via opt-out) for ACER to conduct telephone interviews. Despite good planning, liaison and delivery, the devolved approach increased the cost, complexity and uncertainty of the data collection. As discussed later, devolved administration also tended to be associated with lower response rates and data yields. To ensure conformity with a standard national protocol only an independent approach should be used in future.

Recommendation 8: As recommended by the AQHE Reference Group, the UES should be administered independent of institutions to enhance validity, reliability, efficiency and outcomes.

4.3   Defining the student population

In broad terms, the target population consists of first-year and later-year students enrolled in undergraduate study onshore at one of Australia's 40 universities. Most students are undertaking

their second semester of study in that calendar year, though this is difficult to define as several institutions have trimester systems and student start dates vary.

This population is not the same as the total Australian higher education student population as various students are excluded from the UES. Specifically, students are excluded from the UES if they:

- are not enrolled in the first or later year of undergraduate study;
- study in a stratum with less than six students;
- study in an off-shore campus of an Australian university.

Other people were not included in the UES due to frame defects or non-response. This included those that did not have a valid email address, had no email address provided, were dead, were omitted from the population by institutions, opted-out of the UES for privacy reasons, or discontinued their enrolment after first semester (though not all institutions were able to exclude these students before the sampling frame submission deadline). Analysis indicated that bias due to such omissions was minimal.

Hence the target population is defined as:

- 'first-year students' who:
    o are enrolled in undergraduate study;
    o are studying onshore;
    o commenced study in the relevant target year; and
    o at the time of surveying were enrolled for at least one semester; and
- 'later-year students' who:
    o are enrolled in undergraduate study;
    o are generally in their third year of study;
    o are studying onshore; and
    o commenced study prior to the target year.

Institutions participating in the survey assisted ACER with the population specification and student selection process by providing a list that included all students within the UES target population. These population lists (technically, the 'sampling frame') included students' first names, email addresses and telephone numbers, along with around 30 elements from the Higher Education Information Management System (HEIMS) data collections (DIISRTE, 2012). The files from which the elements in the sampling frame were derived include the 2012 Student Enrolment File (EN), Student Load/Liability File (LL), Course of Study File (CO), Commonwealth Assisted Students HELP-Due File (DU) and Campus File (CM). Institutions were asked to use the files that include students enrolled in any units of study in the first half of the year, and to use the files that they felt were most appropriate for the study regardless of submission status. Only a single record was provided for each student. A detailed operational description of the population specification and preparation process was provided in the UES Institution Administration Manual (ACER, 2012).

Best efforts were made to operationalise the population definitions, taking into account institutional and national data collections, protocols validated via the AUSSE since 2007, and policy contexts. ACER received the unit-record files from institutions and cleaned, coded, validated, and compiled the national sampling frame. Specifically, this involved reading and cleaning the data file, standardising element definitions, adding specific codes and labels, checking that supplied records were in scope, calculating various flags and dummy variables, working with institutions to resolve problems, calculating threshold figures and constraints, identifying strata, compiling all files, and cross validating. Detailed checks and cleaning was conducted on student email addresses and

telephone numbers. The work was performed by three analysts separately to cross check and ensure quality.

This sampling frame is stratified by three elements, details of which are provided in Appendix C:

- 40 universities (see Table 12);
- 2 year levels (as noted); and
- 45 subject areas (see Table 13).

The same stratification variables and levels/areas were used where applicable for all institutions. For instance, the entire national sampling frame was divided by institution, then by the two year levels, then by subject area. All institutions delivered in both year levels but not all institutions delivered in all subject areas. There were no exceptions to this standard national approach.

The UES is designed to capture an individual's overall (as in, 'institution-wide, and beyond') experience, but field of education is a critically important part of this. A reasonable number of students study two or more qualifications at Australian universities, and consideration should be given to the technical and operational management of this phenomenon. One approach has been used for a period of years with the CEQ (Coates & Ainley, 2006) whereby each respondent is able to provide up to two responses, for each qualification or major, and it is response rather than respondent data that is analysed. This approach does not translate directly to the current context given the expanded focus and distinct reporting requirements of the UES. Analytically, there are at least four possible ways in which the results of a respondent studying in two qualifications could be reported, and further research and consultation should be conducted to identify an optimal solution. Different solutions may fit different reporting contexts, and if so all need to be taken into account in population definition and student selection.

Given the set of subject areas across institutions in 2012, there were 2,100 strata with at least one student. After excluding strata with less than six students (as prescribed by DIISRTE), this reduced the count by 146 strata (350 students) to 1,954.

> *Recommendation 9: All institutions should contribute to refining the specification and operationalisation of the UES population and in particular of 'first-year student' and 'final-year student'. Protocols should be developed for reporting results that may pertain to more than one qualification. Institutions should be invited to include off-shore cohorts in future surveys.*

4.4   Student selection strategies

The number of students sampled for each stratum was calculated using one of two approaches, each based on particular response assumptions.

If there were 500 or less students in a stratum a census was conducted of all students in the stratum. A 35 per cent rate of return was assumed given recommendations made by Dennis Trewin in 2011 (see Radloff, Coates, James, & Krause, 2011). This value of 35 per cent was set as a threshold technical rate for any census model ('a feasible stretch target').

Potentially, the whole UES could be run as a census of all students. While 'default census' and 'convenience sampling' methods were the predominant data collection approaches in Australian higher education until more refined methods were propagated via the AUSSE (Coates, 2009), the default census is not necessarily the most valid nor efficient means of securing data for policy or

management. In the last six years ACER has worked with higher education institutions in Australia and internationally to build capacity and confidence in scientific sampling, which has been proven to yield required outcomes.

If there were more than 500 students in a stratum then a sufficient number of students were selected to deliver 200 expected responses given a conservative (lower bound estimate) planning response rate of 15 per cent. The conservative planning value of 15 per cent was assumed to inflate the number of students selected and approached, and hence increase the changes of capturing the desired number of returns.

Hence all students were selected for stratum with up to 1,333 students, and with larger stratum a random sample (details below) of 1,333 students was drawn. The value of 200 was derived from the desire for error bands of ±5 per cent at a 95 per cent level of confidence given observed scale standard deviations in 2011 of 18 score points (a conservative standard deviation of 35 was assumed during planning).

Table 6 gives an example, showing selection outcomes for six strata within the target population. This shows stratum size (Total population), sample size (Sample) and expected yield (Expected). Strata 1 and Strata 2 are excluded as the total population is less than six students. A census of all students is conducted in Stratum 3 and Stratum 4 with expected yield of 35 per cent. A census of all students in Stratum 5 is conducted with expectations that this will yield a minimum of 200 responses. For Stratum six a random sample of 1,333 students is drawn, with hopes that this will yield at least 200 responses. Attachment I provides these details for all 1,954 strata.

Table 6: Example student selection outcomes for sample strata

Strata	Total population	Total population ≥ 6	Sample	Expected
1	2	0	0	0
2	5	0	0	0
3	53	53	53	19
4	499	499	499	175
5	678	678	678	200
6	4249	4,249	1,333	200

In practice there is no strict bifurcation between a census survey and a sample survey given diverse institutional structures, response rates and reporting requirements. In broad terms, deciding between whether a census or a sample should be administered in a population is a complex process that necessarily takes into account many technical, practical and contextual factors such as:

- support by participating institutions;
- the size and characteristics of the population;
- the diverse characteristics of institutions;
- providing some/all students with opportunities for feedback;
- the relationship with other data collections, in particular student surveys;
- analytical and reporting goals, in particular sub-group breakdowns;
- anticipated response rates and data yield;
- consistency and transparency across institutions; and
- cost/efficiency of data collection processes.

These design principles were operationalised and used to select required students from the national student sampling frame. All students were included in the 2012 UES where a census was

conducted. For the larger strata, a systematic random sample of students was selected within strata. Implicit stratification included factors such as gender, qualification, mode of attendance, detailed field of education, and citizenship. A range of simulations were performed to confirm assumptions and ensure that the selections would be likely to deliver information with required levels of reliability and validity. The lists were then prepared for use with fieldwork.

4.5   Engaging students in the feedback cycle

The short lead times and compressed schedule in 2012 meant that only limited survey engagement activities could be designed and implemented. Time was recognised by ACER and DIISRTE as a major constraint to survey processes and outcomes, prompting the need to explore innovative solutions.

In 2012 ACER's marketing department designed and implemented a campaign that involved supporting institutional promotions and exploring broader opportunities for raising awareness. To enhance student awareness and participation they must feel connected to the campaign. The marketing message needed to be creative, unique and easily recognisable. The campaign also had to reflect the seriousness of the survey, the importance of outcomes, and take into consideration implicit drivers and any incentives as listed above. Messages needed to be conveyed in a student-preferred style and embrace a range of promotional mediums. Social media, in particular, was vital to disseminate this message and was embraced widely.

ACER initially approached university marketing and communication departments to garner their support in building UES awareness throughout the general student, academic and non-academic population and to establish collaborative working relationships. The communication objectives were threefold—to determine if they were indeed the best contact to promote the UES within the university, to encourage them to visit the UES website for sample promotional collateral, and to lay foundations for a collaborative working relationship. By beginning work with university marketing and communication departments a multi-faceted approach was developed that helped to penetrate multiple levels of both academic and non-academic staff across many faculties/schools at each university. Communication occurred via a mixed medium of written correspondence, emails and many telephone calls. Student communication managers and surveys managers ultimately assisted in determining the most appropriate promotional mix for each university. Larger universities with a devolved organisational structure involved extra challenges due to a very limited level of central control. In such instances many relevant university personnel and student-based organisations were contacted to proliferate the UES message. Departments were also approached in specific universities to encourage 'lagging' subsets of students to complete the survey. Professional bodies such as Engineers Australia were also approached to promote the UES and to further increase response rates amongst specific student groups.

A raft of marketing collateral was thoughtfully designed, produced and collated in an easily accessible online marketing kit to assist all 40 universities to deliver their best-considered approach for engaging students. ACER created a range of bespoke promotional materials, which included posters, PowerPoint slides for lecturers, postcards, QR codes, SMS, screen savers, digital slides, LMS/portal banners, banner advertising, online news feeds, and Reddit, Vimeo and YouTube clips. Early in the fieldwork process institutions were provided with a list of suggested 'weekly awareness raising' ideas on how to disseminate these materials. Universities were given the opportunity to provide a $1,000 incentive as they considered appropriate, and most but not all universities accepted this incentive offer. A UES website was developed (www.acer.edu.au/ues) that received over 100,000 unique page views throughout the duration of the survey. Universities were strongly

encouraged to disseminate promotional materials via social media channels including, Facebook, YouTube and Twitter.

The UES campaign message was a critical call to action for students to 'Check their Inbox' and 'Have their say'. The UES promotional campaign needed to be remarkable, unique and easily identifiable. Hence three 'dog' YouTube clips featuring Professor K-Nine were produced (see Appendix D). There were over 8,000 views of these clips and despite a mixed reaction amongst universities they certainly achieved their objective in being unique, memorable and remarkable. At least half of the universities involved in the UES 2012 adopted this campaign.

Given time constraints a broader mass marketing approach was taken to achieve a high level of student awareness. Two significant media releases were written and distributed. The initial release was university focused and emphasised the importance of involvement from each university in this national survey. This was well received with articles published in The Australian newspaper's Higher Education Supplement and multiple radio news broadcasts. The second media release was specifically targeted towards youth media, student newspapers, student associations and student representative councils. The support of the National Union of Students and the Council for International Students was garnered to produce a joint Media Release, which was well received with many media hits, including the front page of MX (see Appendix D), a major commuter newspaper in Melbourne and Sydney, and the ABC across regional and metropolitan Australia, which includes youth station Triple J. A number of student newspapers also used this media release to help promote the UES. Presidents of NUS and CISA were active in tweeting and posting Facebook messages urging students across the nation to check their inbox and complete the survey to have their say. Overall, student associations and student councils were very supportive of the UES and were generally willing to help promote this to their fellow student population. A full list of media is given in Appendix D.

As noted in the previous chapter, in 2012 around 60 per cent of all students (around 66,000 respondents in total) were asked to provide feedback on where they had heard about the UES. This was designed to provide some indicative feedback on the marketing campaign. In addition to an open 'other' box, several check-box alternatives were offered, including: posters around campus, teaching staff, online videos, Facebook, Twitter, university newsfeeds, banners on university computers, university website, ACER website, or student association website.

Summary national results are reported in Table 7, which shows percentage (%) and standard deviation (SD) statistics. These figures show that overwhelmingly university newsfeeds and websites are the main means by which 2012 respondents reported hearing of the UES. It is important to note that these figures do not reflect non-respondents, and that there is a complex interdependency between these options. For instance, university newsfeeds may have included Facebook and Twitter, and often directed students through to online videos. Hence these figures must be treated with caution. Even so, they illustrate that nationally few students learned about the UES via teaching staff (perhaps the most salient form of promotion), through posters around campus, or through various student association websites. The results mark out opportunities for improvement.

The results were analysed nationally, and for selected subgroups. There were no differences across student year levels, though first-year students appeared slightly more likely to see website and other online promotions. There were no obvious differences in terms of mode of study, campus location, or the proportion of study done online. Males appeared slightly more than females to be notified about the study via university newsfeeds. As anticipated during the administration, most differences were associated with students' institution. At two institutions, for instance, 10 or more per cent of

students learned of the UES via teaching staff compared with a national institutional average of around four per cent.

Table 7: Students' reception of various promotional activities

Promotion outlet	%	SD
Posters around campus	1.23	11.03
Teaching staff	4.30	20.28
Online videos	0.47	6.85
Facebook	1.41	11.79
Twitter	0.31	5.59
University newsfeeds	22.15	41.52
Banners on university computers	1.23	11.04
University website	24.44	42.97
ACER website	1.05	10.21
Student Association website	3.43	18.19

In general, assuming a July-to-September administration implies planning late the previous year, and working with a wide range of stakeholders to clear space for the UES, pre-survey promotions should begin as early as first semester. Analysis of student subgroups makes clear that certain types of students (notably males, and business, engineering and creative arts students) are less likely to participate in feedback than others. Additional tailored strategies and fieldwork applications may need to be developed for such groups. The 2012 experience suggests that the best approach to marketing is one that blends a national initiative with institution-specific contributions.

Recommendation 10: Given its significance a professional marketing capability should be deployed for the UES, working nationally and closely with institutions. To yield maximum returns, UES marketing and promotion should begin around nine months before the start of survey administration.

4.6   Fieldwork operations

The data collection process was designed to be robust and efficient, and to produce reliable and valid results. Survey operations were managed by ACER, with institutions assisting with recruitment, sampling and interpretation. Technical procedures were used to ensure the quality of survey processes and hence the integrity of survey outcomes.

The 2012 UES was the first time in Australian higher education that an independent agency had implemented a single national collection of data on students' university experience. The survey was also the largest ever of its kind. Planning for the 2012 collection was constrained by project timelines, requiring ACER to draw on prior research, proven strategies and existing resources used for other collections to design and implement 2012 UES fieldwork. Given the pioneering nature of the work, and the necessarily varied nature of institutional participation, a number of redesigns and decisions had to be made as fieldwork progressed. This required ongoing liaison with institutions, cross-reference to technical designs, and analysis of practical developments and constraints. That communications overall were effective is shown by survey outcomes. Nonetheless, establishing communication protocols and processes that were responsive and considered proved challenging on occasions given timeframes for planning, support and execution.

In essence, the fieldwork involved a series of promotional activities, a series of initial emails being sent to students, targeted email reminders and then targeted telephone interviewing. Within these broad parameters, given the independent approach and access to detailed metrics, a dynamic approach to fieldwork management was deployed rather than rigid adherence to predefined structure. Within design constraints, this afforded ACER with the capacity to optimise resources and outcomes.

ACER continually monitored the number of bounce-backs received after sending email invitations and reminders and advised universities if a high number of bounced emails had been received from students at their institution. This included liaison with numerous departments (including marketing and survey and evaluation departments) at one university that had a high proportion of students who had never logged on to their student accounts meaning the UES was not reaching the intended cohort. In addition to this, both ACER and the SRC gave students the opportunity to 'unsubscribe' from email reminders and telephone calls inviting their participation. These 'unsubscribes' were recorded as exemptions.

Follow-up procedures were shaped by a range of technical, operational and legal processes. The main reasons for ceasing follow-up by telephone or email were when an individual:

- asked to 'unsubscribe' from follow-up emails or had asked ACER to cease contacting them via email (where we were able to link their email and/or survey link back into the overall list, which was possible if they had followed unsubscribing instructions but not always possible if they responded from a different/redirected email address than the supplied address);
- clicked on the online survey form and filled in at least one response to the questionnaire, but did not complete the survey or press the 'submit' button;
- completed the online or telephone questionnaire;
- had indicated on the telephone that they were out of scope for the survey (i.e. not a current university student, didn't attend a specified university, was away for duration of survey, claimed to have done survey online, unable to complete the survey for health reasons); or
- had refused to participate in the survey.

Follow up telephone calls were not made if:

- a number was ineligible (i.e. number disconnected, wrong number recorded, number was a fax/modem, incoming call restrictions, not a residential number);
- a student indicated that they would prefer to do the survey online; or
- a student had language difficulties.

Responses were monitored by ACER and SRC on a daily basis. Response levels were reviewed by institution, subject area and year level (the defined strata). Feedback on response and individual completions was provided on regular occasions to institutions participating in a devolved fashion, to allow them to target their email reminders. Information (at a unit-record level) on responses to the survey was also provided to universities participating in a devolved way from ACER's marketing department to assist universities in targeting promotions appropriately, and to inform ACER on which students to follow up with via email reminders and telephone interviewing.

Because of the multi-modal administration where both online and telephone surveying was deployed the SRC provided ACER with daily updates reporting which students had responded to the survey and which students had unsubscribed. This updating process enabled ACER to remove these students from follow-up emails. ACER also provided SRC with daily updates on which

students had completed the survey online and which students had unsubscribed via email. In turn, this allowed SRC to ensure these students were not called during telephone interviewing over the evening.

4.7   *Participation levels and patterns*

The 2012 UES fieldwork ran from 25 July to 9 October 2012. Because of differences in semester dates at different universities there were multiple different fieldwork administration start dates, and email reminders were also sent to institutions on different dates. Most institutions (24) commenced fieldwork in the week of 23 July 2012, with 11 more universities beginning fieldwork in the week commencing 30 July 2012. One institution commenced fieldwork during the week of 6 August 2012, two commenced fieldwork during the week commencing 13 August 2012 and two universities commenced fieldwork in early-to-mid September. All emails sent by ACER were distributed directly from ACER's secure internal servers and not via any third-party email agency or servers. Table 8 provides a working summary of email invitations and reminders sent to students. One institution (NDU) sent eight emails with the final email sent on 25 September to 4,800 students.

Table 8: Email distribution dates and numbers

HEI	Semester start	Email 1 Date	Email 1 No	Email 2 Date	Email 2 No	Email 3 Date	Email 3 No	Email 4 Date	Email 4 No	Email 5 Date	Email 5 No	Email 6 Date	Email 6 No	Email 7 Date	Email 7 No
ACU	30-Jul	30-Jul	11,362	2-Aug	10,985	7-Aug	10,740	13-Aug	10,797	16-Aug	10,314	29-Aug	9,958	10-Sep	9798
ANU	23-Jul	26-Jul	5,877	2-Aug	5,419	9-Aug	5,092	16-Aug	4,826	7-Sep	3,776				
BOND	10-Sep	11-Sep	2,548	17-Sep	2,378	20-Sep	2,377	24-Sep	2,194	1-Oct	2,142				
CDU	16-Jul	26-Jul	1,888	31-Jul	1,755	7-Aug	1,573	13-Aug	1,602	16-Aug	1,415	29-Aug	1,445	10-Sep	1355
CSU	9-Jul	26-Jul	9,968	31-Jul	9,455	7-Aug	8,730	13-Aug	8,777	16-Aug	8,052	29-Aug	7,943	10-Sep	7532
CQU	2-Jul	26-Jul	7,064	31-Jul	6,651	7-Aug	6,285	13-Aug	6,272	16-Aug	5,383	29-Aug	5,112	10-Sep	4843
CURTIN	16-Jul	14-Aug	17,297	22-Aug	15,609	29-Aug	14,210	4-Sep	13,778						
DEAKIN	9-Jul	26-Jul	18,055	31-Jul	17,377	7-Aug	16,791	13-Aug	16,781	16-Aug	15,949	29-Aug	15,945	10-Sep	15683
ECU	30-Jul	30-Jul	7,075	2-Aug	6,511	7-Aug	5,889	13-Aug	5,920	16-Aug	5,486	29-Aug	5,365	10-Sep	5045
FLINDERS	23-Jul	25-Jul	9,524	31-Jul	9,166	7-Aug	8,845	9-Aug	8,718	15-Aug	8,450	20-Aug	8,316	5-Sep	7966
GRIFFITH	23-Jul	26-Jul	13,013	31-Jul	12,284	7-Aug	11,636	13-Aug	11,808	16-Aug	10,906	29-Aug	10,673	10-Sep	10261
JCU	23-Jul	26-Jul	4,068	31-Jul	3,870	7-Aug	3,642	13-Aug	3,654	16-Aug	3,402	29-Aug	3,340	10-Sep	3112
LTU	23-Jul	26-Jul	8,456	31-Jul	8,037	7-Aug	7,380	13-Aug	7,454	16-Aug	5,974	29-Aug	6,782	10-Sep	6554
MQU	30-Jul	30-Jul	16,786	2-Aug	16,114	6-Aug	15,272	9-Aug	14,793	20-Aug	14,109	6-Sep	13,449		
MCD	23-Jul	26-Jul	321	31-Jul	251	7-Aug	206	13-Aug	211	29-Aug	186				
MONASH	23-Jul	26-Jul	37,142	31-Jul	33,555	7-Aug	30,604	13-Aug	38,254	16-Aug	10,079	29-Aug	35,469	10-Sep	22706
MURD	30-Jul	30-Jul	6,828	2-Aug	6,368	7-Aug	6,087	13-Aug	6,128	16-Aug	5,667	29-Aug	5,555	10-Sep	5147
QUT	23-Jul	26-Jul	22,001	7-Aug	20,304	13-Aug	21,411	16-Aug	17,947	29-Aug	20,057	10-Sep	19,529		
RMIT	16-Jul	10-Sep	18,066	19-Sep	17,474	25-Sep	17,072	27-Sep	16,601	2-Oct	16,260				
SCU	18-Jun	26-Jul	6,674	31-Jul	6,494	7-Aug	6,205	13-Aug	6,154	16-Aug	5,891	29-Aug	5,583	10-Sep	5395
SWIN	6-Aug	7-Aug	11,395	13-Aug	11,032	20-Aug	10,690	29-Aug	10,422	6-Sep	10,137	11-Sep	9,785	17-Sep	9601
ADELAIDE	23-Jul	26-Jul	11,959	31-Jul	11,096	7-Aug	10,234	13-Aug	10,500	16-Aug	9,452	29-Aug	9,260	10-Sep	8628
BALLARAT	30-Jul	30-Jul	3,382	2-Aug	3,156	7-Aug	2,998	13-Aug	2,962	16-Aug	2,547	29-Aug	2,582	10-Sep	2453
CANBERRA	13-Aug	16-Aug	7,684	20-Aug	7,347	29-Aug	6,821	6-Sep	6,544	11-Sep	6,120	17-Sep	5,837	24-Sep	5741
UNIMELB	23-Jul	26-Jul	14,125	31-Jul	13,150	7-Aug	12,296	13-Aug	12,591	16-Aug	6,304	29-Aug	11,718	10-Sep	11354
UNE	25-Jun	26-Jul	8,412	31-Jul	7,985	7-Aug	6,957	13-Aug	6,982	16-Aug	5,636	29-Aug	6,391	10-Sep	6139
UNSW	16-Jul	25-Jul	20,948	6-Aug	19,422	9-Aug	18,991	20-Aug	17,681	5-Sep	16,790				
NEWCASTLE	23-Jul	26-Jul	15,694	31-Jul	14,630	7-Aug	13,136	13-Aug	12,430	16-Aug	6,547	29-Aug	11,073		
NDU	30-Jul	2-Aug	5,522	6-Aug	5,519	9-Aug	5,508	28-Aug	4,894	5-Sep	4,808	11-Sep	4,805	18-Sep	4,804
UQ	23-Jul	26-Jul	25,279	31-Jul	23,978	7-Aug	21,578	13-Aug	22,137	16-Aug	8,899	29-Aug	20,102	10-Sep	19388
UNISA	23-Jul	26-Jul	14,373	31-Jul	12,950	7-Aug	12,000	13-Aug	12,409	16-Aug	9,770	29-Aug	11,090	10-Sep	10508
USQ	16-Jul	26-Jul	9,035	31-Jul	8,747	7-Aug	8,317	13-Aug	8,355	16-Aug	8,009	29-Aug	7,624	10-Sep	7425
USYD	30-Jul	30-Jul	21,393	2-Aug	19,487	7-Aug	18,184	13-Aug	18,750	16-Aug	11,313	29-Aug	17,047	10-Sep	16322
UTAS	16-Jul	26-Jul	7,643	31-Jul	7,157	7-Aug	6,575	13-Aug	6,724	16-Aug	5,080	29-Aug	6,086	10-Sep	5766

HEI	Semester start	Email 1		Email 2		Email 3		Email 4		Email 5		Email 6		Email 7	
		Date	No	Date	No	Date	No	Date	No	Date	No	Date	No	Date	No
UTS	30-Jul	30-Jul	14,548	6-Aug	13,910	9-Aug	13,583	15-Aug	13,257	20-Aug	13,005	28-Aug	12,791		
USC	23-Jul	30-Jul	4,848	2-Aug	4,574	7-Aug	4,401	9-Aug	4,395	16-Aug	4,161	29-Aug	3,541	10-Sep	3307
UWA	30-Jul	30-Jul	7,134	2-Aug	5,953	6-Aug	5,384	9-Aug	5,170	13-Aug	4,854	20-Aug	4,636	6-Sep	4468
UWS	30-Jul	30-Jul	14,401	2-Aug	13,567	7-Aug	12,965	13-Aug	13,062	16-Aug	11,118	29-Aug	11,483	10-Sep	10901
UOW	23-Jul	26-Jul	10,670	6-Aug	9,913	10-Aug	9,810	29-Aug	9,120	14-Sep	8,368				
VU	23-Jul	26-Jul	12,322	31-Jul	11,838	7-Aug	11,393	13-Aug	11,556	16-Aug	10,977	29-Aug	10,685		
TOTAL			**464,780**		**435,468**		**411,868**		**412,610**		**303,284**		**316,195**		**227,398**

By the close of fieldwork on Tuesday 9 October 2012, just over 113,300 questionnaires had been completed by students invited to participate in the UES. Just over 99,200 questionnaires were completed online, and more than 14,000 completed via telephone interviewing. Figure 4 reports the cumulative percentage of national response by date, with breakdowns by survey mode. Figure 5 presents the same figure for four sample institutions.
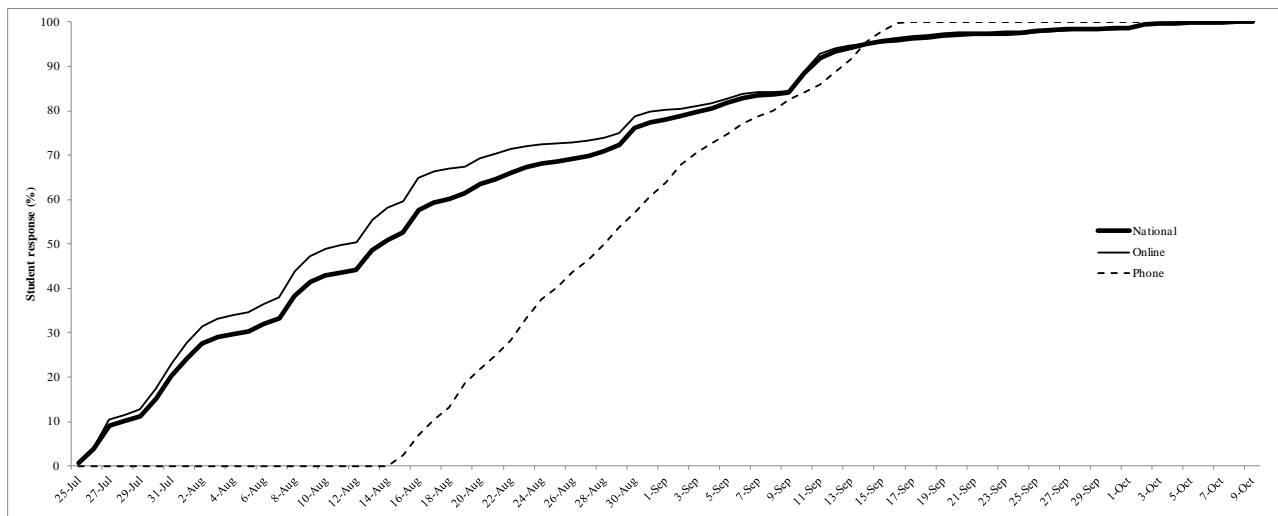
Figure 4: Cumulative online, telephone and national response distributions by date
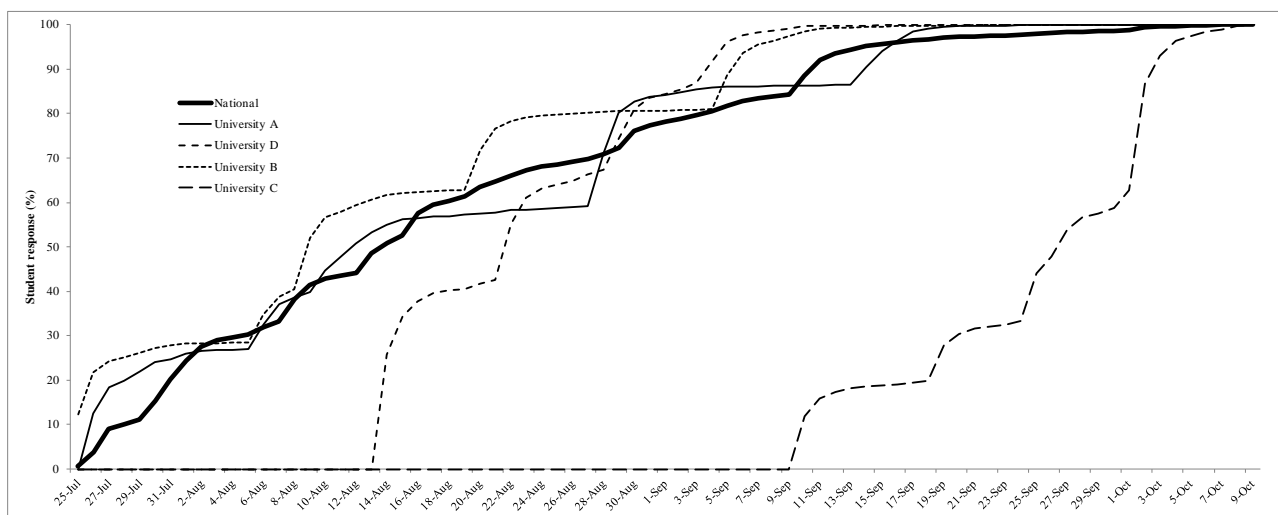
Figure 5: Cumulative response distributions for four sample universities and Australia by date

Figure 6 provides an example of the response to email invitations from one de-identified university. This shows the pattern of response to the five email invitations sent to students at this particular institution. This shows that completions to the online survey spike immediately after students have been sent an invitation or reminder, and also that responses decay quite rapidly. A similar pattern of response to the online questionnaire can be seen at all universities participating in the UES.
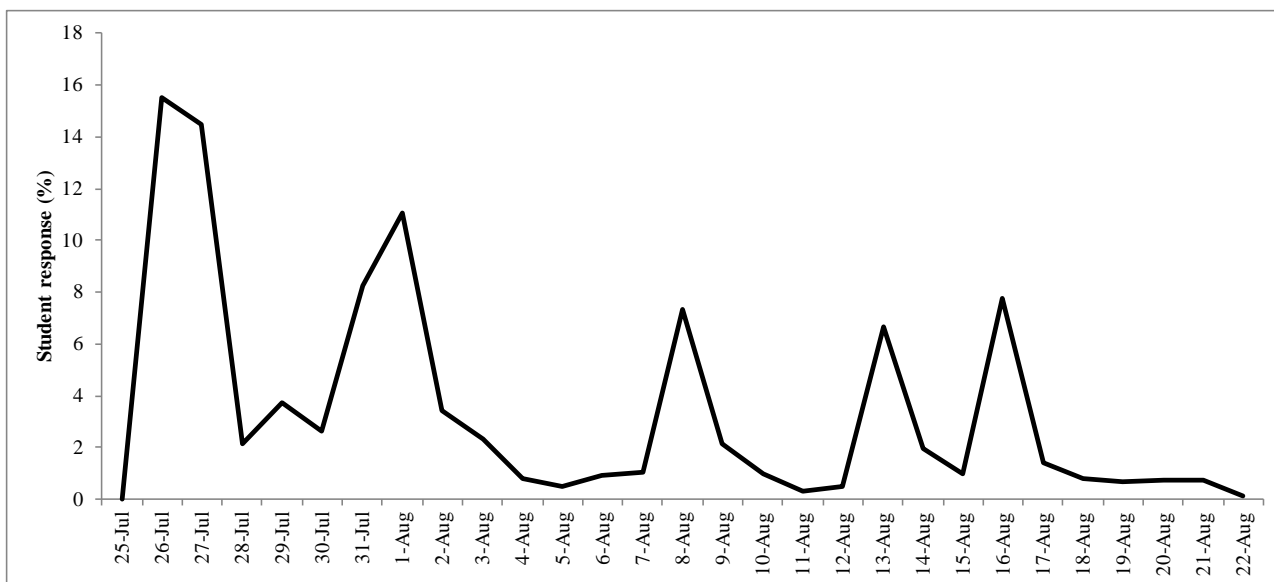
Figure 6: Student response for a single institution by date

The UES was focused on stratum level rather than aggregate national response. Several different partitionings were considered in reviewing the adequacy of response. A full response report for each partitioning is provided in Attachment I. In summary, based on these analyses sufficient sample was achieved:

- at the institution level for all institutions;
- at the institution/year level for all institutions;
- for 87 per cent of all institution/subject area partitioning;
- for 92 per cent of all institution/broad field of education partitioning;
- for 80 per cent of all institution/year/subject area partitioning (the planned partitioning); and
- for 89 per cent of all institution/year/broad field of education partitioning.

A detailed breakdown of response by institution is provided in Table 9. In this presentation, the total population is the number of students at each institution. Population exclusions are defined above. Together, these yield the target population. Students (either all (census) or some (sample) are drawn from the survey population. An expected number of responses is anticipated at each institution (distributed across year levels and subject areas) determined by whether a census or sampling approach was used. The number of online, telephone and total responses achieved is shown. The rate of return (response rate) is shown (total responses divided by sample), as is the yield rate (responses divided by expected numbers).

In summary terms, aggregated to the institution-level the minimum rate of response is 13 per cent at one institution ranging to 45 per cent at another. The median institutional response rate is 27 per cent (mean 26%), and the median yield rate is 81 per cent. Yield rates range from 50 to 155 per cent, with mean yield being 84 per cent. All institutions achieved at least half of the required yield, and two-thirds of all institutions achieved at least 75 per cent of the required yield. Figure 7 shows that response was higher for institutions participating in an independent fashion. National average return (24%) and yield (82%) rates are shown via short bars.
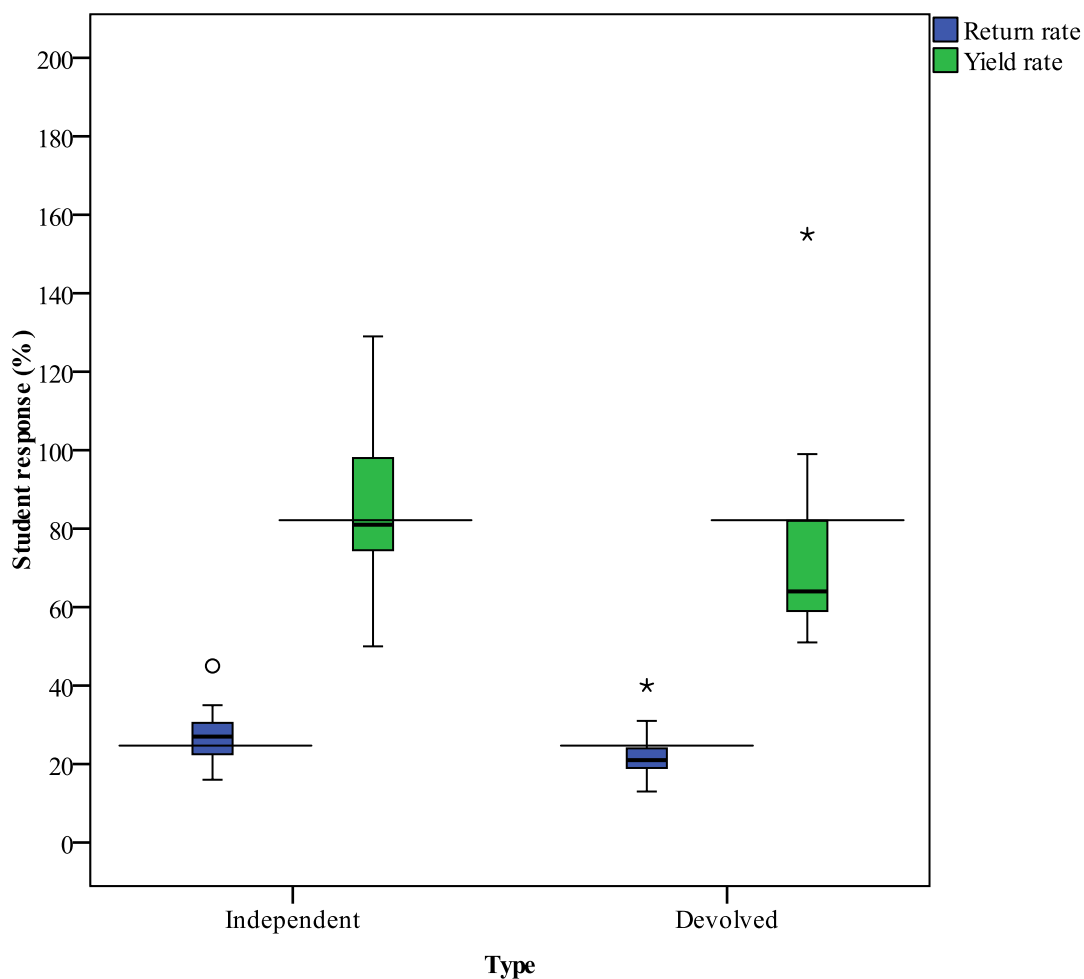
Figure 7: Student return rates and yields by type of administration

The variation in response rates across institutions is marked, and worthy of brief comment. For instance, it is instructive to consider the institution in Figure 7 represented by an asterix in the devolved graph. At this institution (with return of 40% and yield of 155%) a decision was taken to clear all other student surveys during the administration of the UES, to conduct a range of internal marketing activities, and to offer a sizeable response incentive targeted at a relatively homogeneous student cohort. Conversely, at another institution (with return of 13% and yield of 51%, and also run in a devolved manner) it proved very difficult to clear through the cluttered survey landscape and in the timeframes available give the UES prominence among a diverse group of students.

As in Table 10, the level of response and number of completions differ greatly by subject area. Subject area is critical given the proposed use of this information for informing student choice. The highest levels of response were achieved by students studying in the humanities and sciences. On the other end of the response spectrum are students enrolled in business and building/construction fields. ACER's marketing department used this information to assist universities to promote the survey to students in these areas.

Table 9: Participation, population, sample and response by institution

HEI	Type	CATI	Total population	Excluded population	Target population	Sample	Expected	Online actual	CATI actual	Total actual	Return %	Yield %
ACU	INDEP	YES	17,266	4,303	12,963	11,362	2,853	1,350	480	1,830	16	64
ANU	DEV	YES	13,546	7,673	5,873	5,873	1,821	1,748	48	1,796	31	99
BOND	INDEP	NO	2,549	21	2,528	2,528	886	501	0	501	20	57
CDU	INDEP	YES	1,925	41	1,884	1,880	671	486	142	628	33	94
CSU	INDEP	YES	12,125	2,157	9,968	9,968	3,464	2,185	595	2,780	28	80
CQU	INDEP	YES	10,411	3,337	7,074	7,074	2,520	1,830	624	2,454	35	97
CURTIN	DEV	NO	25,118	5,656	19,462	17,297	5,044	4,121	0	4,121	24	82
DEAKIN	INDEP	YES	27,661	9,614	18,047	18,047	5,353	2,690	184	2,874	16	54
ECU	INDEP	YES	7,249	169	7,080	7,075	2,412	1,842	439	2,281	32	95
FLINDERS	DEV	NO	12,514	2,990	9,524	9,524	3,165	2,018	0	2,018	21	64
GRIFFITH	INDEP	YES	16,383	3,367	13,016	13,011	4,103	2,584	648	3,232	25	79
JCU	INDEP	YES	5,177	1,109	4,068	4,068	1,424	785	371	1,156	28	81
LTU	INDEP	YES	8,469	8	8,461	8,456	2,753	1,768	422	2,190	26	80
MQU	DEV	NO	23,627	6,729	16,898	16,786	4,445	3,209	0	3,209	19	72
MCD	INDEP	NO	396	77	319	319	112	144	0	144	45	129
MONASH	INDEP	YES	44,051	14,942	29,109	29,109	6,474	7,261	576	7,837	27	121
MURD	INDEP	YES	8,219	1,411	6,808	6,808	2,388	1,375	555	1,930	28	81
QUT	INDEP	YES	31,121	7,047	24,074	21,938	5,640	3,905	92	3,997	18	71
RMIT	INDEP	NO	18,066	9	18,057	18,057	6,041	3,025	0	3,025	17	50
SCU	INDEP	YES	6,688	14	6,674	6,674	2,295	1,036	363	1,399	21	61
SWIN	INDEP	YES	14,984	3,553	11,431	11,431	3,686	2,036	154	2,190	19	59
ADELAIDE	INDEP	YES	16,245	4,286	11,959	11,959	4,126	2,963	909	3,872	32	94
BALLARAT	INDEP	YES	4,807	1,425	3,382	3,382	1,201	734	347	1,081	32	90
CANBERRA	INDEP	YES	10,013	2,329	7,684	7,684	2,671	1,770	305	2,075	27	78
UNIMELB	INDEP	YES	23,696	5,624	18,072	14,122	3,157	3,161	212	3,373	24	107
UNE	INDEP	YES	11,368	2,956	8,412	8,412	2,632	1,391	570	1,961	23	75
UNSW	DEV	NO	30,407	7,929	22,478	20,950	5,714	3,670	0	3,670	18	64
NEWCASTLE	INDEP	NO	20,563	4,797	15,766	15,693	4,864	4,863	0	4,863	31	100
NDU	DEV	NO	7,656	2,126	5,530	5,525	1,848	1,029	0	1,029	19	56
UQ	INDEP	YES	31,610	6,340	25,270	25,270	5,812	6,301	530	6,831	27	118
UNISA	INDEP	YES	14,469	105	14,364	14,364	4,781	3,431	825	4,256	30	89
USQ	INDEP	YES	12,437	3,205	9,232	9,032	2,649	1,468	486	1,954	22	74
USYD	INDEP	YES	31,395	7,670	23,725	21,393	5,949	4,972	891	5,863	27	99

HEI	Type	CATI	Total population	Excluded population	Target population	Sample	Expected	Online actual	CATI actual	Total actual	Return %	Yield %
UTAS	INDEP	YES	7,999	360	7,639	7,639	2,481	1,766	446	2,212	29	89
UTS	DEV	NO	20,970	4,752	16,218	14,710	3,835	1,972	0	1,972	13	51
USC	INDEP	YES	6,506	1,658	4,848	4,848	1,698	1,146	528	1,674	35	99
UWA	DEV	NO	8,592	176	8,416	7,123	1,841	2,846	0	2,846	40	155
UWS	INDEP	YES	16,411	426	15,985	14,395	3,835	3,253	917	4,170	29	109
UOW	DEV	NO	14,052	3,393	10,659	10,659	3,734	2,209	0	2,209	21	59
VU	INDEP	YES	15,757	4,878	10,879	10,877	3,456	1,258	1,374	2,632	24	76
TOTAL			**612,498**	**138,662**	**473,836**	**455,322**	**133,834**	**96,102**	**14,033**	**110,135**	**24**	**82**

Table 10: Sample, expected yield and actual yield by subject area

Subject area	Sample	Expected	Online actual	Phone actual	Total actual	Return %	Yield %
Natural & Physical Sciences	25,483	6,332	6,727	491	7,218	28	114
Mathematics	1,130	396	247	42	289	26	73
Biological Sciences	6,792	2,366	1,617	322	1,939	29	82
Medical Sciences and Technology	8,988	3,151	2,347	453	2,800	31	89
Computing & Information Systems	15,101	5,160	2,964	486	3,450	23	67
Engineering - Other	21,023	5,057	4,137	413	4,550	22	90
Engineering - Process & Resources	3,278	1,153	695	157	852	26	74
Engineering - Mechanical	4,288	1,474	822	178	1,000	23	68
Engineering - Civil	6,160	2,138	1,123	272	1,395	23	65
Engineering - Electrical & Electronic	4,198	1,471	913	146	1,059	25	72
Engineering - Aerospace	2,047	719	439	115	554	27	77
Architecture & Urban Environments	10,018	3,312	1,828	228	2,056	21	62
Building & Construction	4,117	1,404	539	138	677	16	48
Agriculture & Forestry	2,616	930	683	163	846	32	91
Environmental Studies	5,207	1,628	1,298	254	1,552	30	95
Health Services & Support	20,922	6,821	4,545	644	5,189	25	76
Public Health	3,268	1,142	700	96	796	24	70
Medicine	11,433	3,354	2,917	325	3,242	28	97
Nursing	30,676	8,829	7,141	702	7,843	26	89
Pharmacy	4,474	1,570	1,082	147	1,229	27	78
Dentistry	1,708	600	396	173	569	33	95
Veterinary Science	2,295	818	595	141	736	32	90
Physiotherapy	3,224	1,129	800	185	985	31	87
Occupational Therapy	2,768	972	783	228	1,011	37	104
Teacher Education - Other	7,716	2,567	1,616	474	2,090	27	81
Teacher Education - Early Childhood	7,990	2,815	1,777	531	2,308	29	82
Teacher Education - Primary & Secondary	25,943	7,381	5,273	582	5,855	23	79
Accounting	10,337	3,160	1,759	445	2,204	21	70
Business Management	39,451	9,022	6,272	632	6,904	18	77
Sales & Marketing	5,135	1,800	801	174	975	19	54
Management & Commerce - Other	22,659	5,962	4,145	391	4,536	20	76
Banking & Finance	4,481	1,503	720	155	875	20	58
Political Science	2,321	813	548	65	613	26	75
Humanities (including History & Geography)	45,293	9,748	10,837	503	11,340	25	116
Language & Literature	2,792	978	765	116	881	32	90
Social Work	7,008	2,456	1,776	494	2,270	32	92
Psychology	15,005	5,059	3,788	728	4,516	30	89
Law	14,426	4,499	2,853	560	3,413	24	76
Justice Studies & Policing	2,628	920	494	189	683	26	74
Economics	5,062	1,441	811	140	951	19	66
Sport & Recreation	975	341	149	145	294	30	86
Art & Design	14,190	4,300	2,644	410	3,054	22	71
Music & Performing Arts	4,683	1,638	890	226	1,116	24	68
Communication, Media & Journalism	15,361	5,276	2,736	528	3,264	21	62
Tourism, Hospitality & Personal Services	652	229	110	46	156	24	68
TOTAL	**455,322**	**133,834**	**96,102**	**14,033**	**110,135**	**24**	**82**

Together, these figures provide insights into the level and hence quality of response. Overall, response and yield was very good particularly given several significant contextual and operational

constraints. Sufficient yield was achieved for 80 per cent of the planned strata. Response yield was below expectation in around a fifth of the strata, and in several instances overall rates of return were also low. Great caution should be exercised in any reporting results for such strata. Sampling and where necessary measurement error statistics should be reported with all point estimates. Additional commentary on data quality is provided in Appendix G of this 2012 UES National Report.

It is pertinent to foreshadow that suggested reporting criteria are discussed in section 5.4 of this UES 2012 National Report. As these criteria highlight, response rates alone are not a sufficient condition for establishing the quality of data or resulting statistical estimates. Under certain conditions increased rates of return may even lessen data and estimate quality. Internationally, response rates to student surveys have declined over recent years, reinforcing the need to use more sophisticated techniques for establishing the quality of data and estimates. Helpfully, more sophisticated data collection and statistical techniques have become standard over the last decade, and these must be deployed with the UES.

Recommendation 11: Given the scale of the UES and student participation characteristics a range of sophisticated monitoring procedures must be used to enhance the efficiency of fieldwork and to confirm the representativity of response yield.

It is important not to just focus on the overall response but also to ensure that the response is sustained across all items. The online survey instrument included five different versions to help mitigate order effects. Analysis showed that there was a slight downward trend in response by position of the questionnaire with some particular items having an obviously higher level of response given than others. This affirms the need to use rotated versions of the survey instrument.

4.8 Data management and products

All completed online and telephone responses were returned directly to ACER for logging and verification. Throughout the fieldwork period partial and full files were produced on a regular basis to assist with various reviews and reports. The final online data and telephone data files were extracted after fieldwork closed on Tuesday 9 October. Data file preparation included cleaning off responses that included no valid data, merging student demographics and contextual information provided in population frames into the data file, and removing the small number of duplicate responses given by students who had completed both the online and phone versions of the survey. ACER coded field of education to national classifications.

The main analysis files were prepared by two analysts independently, with cross-checks and audits conducted by several other research staff. Standard processes were used to ensure the quality and integrity of the file, including checking of random responses against completed online questionnaires. Various descriptive cross-checks were performed to check responses and data quality. The main raw data file was produced, annotated and archived. A working analysis file was produced, along with a series of derivative files for various aspects of psychometric and statistical analyses, such as item response modelling and covariance analyses.

Several verification analyses were conducted that compared the sample data against predetermined population marker variables, tested sampling assumptions such as clustering/homogeneity of response, analysed item-level non-response and missing data, and calculated response and non-response rates.

Comparisons of sample data against population marker variables were conducted for institutions, subject area, sex, citizenship status and attendance mode. Variations were observed by institution, subject area and sex. For both citizenship status and attendance mode, response distributions matched population distributions, hence no weighting adjustment was required. Given the variations for institution, subject area and sex, a decision was made to adjust design weights for non-response to take account of institution and subject area variations, and to apply post-stratification weights by sex. Combined, these weights ensured that reported results are representative of the overall population. Weights were not applied for count data, but were applied for all other reported statistics. While these analyses of representativity were conducted with operational intent in 2012, in future administrations of the UES a much larger suite of bias analyses must be conducted given the stakes of the collection.

Analysis of homogeneity confirmed, as is typically found in university student surveys, that institution and education field (subject area) account for most clustering of response, and hence this is already factored into the population structure and selection approach.

Much was achieved to mitigate item-level non-response in questionnaire design and operationalisation, and given relatively low incidence no further corrective action was taken.

A range of psychometric analyses were conducted to test the measurement and distributional properties of the data. These were essential to document precision, consistency and bias and provided a robust empirical basis for analysis, reporting and interpretation. Composite variables were produced using additive scaling algorithms, and produced item and focus area scores on a metric ranging from zero to 100. While simple this is not the most robust approach, particularly given aspirations of tracking performance over time.

The main work in the analysis phase involved statistical analysis of the variation in the data. The main statistical analyses was conducted using SPSS (IBM, 2012) and included univariate, bivariate and multivariate descriptive analyses, along with covariance analyses designed in response to reporting objectives.

A non-iterative procedure was used to calculate standard errors, with corrections made for population size. In future administrations of the UES consideration should be given towards a broader approach to variance estimation that better reflects the more complex aspects of student selection and response. While unlikely to lead to substantial differences in estimates of standard errors, applying methods such as Taylor series linearisation or replication would better take into account complexities such as post-stratification and the consequent adjustments to design weights. Finite population correction factors must be incorporated into variance estimation. Sampling errors should be calculated for all reported statistics, expressed either as standard errors or as 95 per cent confidence intervals.

> *Recommendation 12: The validation and weighting of UES data must be conducted and verified to international standards. Appropriate standard errors must be calculated and reported, along with detailed reports on sampling and response.*

Several reports and data products were developed. The three main project reports are summarised in chapter two. As well, data products were prepared for DIISRTE and for each university. All files and reports were delivered electronically.

4.9   A note on quality assurance

The UES 2012 was the largest student survey yet conducted in Australian higher education, and it was designed to exceed international technical standards and be efficient. Several forms of quality assurance were deployed during the 2012 UES, and it is instructive to overview the role that these played in order to confirm the properties of the data.

Appropriate governance arrangements play a fundamental role in assuring the integrity of collection. Such arrangements are not yet fully established, as the UES is a new collection that has yet to be fully institutionalised. As in 2011, oversight was provided by DIISRTE. Guidance was provided by the Project Advisory Group (PAG). The collaborative approach means that input was provided by personnel from all Australian universities. Oversight was provided by a suite of domestic and international advisors, and formative feedback was received from a wide-range of stakeholders at each step of the phased project. Appendix B provides an extended overview of consultation. In 2012 two formal independent technical reviews were conducted by eminent international statistical specialists. These are included in Appendix G.

Risk management was built into ACER's design and management of the UES, which took account of many potential threats to the successful conduct and outcomes of this work. Overall, ACER deployed well-tested and proven approaches to develop and implement the 2012 UES. The methodologies, expertise, sectoral awareness and infrastructure helped mitigate any project risk. ACER's design and approach took many contingencies into account and afforded ongoing opportunities to cross-validate approaches and outcomes. The work was conducted by highly experienced project staff, involved a multifaceted quality assurance strategy, included backups and redundancies, and encompassed sound operational and technical management.

5 Enhancing the student experience

5.1 Foundations for next steps

Substantial work has been done to develop the UES in 2012. The broad aim has been to produce a new national student experience survey architecture for Australian higher education. More concretely, the 2012 work has renovated and extended the questionnaire and national implementation infrastructure. To recap, the 2012 work has reviewed the conceptual background, added new questionnaire items and enhanced existing items, psychometrically validated the instrument, further validated online survey technology, and reviewed the future of the CEQ and its relationship to the new national architecture. From a survey administration perspective, the 2012 work has advanced techniques for identifying and selecting students, implemented a national marketing campaign to engage students, tested fieldwork operations involving all 40 universities and around 400,000 students, and explored metrics for qualifying the distribution and integrity of results. Overall, the 2012 work has delivered the largest and most robust survey of Australian university students yet conducted, a new national survey architecture, national data on the student experience, and several recommendations to guide ongoing practice.

Much has been achieved in 2012, and perhaps most importantly foundations have been laid for the medium-term implementation and growth of the UES. The UES, as with the student experience itself, is underpinned by an ethos of continuous improvement. Rather than a summative conclusion, therefore, this final chapter takes stock of the further work conducted in 2012 that was required to position and embed the UES as a major contributor to Australian higher education. The chapter presents a strategy for engaging students' response, examines opportunities for building international linkages, and discusses the reporting of results for monitoring and improvement. The closing section considers steps required to work through the UES to build quality enhancement capacity.

5.2 A strategy for engaging students' response

Making the UES a core facet of students' participation in higher education is central to the success of the initiative. Students are active producers as well as consumers of the university experience, and providing feedback is an integral part of this. Unless a large number of students engage with the UES and provide considered responses, the data will lack reliability, validity and relevance. When students receive an invitation to participate in the UES they should leap eagerly at the opportunity to participate in improving their educational experience, rather than feel burdened by 'another survey'.

An effective strategy for engaging students' response in the UES feedback process is an important part of the survey. To build engagement in the UES, the UES Consortium was asked to prepare a strategy to increase students' participation. An overview of the 2012 marketing work was provided earlier in this UES 2012 National Report. This promotional work was conducted to boost awareness and response, but was necessarily constrained by the very short lead times available for design, development and deployment. Taking account of this work, and related initiatives and research, this section advances the essential ingredients of a broader student response strategy.

An effective engagement strategy needs to address several challenges. University students in Australia are an over-surveyed population. Feedback from universities collected in 2012 indicated that in the June/September period, for instance, many institutions had administered up to nine separate student surveys. While these surveys varied in focus, coverage and approach, many

targeted the same population as the UES. Many of these cannot be discontinued, and others are unknown or unplanned. This presents a challenge of differentiating the new UES from other related and more established collections. Any survey engagement strategy also must confront the increasingly devolved way in which Australian students engage with their study and institutions. Even campus-based students spend very little time on campus, with much engagement mediated by mobile technologies. The UES also has several distinctive characteristics that need to be taken into account, such as government sponsorship, independent administration, and coverage of a very large and diverse population.

The strategy proposed for the UES is one that involves a cyclical conceptual design that underpins a marketing infrastructure. The strategy, as noted, is intended over the medium term to embed the UES as a core facet of students' co-production of their university experience. The strategy is intended to be more than a marketing campaign and help link broader work around design, implementation, reporting and enhancement. ACER research in recent years indicates that this can have a turnaround impact on patterns and levels of response.

The UES engagement strategy is founded on an adherence to deep engagement rather than reliance on extrinsic rewards, which have been shown to have limited and uncertain payoff. The ambivalence around extrinsic rewards (prizes, credit points, etc.) was reinforced by institutions during the 2012 UES, and by results from OECD AHELO (OECD, 2012). The design begins with the proposition that, as detailed by Coates (2005) and Coates & Radloff (2010), people are more likely to participate in a survey if they feel that:

- the outcomes are of personal (particularly) or societal (less so) benefit;
- their voice matters and will be heard;
- the survey and questionnaire look appealing and interesting; and
- the process appears to be conducted in a consistent, valid and transparent way.

These broad ideas could be expressed in a variety of approaches. A 'survey engagement model' (Coates, 2005) provides a means of summarising the specific factors that appear to be the most important determinants of securing a high quality response. An effective survey engagement model has been developed over seven years by ACER and has been shown to work when deployed well. This phased model summarised in Table 11 is backed by a considerable amount of recent methodological and applied research. This model, in summary, positions the survey as part of an ongoing conversation between students and universities about the nature and quality of education.

Table 11: Survey engagement cycle and sample practices

Phase	Key practices
Pre-survey planning (November to February)	- Clear space in the survey landscape - Identify a 'UES Champion' within the institution who has the authority (formal or informal) and enthusiasm to take the project forward - Invest time, energy and enthusiasm into the process - Hold a planning meeting which brings together and engages representatives of all key stakeholders in the feedback process, including 'end-users' who will make most use of data - Make resources and processes simple and inviting - Ensure appropriate resources have been allocated to manage the process - Develop an approach to monitoring, reviewing and improving survey processes
Pre-survey promotion (March to June)	- Initiate awareness promotional campaign - Senior executives should alert students that the survey is coming up to capture their interest in the process and endorse it as a significant opportunity to provide feedback 'Close the loop'—provide summary reports of related survey results to all students to demonstrate that their voice has been heard - Provide stakeholders with basic information about the survey - Report specific ways in which the university has and is responding to student feedback
Capturing Attention (July to October)	- Activate prime promotional campaign - Communicate with students using approaches that are most likely to be effective, which will likely involve a multifaceted approach (including mobile technologies, paper, telephone, etc.) - If at all possible, individually address emails to students—the personal touch matters - Carefully sequence survey distributions in ways most likely to capture attention and response - Have academic, administrative and senior executive staff endorse the process by drafting letters and emails to students - Develop a FAQ sheet so that queries from students can be assessed, managed and responded to in timely and appropriate ways - Advise students that 'every response counts'—that their input can make a difference
Stimulating completion and return (July to October)	- Maintain momentum with a promotional campaign - Identify and resolve any fieldwork problems quickly (e.g. keep an eye out for emails which bounce back and let administrators know so they can advise a possible replacement) - Send follow-up emails out promptly to maintain the momentum of the survey process - Implement real-time monitoring of response - Provide reports and resources to responding students immediately on completion, and link to advisory resources that students can use to enhance their experience - E-mail 'thank you' response on completion of questionnaire

Table 11 includes an indicative schedule based on the timing of the UES. As this shows, planning takes place many months before survey administration. This may seem onerous, but it is more

intended as a means of weaving the UES into broader institutional work already underway such as orientation and induction activities. An overview compressed approach, such as was necessary in 2012, is unlikely to yield the same quality improvement dividends as a broader approach. As in much quality work, the process is likely to yield as much as the outcomes. What this timeline affirms is that to maximise student participation and value to institutions, planning for the 2013 UES should begin as soon as possible.

Developing a national suite of themed materials that could be customised by institutions received broad support from institutions. This helped sustain a consistent message, exploit economies of scale, and assist with broader forms of deployment such as via regional media. It also builds a clearinghouse that weaves survey engagement into broader forms of national survey management, placing student participation in frame alongside implementation and enhancement work.

> *Recommendation 13: A UES engagement strategy should be implemented nationally as part of ongoing activities to enhance the quality and level of students' participation.*

5.3   Building international linkages

International linkages are enormously important for Australian institutions, governments and sector/industry stakeholders. This drives a growing interest in benchmarking UES performance against institutions and systems in other countries. The 2011 and 2012 development work sought to lay foundations to maximise and grow comparative opportunities.

Obviously, importing survey processes and materials used internationally or in other systems is the easiest step forward. This needs to be balanced against the desire to innovate and customise within Australia, and the Australian Government's desire to own survey infrastructure. National contexts constrain incorporation of international materials that are outdated, less relevant to Australia or owned by third parties. Intellectual ownership is particularly relevant as materials that have achieved buy-in internationally tend to be fiercely protected. A strategy for building international links is proposed with these constraints in mind.

The UES contents could be benchmarked at varying levels of specificity. Very specific comparisons might be made at the item level where UES items have a reasonable link with international material. Table 27 in Appendix H lists selected potential comparisons of this nature. A range of additional links might be identified, including to data collections produced in languages other than English. At a broader conceptual level comparisons could be made between the UES focus areas, which tap into basic concepts of relevance around the world, regardless of specific item content. The opportunities here are far more numerous, limited only by strategic or policy aspirations. Many institutions and systems, for instance, have stable cross-institutional or national collections that measure facets of the student experience such as skills development, learner engagement, quality teaching, student support and learning resources. At an even broader level, comparisons could simply be made in terms of tracking patterns and trends across education systems, or even in terms of student survey infrastructure and implementation.

As a variant to these approaches which involve 'importing' information from abroad, the international prospects of the UES could well be exploited. The UES has a lot to offer as a data collection developed by one of the most internationalised tertiary systems in the world. This expansion could be conducted through bilateral arrangements with other ministries, through direct provision to other institutions, or through international agencies or peak bodies with an interest in quality monitoring or improvement. These opportunities could be explored by Australian

institutions and/or governments. Deploying the UES at offshore campuses of Australian institutions (as did one university as an optional addition to the 2012 collection) is a first step in this direction. Running a small-scale pilot calibration in benchmark systems is also possible, and mirrors work that ACER has conducted over several years in systems in Asia, Europe, North America and the Middle East.

Regardless of the ultimate level of analysis and approach, to avoid error and confusion it is essential to keep in mind basic technical and operational matters in pursuing comparative work. Survey instruments must conceptualise and measure the same phenomena, ideally using materials which have been translated, adapted and validated across contexts. These instruments must be applied to similar or analogous student populations, using comparable sampling and implementation procedures. Data must be verified and treated in comparable ways. It must be possible to equate the approaches used for scaling and reporting. Obviously, these conditions are easier to achieve when a collection is run by a single agency or by a group of collaborating agencies. OECD AHELO (OECD, 2012) provides an example of this approach. With sufficient cooperation and transparency it is possible to achieve alignment with cross-national data collections that rely on a collaborative model (such as the United States NSSE (NSSE, 2012) and Australasian AUSSE (AUSSE, 2012)), or between collection that share sufficient characteristics (such as the Australian CEQ (GCA, 2012) and United Kingdom NSS (NSS, 2012)).

Opportunities for international comparison are built into the UES. The nature and extent to which these are exploited hinges on the interests of the Australian system and institutions. Clarifying these interests is a precondition for defining specific options, which can then be resourced and progressed. Reaching out to international networks and agencies is a precondition for much work in this area, though such liaison might vary from meta-analysis of public reports to planning and implementing joint data collections. Various international vehicles might exist to facilitate such exchange—perhaps sponsored by agencies such as the European Commission, OECD or UNESCO—though risks flow from synching national with international schedules.

> *Recommendation 14: Strategies should be explored for international benchmarking, including the cross-national comparison of items, marketing the UES for use by other systems, or broader comparisons of concepts and trends.*

5.4   *Reporting for monitoring and improvement*

Productive reporting for monitoring and improvement is the main objective of any collection such as the UES. The importance of reporting has been affirmed in the structure of this 2012 UES National Report, which began with a chapter on reporting. This chapter builds on the discussion in chapters three and four to advance a national reporting architecture for the UES.

This 2012 UES National Report began with a discussion of reporting contexts. Data collections such as the UES tend to be used for a range of specific purposes that can change over time. In 2012 three main reports were planned. A brief overview was provided of institution-specific reporting designed for continuous improvement of potential public reporting including via MyUniversity. National results were analysed.

The UES is a large-scale data collection and there are numerous prospects and opportunities for reporting. To extract full value from the collection it is important that results are analysed and reported as much as possible. All analyses and reports should conform to UES reporting protocols and guidelines. These guidelines should guard against misuse of data and reports, while at the same

time encouraging innovative and informed research and dissemination. Developing such guidelines is an involved process and involves consultation and approval processes. While most of this lies in work beyond the scope of the 2012 project, a series of technical guidelines was offered to guide reporting deliberations, a process for validating reports was developed and tested, and national consultation was conducted around the infrastructure for and governance of reporting. Consideration is given to each of these matters in turn.

The UES is underpinned by a series of assumptions about who students are, how they are selected, psychometric and statistical analyses, and how results are reported and likely to be interpreted. These assumptions can be converted fairly readily into a series of technical guidelines for public reporting. Given population specification, student selection and fieldwork properties, a number of criteria were developed to decide on whether and how it is appropriate to report UES results. These include that:

1. an institution-level sampling frame is provided by the institution that is validated independently against internal (e.g. requested elements supplied with valid values) and external (e.g. frame maps against prior year frame) points of reference;
2. student exclusions are noted, justified, and verified;
3. students are selected, and the selection is validated according to design specifications;
4. data collection has followed prescribed processes, including as required with institutional involvement, with nature and impact of any variations noted;
5. the effective sample size (response yield) is sufficient for reporting nominated scales at 95% level of confidence with ±5 per cent error band width (i.e. response for each stratum or combination of strata meet or exceed sample designs); and
6. response for each stratum or combination of strata does not show significant bias against key marker variables (with marker variables including but not limited to gender, international student status, campus and mode of study).

These technical guidelines go towards ensuring that reported UES results are statistically unbiased and consistent. The above guidelines are declarative in nature. In 2012 a procedure was initiated to support the application of these guidelines. This multifaceted verification procedure involved sequential and iterative review by UES:

1. analysts and managers;
2. directors;
3. independent reviewers;
4. PAG;
5. Participating institutions;
6. DIISRTE; and
7. AQHE Reference Group.

While these technical review processes were formed and tested in 2012, further work would be required to establish infrastructure and governance arrangements for UES reporting. The 30 August 2012 meeting with institutional representatives affirmed the value of building agreed-upon terms of use and reporting of the data generated from the UES for universities, government and third parties. In summary, this national work would involve (at least):

- identifying the national committee responsible for governing UES reporting (potentially, the AQHE Reference Group);
- developing management processes and arrangements;
- reviewing, revising and ratifying the above technical reporting guidelines;
- producing codes of conduct for reporting and dissemination; and

- developing a series of data access, release and analysis protocols.

It is important to note that this work around governance and reporting would need to be reflected within institutions. In most instances this could be achieved through the modification and where necessary expansion of existing mechanisms.

Recommendation 15: To maximise the potential and integrity of the UES governance and reporting processes and resources must be developed.

5.5   Building quality enhancement capacity

It takes around three to five years of ongoing design, formative review and development to establish a new national data collection given the stakeholders, change and consolidation required. The 2012 collection was the second implementation of the UES, and the first with expanded instrumentation and participation. It will take a few years and much input to really situate and tune the UES to ensure it is delivering maximum value for Australian higher education. Substantial work is required to convert this fledgling survey into a truly national vehicle for improving and monitoring the student experience. An initiative of this scale seeds numerous development opportunities.

Survey instruments evolve with the contexts and practices that they measure. This requires ongoing analysis of the student experience and review of the UES instrument. For the UES to remain relevant and play an effective role in recording and also enhancing the student experience, it is necessary to conduct regular institutional and policy research on the focus and composition of the UES questionnaire.

A new national survey architecture has been advanced with the UES in addition to new instrumentation and implementation mechanisms. Key features include population specifications, student selection regimes, data collection technologies and approaches, and analysis and reporting methods. Alignments have been made with broader policies on the student lifecycle and with existing survey materials, and new governance arrangements are being established. This new national survey architecture is in its infancy and to get established and yield maximum returns requires attention and development.

Further development of national survey infrastructure hinges on the UES being implemented over the medium term. This requires implementation and consolidation for at least the next three years, taking into account the recommendations advanced in this report. Additional opportunities and clarifications will shape up as development work proceeds.

The UES is based on an ethos of continuous improvement, and it is imperative that quality enhancement work be positioned at the front-end rather than lagging tail of data collection and reporting activity. Using survey data for improvement is the most important and perpetually most neglected aspect of initiatives such as the UES, yet without improvement the value of the work is questionable. To ensure returns in this area, it is imperative that end-users such as teachers and support personnel be directly involved in survey development and reporting, that strategies are refined for making the UES real for students, that the collection is positioned within appropriate national, institutional and international points of reference, that reporting arrangements are diverse and maximally informative, and that ongoing energy is invested in building capacity across Australia in understanding, managing and creating a positive student experience.

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Attachments

I   *Strata response report*

Attachment I provides population numbers, expected numbers and response numbers for different partitionings of the national UES population. Please see attached file 'UES 2012 National Report Attachment I – Strata response report.xls'.

II   *Australia University UES Institution Report*

Attachment II provides a sample UES Institution Report for 'Australia University'. The report draws from a random sample of data from the 2012 UES national file. Please see attached file 'UES 2012 National Report Attachment II – Australia University UES Institution Report.doc'.

III   *Focus area average scores by university and subject area*

Attachment III lists mean and standard error statistics of each of the five UES focus areas by institution for the largest ten national subject areas. Please see attached file 'UES 2012 National Report Attachment III – Focus area average scores by university and subject area.xls'.

Appendices

A   *Project Advisory Group Terms of Reference*

1. This document sets out composition and Terms of Reference for the University Experience Survey (UES) Project Advisory Group (PAG).

2. A PAG has been formed to provide advice and input into the development of the UES. The PAG will oversee the design and assure the quality of the development and deployment of the UES.

3. The PAG will include representatives from peak bodies including Universities Australia, the Australian Technology Network of Universities (ATN), Group of Eight (Go8), Innovative Research Universities (IRU) and the National Union of Students, among others.

4. The UES PAG will form a working group to advise on more technical matters pertaining to the development and deployment of the UES.

5. The PAG is a consultative group that provides guidance of a technical, scholarly or practical nature.

6. The Project Advisory Group is managed by the UES Consortium, consisting of the Australian Council for Educational Research (ACER), the Centre for the Study of Higher Education (CSHE) and the University of Western Sydney (UWS).

7. The UES Consortium and Department of Education, Employment and Workplace Relations (DEEWR) are responsible for suggesting membership to the PAG. The overriding principle guiding the selection of members for the PAG is relevant expertise and representation of key stakeholders and interest groups.

8. The Project Advisory Group will be chaired by an attending member of the UES Consortium.

9. Project Advisory Group composition will be approved by the UES Consortium in consultation with the DEEWR. PAG members will be asked to sign a confidentiality agreement.

10. The PAG could be consulted on matters such as instrument and dimension development, validation activities, administrative and methodological matters, consultation matters, deployment of the UES and reporting for the UES.

11. The PAG will meet at key stages of the UES development and deployment. Around four teleconference meetings will be scheduled throughout 2012 along with a possible face-to-face meeting. Other informal input from the PAG may be requested throughout the UES development and deployment.

12. In addition to the scheduled teleconference meetings the PAG will review and provide informal feedback on documents when requested and its members may participate in other meetings organised as part of the consultation process for the UES development.

13. The UES Consortium is responsible for organising and supporting meetings of the PAG and responsible for managing the logistics of the teleconferences and face-to-face meetings.

B   Consultation report

Consultation focus, scope and approach

This report provides an overview of consultation conducted as part of the 2012 UES development project. The consultation can be divided broadly into three phases—before, during and after fieldwork. The first phase was highly targeted and deliberately brief given that work on the 2012 UES administration and development commenced only shortly before fieldwork. Consultation during fieldwork tended to be focused on administration and associated technical matters. More substantive consultation on broader conceptual and contextual matters was deferred until after fieldwork.

Along with more general considerations, a number of specific matters were initially slated for consultation. Based on initial feedback a number of further topics were added. Overall, the main matters about which the UES Consortium has sought feedback from the sector includes:

- population definitions, covering first-/later-year students, extension to non-university providers, extension to postgraduate coursework students;
- the UES instrument, specifically the core instrument and additional/optional institution- or group-specific items;
- incorporation of the CEQ and UES;
- developing effective response rate strategies and promotional tools;
- fieldwork options and processes;
- development of textual analysis software;
- content in institution reports and data files; and
- creating agreed data use and reporting protocols.

The Consortium has consulted with a broad group of stakeholders. This includes university operational personnel and senior executives, along with representatives from stakeholder groups such as Universities Australia, Go8, IRU, ATN, Regional Universities Network, and the National Student Union. University students have been consulted, both through the survey process and follow-up communication. The Consortium has also sought feedback from DIISRTE, TEQSA, and international experts.

The Project Advisory Group has been consulted throughout the project. The PAG includes representatives from the UES Consortium, DIISRTE, Tertiary Education Quality and Standards Agency (TEQSA), Universities Australia, Group of Eight (Go8), Australian Technology Network of Universities (ATN), Innovative Research Universities (IRU) and the Regional Universities Network (RUN), the National Union of Students (NUS), the National Tertiary Education Union (NTEU), and two Directors of policy and planning.

Consultation has included ongoing day-to-day contact with universities via email and telephone calls. More formal consultation has been conducted through a face-to-face meeting held on Thursday 30 August in Melbourne with representatives from all universities. In the third phase of consultation feedback was sought from universities and other stakeholders by running short surveys, exchanging documents for review, teleconferences, and further face-to-face meetings and workshops.

Phase 1: Pre-fieldwork consultations

During this phase ACER had discussions with the following individuals regarding planning for UES 2012: Professor Denise Kirkpatrick from The University of Adelaide, Caroline Perkins from

Regional Universities Network, Dr Ly Tran from RMIT University, Simon Marginson from Centre for Study of Higher Education at the University of Melbourne, Sue Nankervis from ACER, Professor Bill MacGillivray from Southern Cross University, Susan Page from Macquarie University, Christine Asmar from the University of Melbourne, Gina Milgate from ACER, Nadine Zacharias from Deakin University, and Professor Sally Kift from James Cook University.

These matters were discussed, among others:

- contextual items for students from distance education, regional, international, mature age, Indigenous, disability;
- comparative performance of UES to CEQ and the relationship of UES with other existing surveys;
- clarification of wording and feedback on items that may cause confusion in the 2011 UES pilot;
- items to be added; and
- items to be removed.

The following actions were taken:

- a review of language and wording of items led to small changes being made to the instrument piloted in 2011 for use in the 2012 UES;
- new items were drafted to be added to UES 2012 including common core, contextual and demographic items;
- it was decided to provide all items to all respondents rather than providing only common core items to all respondents and contextual core items to selected respondents of a particular group, though several 'not applicable' response categories were introduced; and
- further feedback was sought by ACER's Advisory Committee on Indigenous Education (ACIE).

A teleconference was held to disseminate information regarding the administration of the UES 2012 on 27 June, 2012. Universities were asked to nominate representatives. Although no questions were able to be raised in this hour teleconference with 40 participants, delegates were asked to mail in their questions. As a result, a FAQ was uploaded to the UES Exchange.

The Project Advisory Group met two times at this stage of the work—via teleconference on 21 June and again on 18 July. During these meetings the following matters were discussed:

- Project Advisory Group Terms of Reference (Appendix A);
- overview of 2012 UES development including the Development Brief, Project Plan and 2012 schedule;
- instrument development including the UES Concept Design and details on consultation;
- national administration including the Administration Manual, details of Privacy including centralised administration and External Auditing;
- promotion activities;
- research activities including background scoping;
- strategic, conceptual, empirical and practical facets of the CEQ/UES review;
- qualitative analysis software development; and
- response rate strategy and marketing.

Phase 2: Consultation during fieldwork

Before and during fieldwork as series of weekly emails were sent to senior and operational contacts at participating institutions. These updates provided information and materials, addressed queries raised by stakeholders, and invited institutions to take part in a range of consultation opportunities.

During this phase ACER spoke with: Dan McHolm from the University of Adelaide, Sara Rowley from Australian National University, Ruth Bartlett from University of Ballarat, Sally Nimon and Meng Yeong from University of Canberra, Jo Miller from Central Queensland University, Nancy O'Donnell from Charles Stuart University, Helen Jakob from Deakin University, Stuart Jones from Griffith University, Jit Li from Melbourne College of Divinity, Kristina Kaulenas from Monash University, Chandrama Acharya from Macquarie University, Christina Ballantyne from Murdoch University, Margaret from University of Newcastle, John Morris from Queensland University of Technology, Naomi Doncaster from Southern Cross University, Lisa Bolton from Swinburne University, Bill Jones from the University of Melbourne, Sandra Harrison from University of Sydney, Toni Dobbs from University of Wollongong, Ken Richardson from the University of Queensland, Tanya Tietze from the University of Sunshine Coast, Gheeta Krishnan from the University of Tasmania, Kerry Clohessy from the University of Western Australia, Stephen Butcher from the University of Western Sydney, and Laurie Armstrong from Victoria University. ACER fielded hundreds of telephone calls from these and other staff at universities regarding UES 2012.

These discussions were detailed and contextualised in nature. In broad terms, these matters were discussed:

- incentives;
- progress of UES at the particular university;
- response rates;
- promotion and marketing of UES 2012;
- delays in receiving information;
- UES Exchange;
- dates emails were sent;
- other surveys being run either concurrently or in future;
- communication strategies; and
- opinion and concerns.

The following general actions were taken:

- sending out more personalised emails;
- continuing the weekly 'UES Update' emails, including more personalised and specific information;
- decreasing time of response to email correspondence to 24 hours maximum;
- answering personalised queries; and
- directing people to the right documents/people for further information.

The second national teleconference was held on 25 July 2012. The following matters were discussed: an overview of the project, instrument development, survey administration, and research activities (CEQ/UES review, qualitative analysis software and response rate strategy). Attendees were invited to ask questions, and these included queries on email templates, consistency of incentives, marketing, return of sample file, media coverage, prizes, and the face-to-face meeting on 30 August 2012.

A National meeting was held on August 30 in Melbourne to discuss the UES instrument (online and CATI, as well as common core items and the potential for non-core items), student population and selection, response rate strategy, development of textual analysis software, administration of the UES, and the continuing research activities. A representative from each university was invited to attend along with representatives from the DIISIRTE, the PAG and the UES Consortium. Attendees ranged from survey administrators to DVCs. The meeting was chaired by Peter Noonan from Allen Consulting.

The main points raised throughout the day were:

- that there is a need for a clear understanding of the next steps involved in the consultation and project and the timing for these;
- a need for agreed-upon terms of use and reporting of the data generated from the UES for universities, government and third parties; and
- that including non-core, institution- or group-specific items in the UES is critical to the sector.

After being reviewed by the PAG the notes and action plan from the meeting were distributed to all attendees using the UES Exchange.

Towards the end of fieldwork, universities were invited to submit feedback by responding to the 'University Student Survey Feedback'—an online survey instrument. A word document with the survey items was also distributed so multiple individuals from the same university could also have input. Feedback was received from individuals or groups at the following universities: Bond University, Charles Darwin University, Charles Sturt University, Deakin University, Edith Cowan University, Flinders University, Griffith University, James Cook University, Murdoch University, RMIT University, Swinburne University of Technology, The University of Adelaide, The University of Western Australia, University of Canberra, University of South Australia, University of Tasmania, University of Technology Sydney, University of the Sunshine Coast, University of Western Sydney, and Victoria University. Feedback from the University Student Survey Feedback has been incorporated into this report.

The Project Advisory Group met two times at this stage of the work via teleconference on 22 August and 24 September 2012. During these meetings the following were discussed: fieldwork including online and CATI, response rates, national administration, population definitions, sampling frame; textual analysis software, the addition of non-core items to the UES instrument (including AUSSE); privacy; national meeting on 30 August 30; reporting protocols; incorporating CEQ scales; and international benchmarks.

Phase 3: Consultation during analysis and reporting

In many respects this last phase of consultation was the most extensive, which gave considerable opportunity for capturing views and ideas from across the sector and key agencies. During this phase ACER spoke with: Caroline Perkins from Regional Universities Network, Sara Rowley from Australian National University, David de Bellis and Julie Herriman from Flinders University, Pamela Kinnear from Universities Australia, Donherra Walmsley from National Union of Student, Alan Mackay from Group of Eight, Phillipa Pattison from The University of Melbourne, Sue Mikilewicz from University of Southern Australia, Bill MacGillvray from Southern Cross University, Vicki Thomson from Australian Technology Network of Universities, Greg Jakob from University of Ballarat, Anne Young from University of Newcastle, David Collings from Edith Cowan University, Robert Webster and Tim Brennan from the Royal Melbourne Institute of Technology, Marco Schultheis from Curtin University, Denise Kirkpatrick from the University of

Adelaide, Sarah Griggs from the University of Melbourne, Ian Hawke from the Tertiary Education Quality and Standards Agency, Christina Ballantyne from Murdoch University, Sam Neilson and Carole Dickenson from the Queensland University of Technology, Stephen Butcher and Paul Rowland from the University of Western Sydney, Sue Spence from Griffith University, and Ken Richardson and Claire Hourigan from the University of Queensland. Hamish Coates attended and gave a presentation on the 2012 UES at the Universities Australia DVC (Academic) forum in Canberra on Thursday 25 October 2012.

These conversations were wide ranging, and touched on the following matters such as:

- the need for more notice required for major collections;
- the need for the questionnaire to settle so that institutions could plan and embed into management structures;
- relationships with existing surveys, including: difficulties students have differentiating between multiple surveys being delivered from different sources; consolidating surveys to enable greater response; greater marginal costs for small teams in managing additional surveys; elevating the status of UES while accommodating other collections; comparing performance of UES to CEQ; need to touch on community engagement and work-integrated learning; and positioning the future of the CEQ, AUSSE, UES and other surveys;
- survey administration, including: risk management and transparency; responsiveness around emails—need prompt feedback in 48 hours; need to resolve privacy issues; deployment with coursework postgraduate students; containing the number of email contacts; focusing on a small number of indicators and rotate over years; having a disability compliant approach (please contact if you have disability and we'll find an alternative means); satisfaction with the 2012 process; and governance arrangements;
- data considerations, including: need for the survey to be robust; longitudinal possibilities to retain time series data; timely provision of data for MyUniversity; producing subsector (e.g. Go8 benchmarks); running with a census to give more useful data; collapsing fields of education into larger groups to reduce burden; access to the full dataset; accessing to institution-specific data; calculation of later-year identifiers; and the need to review data release and reporting requirements;
- marketing issues, including: need for a communication protocol; controls on Facebook page; more assistance with publicity and media offices; advertising; concern about specific messages in marketing materials; lack of time to prepare and market 2012 UES; needing time to brand the collection with students and incorporate into IT/LMS systems; and the efficiency of text messages;
- response rates—notably problems with business, engineering, international and male students, and feedback on why students do not respond; and
- reporting matters such as: what is learned from all of this effort; who has to do what to make it better; specific reporting arrangements; need for review of what the UES really measures; need to clarify direct and indirect purposes; reliability around data potential issue in terms of reporting; purpose of providing baseline data; mapping onto course structures to inform student choice; engaging with AQHE regarding reporting and rendering of data, and how data to be reported; changes in student mixes; and the need to run tracer studies with different student cohorts.

ACER, in collaboration with the LH Martin Institute, led a major series of consultations between 29 and 31 October 2012 via the 4th National Student Engagement Conference, held at the Sebel Hotel in Melbourne. Around 100 delegates registered from this meeting, with contributions from Alan Robson (University of Western Australia), Andrew Smith (Swinburne College), Anne Jones (Victoria University), Birgit Lohmann (University of the Sunshine Coast), Caroline Perkins

(Regional Universities Network), Christine Asmar (University of Melbourne), Conor King (Innovative Research Universities), David de Carvalho (DIISRTE), Denise Kirkpatrick (University of Adelaide), Donherra Walmsley (National Union of Students), George Brown (Think Group), Gregor Kennedy (University of Melbourne), Hamish Coates (ACER, LH Martin Institute), Ian Hawke (Tertiary Education Quality and Standards Agency), Jeannie Rea (National Tertiary Education Union), Kerri-Lee Krause (University of Western Sydney), Leo Goedegebuure (LH Martin Institute), Ly Tran (RMIT University), Martin Hanlon (University of Technology, Sydney), Nadine Zacharias (Deakin University), Richard James (University of Melbourne), Sally Kift (James Cook University) and Susan Page (Macquarie University).

The Project Advisory Group met seven times over the course of the year and met twice during this stage of the work.

In November, ACER supplied all 40 institutions with draft 2012 UES Institution Reports. Institutions were given a week to review and provide feedback on the draft documents. A range of telephone and email consultations were held during this period, along with meetings.

Summary of UES 2012 consultation

Considerable opportunities were provided to both individuals and groups to provide feedback on UES 2012 during numerous phases of the project. Consultation was hindered early in the project due to the short time line between the announcement of the project and the need to go into fieldwork. For this reason, consultation on UES project was taken all the way through to November 2012.

Consultation was made with individuals at all levels of the sector—from students to Vice Chancellors. Academic staff (as a distinct group) were consulted only by proxy, and there is value in further consultation with this large and diverse group of people in future work.

The main issue that was raised centred on the lack of lead time universities were given to prepare for UES 2012. The lack of lead time meant provision of the initial UES population data was difficult, little promotion, if any, was given to UES 2012 before the survey went into field and information regarding administration was hard to come by.

Pre-field consultation mainly concentrated on the instrument and deployment. Suggestions and actions taken were clarification of wording and the addition of new items. Due to the short lead time, optional items, although suggested, were not able to be added to the UES in 2012. Definition of fields such as first and final-year students was also raised at this time.

Phase two consultation occurred during fieldwork. Concerns regarding communication by the administrators of UES 2012 and their dissemination of timely information were taken on board throughout the process. Queries on incentives, promotion, progress, response rates were all raised during this time. In response, during this period, ACER reduced time to respond to emails, personalised their communication and organised a national meeting held in Melbourne to discuss the progress and use of information collected through UES 2012. All universities were invited to send along a representative to this meeting and attendees ranged from survey administrators to DVC. Further, a survey was created for all universities to provide feedback and input into the UES.

Consultation continued after the instrument was closed in October and through to November. During this time input was sought from individuals at all levels of the sector into the administration, data, marketing, reporting, and relationship with other existing surveys. These conversations helped to mould the 2012 UES National Report.

C   Institution, subject area and field of education lists

Table 12: UES 2012 participating institutions

Australian Catholic University	Swinburne University of Technology
Australian National University	University of Adelaide
Bond University	University of Ballarat
Charles Darwin University	University of Canberra
Charles Sturt University	University of Melbourne
CQ University	University of New England
Curtin University	University of New South Wales
Deakin University	University of Newcastle
Edith Cowan University	University of Notre Dame
Flinders University	University of Queensland
Griffith University	University of South Australia
James Cook University	University of Southern Queensland
La Trobe University	University of Sydney
Macquarie University	University of Tasmania
MCD University of Divinity	University of Technology Sydney
Monash University	University of the Sunshine Coast
Murdoch University	University of Western Australia
Queensland University of Technology	University of Western Sydney
RMIT University	University of Wollongong
Southern Cross University	Victoria University

Table 13: Fields of education and subject areas

ASCED Broad field of education	DIISRTE subject area
Natural and physical sciences	Natural & Physical Sciences
	Mathematics
	Biological Sciences
	Medical Sciences and Technology
Information technology	Computing & Information Systems
Engineering and related technologies	Engineering - Other
	Engineering - Process & Resources
	Engineering - Mechanical
	Engineering - Civil
	Engineering - Electrical & Electronic
	Engineering - Aerospace
Architecture and building	Architecture & Urban Environments
	Building & Construction
Agriculture, environmental and related studies	Agriculture & Forestry
	Environmental Studies
Health	Health Services & Support
	Public Health
	Medicine
	Nursing
	Pharmacy
	Dentistry
	Veterinary Science
	Physiotherapy
	Occupational Therapy
Education	Teacher Education - Other

ASCED Broad field of education	DIISRTE subject area
	Teacher Education - Early Childhood
	Teacher Education - Primary & Secondary
Management and commerce	Accounting
	Business Management
	Sales & Marketing
	Management & Commerce - Other
	Banking & Finance
Society and culture	Political Science
	Humanities (including History & Geography)
	Language & Literature
	Social Work
	Psychology
	Law
	Justice Studies & Policing
	Economics
	Sport & Recreation
Creative arts	Art & Design
	Music & Performing Arts
	Communication, Media & Journalism
Food, hospitality and personal services	Tourism, Hospitality & Personal Services

Table 14: DIISRTE subject areas and ASCED Detailed, Narrow or Broad Field of Education

DIISRTE subject area	ASCED Detailed Field Of Education
Natural & Physical Sciences	010301, 010303, 010501, 010503, 010599, 010701, 010703, 010705, 010707, 010709, 010711, 010713, 010799, 010000, 019900, 019999
Mathematics	010101, 010103, 010199
Biological Sciences	010901, 010903, 010905, 010907, 010909, 010911, 010913, 010915, 010999
Medical Sciences & Technology	019901, 019903, 019905, 019907, 019909
Computing & Information Systems	020000, 020101, 020103, 020105, 020107, 020109, 020111, 020113, 020115, 020117, 020119, 020199, 020301, 020303, 020305, 020307, 020399, 029901, 029999
Engineering – Other	030000, 030101, 030103, 030105, 030107, 030109, 030111, 030113, 030115, 030117, 030199, 030501, 030503, 030505, 030507, 030509, 030511, 030513, 030515, 030599, 031101, 031103, 031199, 031701, 031703, 031705, 031799, 039901, 039903, 039905, 039907, 039909, 039999
Engineering – Process & Resources	030301, 030303, 030305, 030307, 030399
Engineering - Mechanical	030701, 030703, 030705, 030707, 030709, 030711, 030713, 030715, 030717, 030799
Engineering – Civil	030901, 030903, 030905, 030907, 030909, 030911, 030913, 030999
Engineering - Electrical & Electronic	031301, 031303, 031305, 031307, 031309, 031311, 031313, 031315, 031317, 031399
Engineering – Aerospace	031501, 031503, 031505, 031507, 031599
Architecture & Urban Environments	040000, 040101, 040103, 040105, 040107, 040199

DIISRTE subject area	ASCED Detailed Field Of Education
Building & Construction	040301, 040303, 040305, 040307, 040309, 040311, 040313, 040315, 040317, 040319, 040321, 040323, 040325, 040327, 040329, 040399
Agriculture & Forestry	050000, 050101, 050103, 050105, 050199, 050301, 050303, 050501, 050701, 050799, 059901, 059999
Environmental Studies	050901, 050999
Health Services & Support	060000, 060901, 060903, 060999, 061501, 061700, 061705, 061707, 061709, 061711, 061713, 061799, 061901, 061903, 061905, 061999, 069901, 069903, 069905, 069907, 069999
Public Health	061301, 061303, 061305, 061307, 061309, 061311, 061399
Medicine	060101, 060103, 060105, 060107, 060109, 060111, 060113, 060115, 060117, 060119, 060199
Nursing	060301, 060303, 060305, 060307, 060309, 060311, 060313, 060315, 060399
Pharmacy	060501
Dentistry	060701, 060703, 060705, 060799
Veterinary Science	061101, 061103, 061199
Physiotherapy	061701
Occupational Therapy	061703
Teacher Education – Other	070107, 070109, 070111, 070113, 070115, 070117, 070199, 070301, 070303, 079999, 070100, 070000
Teacher Education - Early Childhood	070101
Teacher Education - Primary & Secondary	070103, 070105
Accounting	080101
Business Management	080301, 080303, 080305, 080307, 080309, 080309, 080311, 080313, 080315, 080317, 080319, 080321, 080323, 080399
Sales & Marketing	080501, 080503, 080505, 080507, 080509, 080599
Management & Commerce - Other	080000, 080901, 080903, 080905, 080999, 089901, 089903, 089999
Banking & Finance	081101, 081103, 081105, 081199
Political Science	090101, 090103
Humanities inc History & Geography	090000, 090300, 090301, 090303, 090305, 090307, 090309, 090311, 090313, 090399, 091301, 091303, 091701, 091703, 099901, 099903, 099905, 099999
Language & Literature	091501, 091503, 091505, 091507, 091509, 091511, 091513, 091515, 091517, 091519, 091521, 091523, 091599
Social Work	090501, 090503, 090505, 090507, 090509, 090511, 090513, 090515, 090599
Psychology	090701, 090799
Law	090901, 090903, 090905, 090907, 090909, 090911, 090913, 090999
Justice Studies & Policing	091101, 091103, 091105, 091199
Economics	091901, 091903
Sport & Recreation	092100, 092101, 092103, 092199
Art & Design	100000, 100301, 100303, 100305, 100307, 100309, 100399, 100501, 100503, 100505, 100599, 109999
Music & Performing Arts	100101, 100103, 100105, 100199

DIISRTE subject area	ASCED Detailed Field Of Education
Communication, Media & Journalism	100701, 100703, 100705, 100707, 100799
Tourism, Hospitality & Personal Services	080701, 110000, 110101, 110103, 110105, 110107, 110109, 110111, 110199, 110301, 110303, 110399, 120000, 120101, 120103, 120105, 120199, 120301, 120303, 120305, 120399, 120501, 120503, 120505, 120599, 129999

Figure 8: UES 2012 poster and postcard

Figure 9: UES 2012 YouTube promotional video

Table 15: UES 2012 media list

Date	Outlet	Medium	Region
23-Jul-12	The Australian	Online	NAT
24-Jul-12	The Australian	Online	NAT
24-Jul-12	ABC 702 Sydney	Radio	NSW
24-Jul-12	ABC 666 Canberra	Radio	ACT
24-Jul-12	ABC Southern Queensland, Toowoomba	Radio	QLD
24-Jul-12	ABC 666 Canberra	Radio	ACT
24-Jul-12	ABC 720 Perth	Radio	WA
24-Jul-12	ABC 666 Canberra	Radio	ACT
24-Jul-12	ABC 702 Sydney	Radio	NSW
24-Jul-12	ABC 774 Melbourne	Radio	VIC
24-Jul-12	ABC 666 Canberra	Radio	ACT
24-Jul-12	ABC Southern Queensland, Toowoomba	Radio	QLD
24-Jul-12	ABC Triple J	Radio	NAT
24-Jul-12	ABC Southern Queensland, Toowoomba	Radio	QLD
24-Jul-12	WIN Canberra	TV	ACT
24-Jul-12	Queensland Times	Print	QLD
25-Jul-12	The Australian	Online	NAT
06-Aug-12	Daily Telegraph	Print	NSW
06-Aug-12	Daily Telegraph	Online	NSW
06-Aug-12	news.com.au	Online	NAT
06-Aug-12	Herald Sun	Online	VIC
06-Aug-12	Courier Mail	Online	QLD

Date	Outlet	Medium	Region
06-Aug-12	Perth Now	Online	WA
06-Aug-12	Adelaide Now	Online	SA
06-Aug-12	Asian News International	Print	INT
06-Aug-12	TruthDive	Online	INT
06-Aug-12	ANI News	Online	INT
06-Aug-12	Deccan Chronicle	Online	INT
08-Aug-12	Daily Examiner (Grafton)	Print	NSW
14-Aug-12	MX Melbourne	Print	VIC
14-Aug-12	MX Sydney	Print	NSW
14-Aug-12	MX Brisbane	Print	QLD
14-Aug-12	Triple J	Radio	NAT
14-Aug-12	Triple J	Radio	NAT
16-Aug-12	3CR Melbourne	Radio	VIC

Figure 10: Melbourne and Sydney MX 14/08/12 front cover
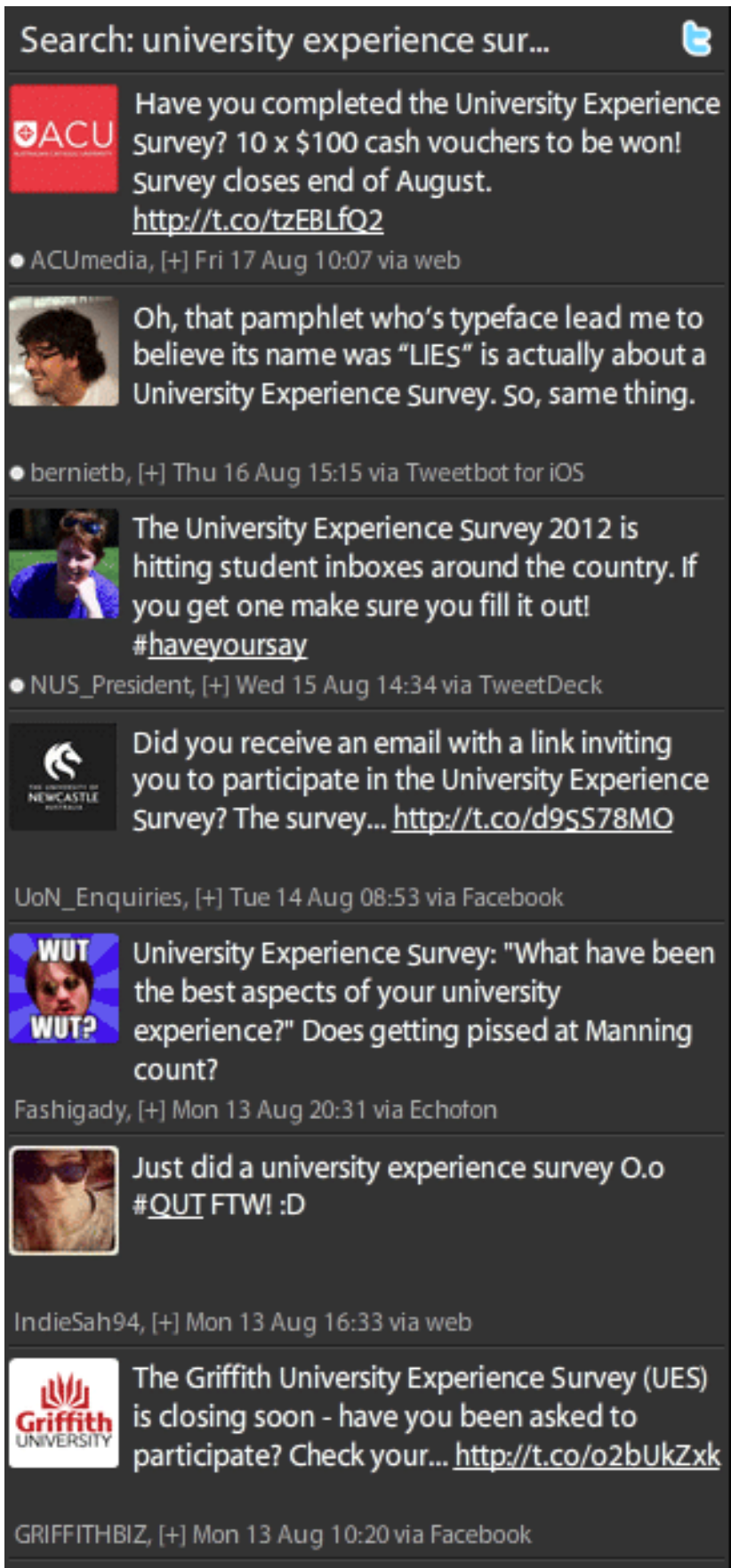
Figure 11: UES 2012 sample tweets

Figure 12: UES 2012 sample PowerPoint for use by teachers

E   2012 University Experience Questionnaire (UEQ)

Table 16: Skills Development items

Stem	Item	Response scale
To what extent has your experience at university developed your:	critical thinking skills?	Not at all / Very little / Some / Quite a bit / Very much
	ability to solve complex problems?	
	ability to work with others?	
	confidence to learn independently?	
	written communication skills?	
	spoken communication skills?	
	knowledge of the field(s) you are studying?	
	development of work-related knowledge and skills?	

Table 17: Learner Engagement items

Stem	Item	Response scale
At university during 2012, to what extent have you:	had a sense of belonging to your university?	Not at all / Very little / Some / Quite a bit / Very much
	felt prepared for your study?	
In 2012, how frequently have you:	participated in discussions online or face-to-face?	Never / Sometimes / Often / Very often
	worked with other students as part of your study?	
	interacted with students outside study requirements?	
	interacted with students who are very different from you?	
At university during 2012, to what extent have:	you been given opportunities to interact with local students	Not at all / Very little / Some / Quite a bit / Very much / Not applicable

Table 18: Teaching Quality items

Stem	Item	Response scale
Thinking of this year, overall at your university, how would you rate the quality of:	the teaching you have experienced?	Poor / Fair / Good / Excellent
	your entire educational experience?	Poor / Fair / Good / Excellent
During 2012, to what extent have your lecturers, tutors and demonstrators:	engaged you actively in learning?	Not at all / Very little / Some / Quite a bit / Very much
	demonstrated concern for student learning?	
	provided clear explanations on coursework and assessment?	
	stimulated you intellectually?	
	commented on your work in ways that help you learn?	
	seemed helpful and approachable?	
	set assessment tasks that challenge you to learn?	
In 2012, to what extent has your study been delivered in a way that is:	well structured and focused?	Not at all / Very little / Some / Quite a bit / Very much
	relevant to your education as a whole?	

Table 19: Student Support items

Stem	Item	Response scale
At university during 2012, to what extent have you:	received support from your university to settle into study?	Not at all / Very little / Some / Quite a bit / Very much
	experienced efficient enrolment and admissions processes?	
At university during 2012, to what extent have:	you felt induction/orientation activities were relevant and helpful?	Not at all / Very little / Some / Quite a bit / Very much / Not applicable
During 2012, to what extent have you found administrative staff or systems such as online administrative services, frontline staff, and enrolment systems to be:	available?	Not at all / Very little / Some / Quite a bit / Very much
	helpful?	
During 2012, to what extent have you found careers advisors to be:	available?	Had no contact / Not at all / Very little / Some / Quite a bit / Very much
	helpful?	
During 2012, to what extent have you found academic or learning advisors to be:	available?	Had no contact / Not at all / Very little / Some / Quite a bit / Very much
	helpful?	
During 2012, to what extent have you found support services such as counsellors, financial/legal advisors and health services to be:	available?	Had no contact / Not at all / Very little / Some / Quite a bit / Very much
	helpful?	

At university during 2012, to what extent have you:	used university services (e.g. phone hotlines, online support, learning skills service, careers service, childcare, health service) to support your study?	Not at all / Very little / Some / Quite a bit / Very much
	you been offered support relevant to your circumstances?	Not at all / Very little / Some / Quite a bit / Very much / Not applicable
	you received appropriate English language skill support?	

Table 20: Learning Resources items

Stem	Item	Response scale
Thinking of this year, overall how would you rate the following learning resources at your university?	Teaching spaces (e.g. lecture theatres, tutorial rooms, laboratories)	Poor / Fair / Good / Excellent / Not applicable
	Student spaces and common areas	Poor / Fair / Good / Excellent / Not applicable
	Online learning materials	Poor / Fair / Good / Excellent / Not applicable
	Computing/IT resources	Poor / Fair / Good / Excellent / Not applicable
	Assigned books, notes and resources	Poor / Fair / Good / Excellent / Not applicable
	Laboratory or studio equipment	Poor / Fair / Good / Excellent / Not applicable
	Library resources and facilities	Poor / Fair / Good / Excellent / Not applicable

Table 21: Open-response items

Stem	Item	Response scale
What have been the best aspects of your university experience?	What have been the best aspects of your university experience?	Open response
What aspects of your university experience most need improvement?	What aspects of your university experience most need improvement?	Open response

Table 22: Demographic items

Stem	Item	Response scale
What is the name of your university?	What is the name of your university?	Drop down list
Are you male or female?	Are you male or female?	Male / Female
Where has your study been mainly based in 2012?	Where has your study been mainly based in 2012?	On one campus / On two or more campuses / Mix of external/distance and on-campus / External/distance
How much of your study do you do online?	How much of your study do you do online?	None / About a quarter / About half / All or nearly all
Which number between 0 and 100 best represents your average overall grade so far in 2012?	Which number between 0 and 100 best represents your average overall grade so far in 2012?	Open-ended
In what year did you first start your current qualification?	In what year did you first start your current qualification?	Before 2008 / 2008 / 2009 / 2010 / 2011 / 2012
How many years of your current program of study/course have you completed?	How many years of your current program of study/course have you completed?	None, in first year / One year / Two years / Three years / More than three years
What are your major areas of study (e.g. accounting, primary education, psychology)? *You may list up to three areas of study.*	What are your major areas of study (e.g. accounting, primary education, psychology)? *You may list up to three areas of study.*	Open response

Table 23: Contextual items

Stem	Item	Response scale
At university during 2012, to what extent have:	your <u>living arrangements</u> negatively affected your study?	Not at all / Very little / Some / Quite a bit / Very much / Not applicable
	your <u>financial circumstances</u> negatively affected your study?	
	paid <u>work commitments</u> negatively affected your study?	
During 2012, have you seriously considered leaving your current university?	During 2012, have you seriously considered leaving your current university?	No, I have not seriously considered leaving / Yes, I have seriously considered leaving
<IF YES> Please specify your reasons for seriously considering leaving your current university in 2012. *Mark all that apply.*	Academic exchange / Academic support / Administrative support / Boredom/lack of interest / Career prospects / Change of direction / Commuting difficulties / Difficulty paying fees / Difficulty with workload / Expectations not met / Family responsibilities / Financial difficulties / Gap year/deferral / Government assistance / Graduating / Health or stress / Institution reputation / Moving residence / Need a break / Need to do paid work / Other opportunities / Paid work responsibilities / Personal reasons / Quality concerns / Received other offer / Social reasons / Standards too high / Study/life balance / Travel or tourism / Other reasons	Selected / Not selected

F   Supplementary statistical and psychometric analyses

Overview

All questionnaires should provide valid, reliable and efficient measurement of the constructs they purport to measure. This imperative is magnified given that the University Experience Survey questionnaire is designed for high-stakes national use, including for potential publication on MyUniversity. The following report provides an overview of the psychometric validation that has been conducted on the items that compose the survey instrument. A copy of these items is included in Appendix E.

Content validity

Content validity refers to the extent to which a questionnaire covers the defined constructs. Content validity is imperative in a survey like the UES given the close links between the questionnaire, students' completion experience, and the various reports that are produced.

Figure 3 shows the constructs targeted for assessment in 2012. In broad terms, it is intended that the UES measure Skills Development, Learner Engagement, Teaching Quality, Student Support and Learning Resources. Further background on these constructs is provided in the 2011 UES Development Report (Radloff et al., 2011).

Content validity was assured in the UES through the research-based and highly consultative way in which the instrument was developed. Through its formation, questionnaire items were mapped against the conceptual model until an optimum balance was struck linking theory with practice. Producing item text that was particular enough to be useful while also general enough to cover the experience of hundreds of thousands of students presented an ongoing challenge to the development team. As part of this process consideration was given to ensuring that items made sense to respondents and other stakeholders on face value.

Reliability

The concept of measurement reliability signals that item and scale scores, like all measures, can never be completely precise. Observed results can be considered to be made up of two components—a 'true' score and an 'error' score. Reliability of an item or scale is the ratio of the true score variance to the observed score variance. In general reliability of 0.80 or higher is generally regarded as acceptable, flagging reasonably small measurement error.

Table 24 reports a commonly used (lower bounds) measure of internal consistency (α), and the score separability reliability estimated during Rasch item response modelling. The reliabilities are good for all five focus areas.

Table 24: UES scales, constituent items and item correlations

Focus area	Alpha	Rasch
Skills Development	0.91	0.88
Learner Engagement	0.79	0.76
Teaching Quality	0.93	0.90
Student Support	0.91	0.83
Learning Resources	0.86	0.77

Construct validity

While content validity relies largely on professional judgement, construct validity is established through psychometric modelling. Construct validity refers to whether a series of items work together to measure a theorised construct. Construct validity must be generalised across contexts, so it is important to review bias.

Table 25 reports results from a series of factor analyses used to examine relationship between each of the five focus areas and its constituent items. The loadings of individual items (λ) on the common factor are shown, as is the percentage of variance (R^2) in the response data explained by the factor. The magnitude of the factor loadings indicates a strong relationship, with all loadings above 0.30 which is generally taken as a threshold.

Table 25: Focus area exploratory factor analyses loadings

Focus area	Items	λ
Skills Development (R^2=60%)	University developed: critical thinking skills	0.64
	University developed: ability to solve complex problems	0.67
	University developed: ability to work with others	0.65
	University developed: confidence to learn independently	0.73
	University developed: written communication skills	0.75
	University developed: spoken communication skills	0.50
	University developed: knowledge of the field	0.81
	University developed: development of work-related knowledge and skills	0.38
Learner Engagement (R^2= 45%)	Opportunities to interact with local students	0.68
	Had a sense of belonging to your university	0.65
	Felt prepared for your study	0.64
	Participated in discussions online or face-to-face	0.73
	Worked with other students as part of your study	0.75
	Interacted with students outside study requirements	0.49
	Interacted with students who are very different from you	0.81
Teaching Quality (R^2= 59%)	Quality of teaching	0.61
	Quality of entire educational experience	0.60
	Study well structured and focused	0.58
	Study relevant to your education as a whole	0.68
	Teachers engaged you actively in learning	0.69
	Teachers demonstrated concern for student learning	0.56
	Teachers provided clear explanations on coursework and assessment	0.79
	Teachers stimulated you intellectually	0.49
	Teachers commented on your work in ways that help you learn	0.63
	Teachers seemed helpful and approachable	0.68
	Teachers set assessment tasks that challenge you to learn	0.64
Student Support (R^2= 48%)	Received appropriate English language skill support	0.59
	Offered relevant support	0.62
	Induction/orientation activities relevant and helpful	0.76
	Received support from university to settle into study	0.55
	Used university services to support your study	0.58
	Administrative staff or systems: available	0.67
	Administrative staff or systems: helpful	0.84
	Careers advisors: available	0.53
	Careers advisors: helpful	0.77
	Academic or learning advisors: available	0.46
	Academic or learning advisors: helpful	0.57
	Support services: available	0.61
	Support services: helpful	0.59
	Experienced efficient enrolment and admissions processes	0.51
Learning Resources (R^2= 54%)	Quality of teaching spaces	0.64
	Quality of student spaces and common areas	0.68
	Quality of online learning materials	0.65
	Quality of computing/IT resources	0.73
	Quality of assigned books, notes and resources	0.75
	Quality of laboratory or studio equipment	0.49
	Quality of library resources and facilities	0.81

Item response modelling was used to confirm the dimensionality and construct validity of the UES focus areas. This modelling showed that the UES items had good relationship with the target constructs. An example is shown in Figure 13 which maps the Learner Engagement variable. What

this shows is that the spread of students shown on the left of the vertical line maps well against the distribution of items shown on the right of the vertical line. In this diagram, each item is shown by its number and response threshold, such that '1.1' refers to the first response category on item 1, and '1.2' refers to the second response category on the same item.

```
         Students    |     Items
                     |
                     |
                     |
               X     |
                     |
                     |
               X     |
               X     |
              XX     |
              XX     |
              XX     |1.4
              XX     |
              XX     |3.4
            XXXX     |
            XXXX     |7.3
           XXXXX     |4.3
          XXXXXX     |2.4  6.3
           XXXXX     |
          XXXXXX     |5.3
          XXXXXX     |
        XXXXXXXX     |
        XXXXXXXX     |
      XXXXXXXXXX     |3.3
        XXXXXXXX     |
        XXXXXXXX     |2.3  7.2
         XXXXXXX     |1.3  6.2
       XXXXXXXXX     |4.2
        XXXXXXXX     |
        XXXXXXXX     |
         XXXXXXX     |5.2
         XXXXXXX     |
            XXXX     |2.2
           XXXXX     |3.2
           XXXXX     |
             XXX     |
              XX     |
              XX     |
              XX     |6.1
               X     |1.2  2.1
               X     |
               X     |4.1
               X     |3.1  7.1
                     |
                     |5.1
                     |
                     |
                     |1.1
                     |
                     |
```
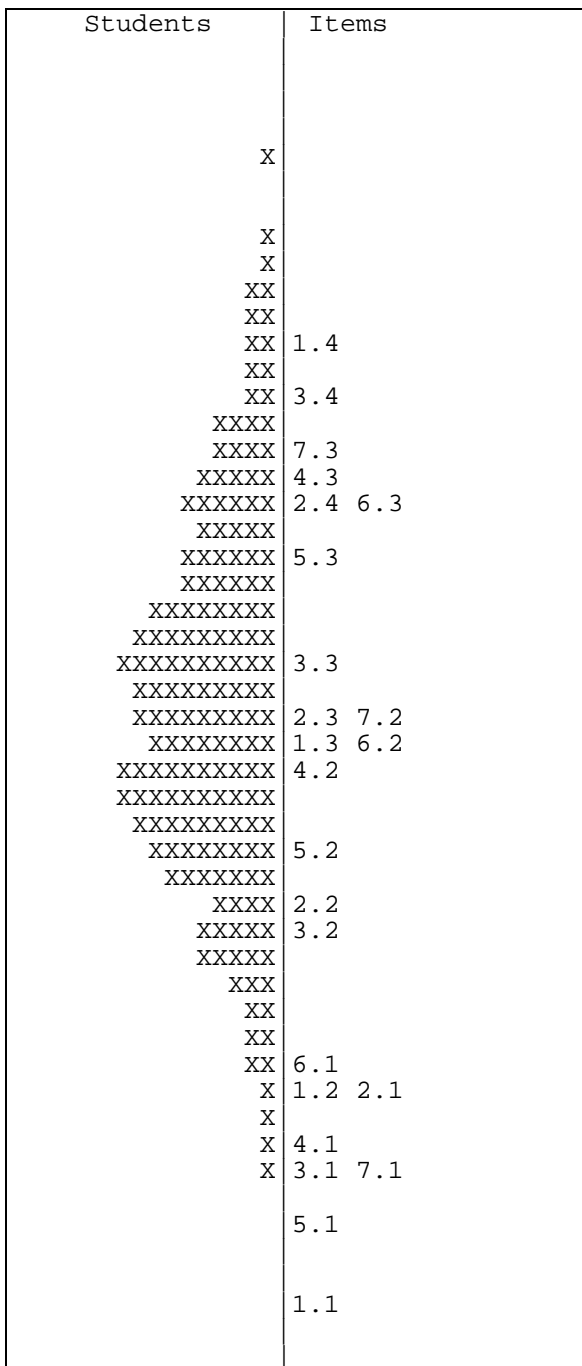
Figure 13: Learner Engagement variable map

The UES is designed for large-scale use and it is imperative that the questionnaire items function effectively across a range of contexts. All measurement instruments contain bias. It is important to understand the magnitude and prevalence of such bias. Technically, bias is analysed by studying differential item functionality (or DIF). DIF explores whether respondents from different backgrounds with the university experience respond in similar ways to a particular item.

Consultation and review throughout the 2012 development highlighted a range of DIF analyses to conduct. Specifically, analyses were conducted to explore whether the UES items perform differently with:

- students studying externally compared with students studying on-campus;
- international rather than domestic students;
- students across different year levels;
- male and female students;
- universities that participated independently or in a devolved administration; and
- between students participating in the survey online or via telephone.

These analyses showed that no items were biased by student year, student sex, or by universities participating in a devolved or independent administration. Four items appeared relatively more demanding for external students, including those related to interacting with different students, interacting with students outside study requirements, opportunities to interact with local students, and working with other students as part of study. An item about whether students used university services to support their study was biased in favour of international students. Items about whether students were offered relevant support, or whether the university experience developed their ability to work with others performed more poorly on the online survey compared with the telephone survey. In contrast, items concerning students' interaction with other students outside study requirements and participation in discussions online or face-to-face performed more poorly on the telephone survey compared with the online survey.

Response category reviews

Performance of the response categories used on the questionnaire was investigated using item response modelling. The results of these analyses affirmed the efficiency and sufficiency of the response scale for the UES constructs and population.

Concurrent validation

Criterion validity is concerned with the relationship between performance of an instrument and with a specific criterion. There are two types of criterion validity: concurrent validity, which is when the criterion is measured at around the same time as the target instrument; and predictive validity, which is when the criterion is measured at a future point in time. As the 2012 was the first national administration of the UES measuring predictive validity is not yet feasible.

One way in which concurrent validity can be explored is through analysis of demographic and contextual data. Universities that participated in the UES pilot provided ACER with a population list that included specific student demographics and information on students' educational contexts. As each student that completed the survey used a unique survey link to participate in the survey, information from the population lists can be linked to an individual student in the population list. Comparisons can thus be made between information provided by universities and students' self-reports. As in 2011, there is a high level of consistency between the HEIMS data and student responses. The concordance was very good for sex, field of education and mode of study (though 'mixed mode' was interpreted slightly more loosely by students).

Another test of concurrent validity is the relationship between performance on the UES and performance in similar surveys. Table 26 reports correlations between the five UES focus areas and the three core CEQ scales (Good Teaching Scale (GTS), Generic Skills Scale (GSS) and Overall

Satisfaction Item (OSI). These correlations show a reasonable amount of convergence at the aggregate national level.

Table 26: UES focus area and CEQ core scale correlations

		UES				
		Learner Engagement	**Teaching Quality**	**Learning Resources**	**Student Support**	**Skills Development**
CEQ	GTS	0.45	0.79	0.46	0.58	0.58
	GSS	0.54	0.68	0.44	0.51	0.78
	OSI	0.42	0.71	0.47	0.50	0.58

G   *Independent reviews of the University Experience Survey*

Dennis Trewin Interim Review

UNIVERSITY EXPERIENCE SURVEY—RESPONSE TO TREWIN RECOMMENDATIONS

Dennis Trewin

Statistical Consultant

In October 2011, I was asked by ACER to undertake a review of the statistical validity of the proposed University Experience Survey (UES) based on the pilot studies and proposed design specifications. A report was prepared which made nine recommendations as outlined below. A copy of the report was published on the DEEWR web site together with the ACER report on the proposed UES. At the 21 August 2012 meeting of the Project Advisory Group, a question was raised as to how the nine recommendations had been addressed. The following summary outlines my understanding of the response to those recommendations in terms of the UES being conducted in August/September 2012.

- *Steps should be taken to improve response rates. This is a collective effort involving the ACER, the Government sponsor, the Universities and the National Union of Students so requires the endorsement of the Project Steering Committee and the Project Advisory Group.*

Steps were taken to understand and document how to improve response rates. The proposed strategy has been documented in 'UES Response Rate Strategy' and is based on a survey engagement model. It is consistent with what would be regarded as good practice. Nevertheless, it has to be operationalised—this is being done through an Institute Administration Guide which has been distributed to all participating universities. The response rate strategy has been discussed with the Project Advisory Group.

- *A target response rate of 35% should be used at the institution level. The achieved sample should be checked for representativeness and, if not representative, steps taken to address this issue Recommendation 5 may be relevant.*

This target has been accepted. However, the most important thing is to ensure that the survey is reasonably representative. This is more likely to be the case if the response rate is higher. However, it is not guaranteed that a high response rate will result in a representative sample. Conversely, a lower response rate does not necessarily mean that the sample is non-representative. Some analysis of whether the sample is representative or not is required.

To mitigate against possible non-response bias, ACER has:

- Introduced a CATI component to follow-up targeted non-response,
- Stratified the sample according to the most important potential discriminants of survey responses (Institution, year of study, field of study) and will weight data according to stratum weights (which take account of different non-response rates across strata), and
- Provided for analysis of other potentially discriminatory variables (eg gender, domestic/international) and the possibility of using post-stratification and further re-weighting.

- *The independent sampling method should be used to prevent gaming. If response rates are not acceptable for certain universities, further work to improve response rates may need to be devolved but in close collaboration with ACER.*

This has been done. However, privacy and other requirements with certain Universities have meant that contact with the selected students has been devolved to these Universities. This may open the possibility of gaming but ACER is undertaking validity checks on the achieved sample, including independent coding of field of education. Furthermore, the use of stratum specific weights based on institution, field of study and year of study will mitigate against any bias deliberately or accidentally introduced by Universities when following up students.

- *There should be provisions to allow ACER to verify and audit the data collection work done by the Universities.*

Validity checks will be undertaken within ACER. Furthermore, Vice Chancellors are to sign off on any variations to proposed procedures as outlined in the Institution Administration Guide.

- *The steps used to check the survey framework in the pilot test should also be applied to the final survey to ensure the integrity of the framework.*

These steps have been refined and are being undertaken.

- *There should be investigations of what data is available for adjustment of non-response and to benchmark of estimates. Logit regression or some similar technique could be used to assist with the development of the most effective estimation method. Alternatively the results from analysis of similar surveys such as the CEQ could be used. These indicate that field of study should definitely be used as a post-stratification variable.*

As mentioned above, there will be analysis of non-response according to several variables that might impact responses. Three of the variables have been incorporated into the stratification design, including field of study, and the use of stratum specific weights will mitigate against potential non-response bias. As mentioned above, there is the potential to further refine the weighting if differential non-response on other variables is likely to lead to non-response bias.

- *An independent expert should be used to review the survey design and estimation proposals.*

The survey design has been completed and is consistent with my recommendations as are the proposed estimation procedures. I will be asked to advise on further adjustments to estimation procedures if non-response bias is an issue.

- *As has been the past practice of ACER, the Report should contain sufficient material on the survey methods and data accuracy to allow the reader to reliably interpret the estimates.*

I understand that this is the intention.

- *Before the survey design is completed, DEEWR and the other key stakeholders need to agree on the design objectives.*

DIISRTE are the funder and have specified the design objectives in terms of sampling errors. They have also asked for independent reviews of other quality aspects.

It is likely that it will be necessary to roll together some fields of study within institution because the design objectives have not been met (eg a very small number of students in a field of study).

It is also possible that the data for one or more institutions is not of acceptable quality. This is most likely if their own actions have been insufficient to encourage an appropriate level of response. One strategy in this situation, in order to maintain confidence in the survey results, is to only publish data for those Universities where data is of acceptable quality.

Dennis Trewin Final Review

REPORT TO ACER ON QUALITY REVIEW UNIVERSITY EXPERIENCE SURVEY, 2012

Dennis Trewin AO
Statistical Consultant

DRAFT FOR REVIEW

1. Terms of Reference

I was asked to review the proposed University Experience Survey (UES) from the point of view of its statistical validity. This is the main purpose of this report.

This follows a similar report I did for the 2011 pilot study.

2. My Qualifications

My main qualification for this review was that I was Australian Statistician from 2000 until 2007. This was a culmination of a long career in official statistics. Much of my early career was in survey methods. I was Director of Statistical Methods at the Australian Bureau of Statistics (ABS) in the late 1970s and have retained that interest since then.

I have formally been accredited as a statistician by the Statistical Society of Australia. I have undertaken a number of statistical reviews since leaving the ABS. For example, I am currently undertaking a quality audit for Statistics Sweden focussing on their twelve most important statistical outputs.

I have been active in international consulting in a number of countries. Most recently, I have been reviewing the statistical outputs of the Swedish National Statistics Office. One of the problems they are trying to address is the increasing non-response rates in their household surveys.

Other relevant external appointments are Past President of the International Statistical Institute, Past President of the International Association of Survey Statisticians, Chairman of the Policy and Advocacy Committee of the Academy of the Social Sciences of Australia, and Associate Commissioner of the Productivity Commission for the Inquiry into the Not-for-Profit Sector.

I have active associations with three Australian Universities. I don't think they represent a conflict of interest. First, I am a Council member at the University of Canberra. I am also Chairman of their Audit and Risk Management Committee. I work as a Statistical Adviser at James Cook University primarily working on a report on the State of the Tropical Regions. At Swinburne University I chair the Advisory Board for the Institute for Social research.

3. My Approach

I have studied the various documents that were provided to me by Hamish Coates and Ali Radloff. I also visited the ACER Offices on 8 November when I had an opportunity to ask a range of questions about the survey processes and how effectively they worked on practice. I was also able to obtain additional information relevant to this report especially information of a quantitative nature.

The following framework was used for the preparation of this report. It is based on the business process model used for statistical collections, starting from design through to estimation and analysis based on the actual data collection. The framework has been used to identify the main potential sources of error in the UES. It is the same framework that I used for my report on the 2011 pilot study.

TOTAL SURVEY ERROR APPROACH

SURVEY MANAGEMENT		
	DESIGN	Survey Design Questionnaire Design Scale Development Sample Design
	SELECTION	Integrity of Sample Selection
	COLLECTION	Response Management (avoidance of gaming) Minimisation of Non-response Minimisation of Item Non-response
	PROCESSING	Edit and Validation Checks Coding Checks
	ESTIMATION	Adjustment for Non-response Sample Errors Measurement of non-sampling errors

4. **Findings**

I have provided an overview of my assessment here. More details, using the framework above, are provided in the following sections.

A very professional approach has been taken to the design of the UES right through the various design stages. The survey has been undertaken consistently with the design, except for some minor modifications due to circumstances which are discussed below.

In particular, significant effort was devoted to maximising response and ensuring the sample was representative. An overall response rate of 24% was achieved, whilst less than the target of 35%, is good

for a survey of this type although opportunities for improvement should be explored in future surveys.

In particular, the CATI component was successful at increasing overall response on top of that obtained from the on-line survey. Importantly, the CATI operation was designed to focus the effort on obtaining responses from strata where the sample take was relatively low. This should have significantly improved the representativeness of the sample.

In addition to the steps taken to ensure the representativeness of the sample, the proposed weighting procedure will mitigate against non-response bias. The strata were designed to support estimation for the most important domains (Universities, field of study, year of study) and combinations of these domains. These domains are also likely to be significant contributors to explaining the differences between students for the main variables in question. Separate weights will be used for each stratum based on the effective sample sizes. Thus the stratification and weighting procedures will mitigate against potential non-response bias. Furthermore, post-stratification will be undertaken on the gender variable as the response rate for females is much higher than for males.

It is important to remember that the real test of the validity of the sample is its representativeness, not the raw response rates. This has been the focus of my analysis. I believe that the combination of the stratified design with different weights based on population benchmarks, the CATI follow up and the use of gender as a post-stratification variable will have reduced non-response bias so that it should not be an issue of major concern.

The focus on a representative sample and the use of weighting to population benchmarks to stratum/post-stratum population benchmarks is consistent with international trends for dealing with non-response as higher response rates are becoming harder and harder to obtain especially when face to face interviewing is not used.

The scales derived from the survey are one of the most important outputs. These are derived using item response modelling. There is an implicit model underlying the determination of the scales. It has been shown that response rates do not matter much for the derivation of models as the underlying model should apply to both the respondents and non-respondents. That is, the estimated model should be similar with and without the non-respondents. (Reference: Wang R, Desransk J, and Jinn JH; "Secondary data analysis where there are missing observations", Journal of the American Statistical Association, 87, pp952-961)

This does not mean that cross-classifications based on the scale are unbiased. If those at one end of the scale are more likely to be a non-respondent, than there would be a non-response bias in classifications based on the scale unless other actions are taken

Although the sample design, and the estimation methods, mitigate against the risk of non-response bias, the lower than anticipated response rate will mean that sampling errors will be greater than anticipated at the design stage.

1. **Survey Design**

In my previous report I pointed out that the survey design is very dependent on the survey objectives and that the accuracy of survey estimates is largely dependent on the size of the sample rather than the fraction of the population that is being sampled. Consequently, the sample size should be much the same for the smallest and largest universities if you want estimates of the same accuracy. These design principles were used and the survey design is appropriate for the objectives of the survey. Furthermore, the stratification has facilitated the use of weighting to adjust for non-response. I made these and other suggestions in my earlier report. All my suggestions on design have been incorporated although, for

reasons explained below, the 'independent' approach was not used by all institutions for data collection. As a consequence, the response rate was lower than what it might have been for these institutions.

2. Questionnaire Design

There was extensive evaluation and testing of the 2011 pilot test which was the basis of 2012 survey although there were some changes to the survey instrument. Also, as I understand it, there were no tests of the on-line and CATI versions which would have been desirable but shortage of time precluded this. Nevertheless, the questionnaire appeared to work quite well but there will be no doubt be suggestions for improvements for future surveys based on analysis of data from the 2012 survey.

The CATI instrument itself was developed from on-line survey and appeared to work effectively. However, the manager of the CATI facility has suggestions for improvements. Both the amended on-line and CATI versions should be tested before going live in future surveys.

Item non-response varied quite a bit by item. The item non-response rates varied from 6.3% to 21.1% with an average non-response of 8.8% per item. However, some of this was due to the fact that the CATI instrument did not include certain questions and so should be considered as (deliberately) missing data rather than item non-response. If you looked at the on-line survey only, the item level non-response rates varied from 7.3% to 9.5% with an average of 7.8%. Items with a higher non-response rate tended to be those with a not applicable category. However, I was advised it did not appear to have an impact on the estimation of scales which are one of the most important outputs from the survey.

One of the interesting features of the questionnaire design was the use of five different orderings of the main question blocks to mitigate against possible ordering effects. There is only limited analysis yet of the ordering effects. This feature adds a complication so there should be some analysis of whether ordering effects exist or not. If not, this 'complication' could be removed from future surveys. The analysis I have seen is item non-response rates by the ordering of survey items. There is a definite increase towards the end of the questionnaire suggesting a fatigue factor. This would imply that the complication of the different question orderings is warranted.

3. Framework of Students

The framework of students was prepared by the Universities according to instructions provided by ACER. Validity checks showed that Universities did this work quite well. There was some confusion about definition of final year students which should be resolved before next survey.

The coverage of students is only one dimension to the quality of the framework. For the survey to be effective, the address details also have to be accurate. One indicator is the number of email bounce backs as that was the most important contact information for the first phase of the survey. Email bounce backs were 1.0% but significantly higher at one University (7.3%) because they were in the process of changing their administration system at the time of the survey and could not provide the most recent contact details. Without this University, the bounce back rate would have been 0.85%. This is a very good outcome for a survey of such a transient population.

4. Sample Selection and Administration

The sample selection was undertaken by ACER for all Universities but with differences in the way it was administered by Universities. This made overall administration of the survey more difficult and should be avoided in the future. This can be seen by the range of different approaches outlined below. ACER has used the dichotomy of 'independent' and 'devolved' to describe the various approaches. I have used the same description below.

- Nine institutions distributed the survey instrument internally (devolved). With the exception of one institution, which allowed an 'opt in to CATI' campaign, the remainder did not participate in CATI.
- For the remaining 31 universities, ACER distributed the survey instrument (independent). Some institutions required non-disclosure agreements, others ran an 'opt out' campaign with selected students prior to providing contact details to ACER. One tried an 'opt in' campaign but reverted to 'opt out' when the response was extremely low.

There is a need for a consistent approach and this should be determined before the next round.

Although the sample appears to have been administered accurately, as demonstrated below response rates show that 'independent' approach achieved a much higher response rate than 'devolved' approach mostly because it facilitated CATI and allowed some of the respondents to be followed up. Moreover, the non-response follow-up using CATI could be targeted at those strata that were under-represented in the achieved sample thereby increasing the representativeness of the sample. Also, another advantage of the independent approach is that it eliminates the potential for gaming by universities.

The following data shows that the independent approach is preferable.

- For those universities where the yield is 90% or more of the target sample size, 13 used the independent approach whereas only 2 used the devolved approach.
- For those universities where the yield is 75% or less, 6 used the independent approach and 5 used the devolved approach.
- The median yield for those using the independent approach was 81% whereas the median yield for those using the devolved approach was 64%.

In order to have the desired consistent 'independent' approach, there is a need for a consistent approach to privacy. This may involve the use of an 'opt out' facility. This should not greatly affect response rates as these students are unlikely to respond anyway. Allowing opt out may make an 'independent' approach more palatable to those universities most concerned about privacy.

5. Scales

As it is largely outside my area of expertise, I have not attempted to review the work on scales although I note the range of validity checks that have been undertaken.

6. Response Management

The overall response rate is 24% less than the target of 35%. The lower response rate will increase sampling errors and increase the risk of non-response bias. I have deliberately used the word risk. For example, if the achieved sample is still representative, there will be no non-response bias. Representativity is a very important objective for surveys that have inherently low response rates. In fact, it can be shown that following up non-respondents that are more typical of current respondents than the majority of non-respondents will reduce the representativeness of the sample.

It is becoming more common to compile statistical measures that assess this as well as providing an assessment of the overall representativity of the sample. One such statistic is known as the R-factor and another is known as the distance function which essentially measures the 'distance' between respondents and non-respondents on certain attributes that are known for both. These measures also show whether the representativeness of the sample is being improved by successive waves of data collection (reminders, CATI, etc). I am not sure if sufficient information was collected to enable the R-factor to be estimated retrospectively. If the information is available, it would be worth doing as it would be helpful for the design of the next survey. Certainly, arrangements should be put in place to allow this to be estimated in future

surveys. It is prudent to not just rely on response rates as an indicator of the validity of the sample (References: Schouten B, Cobben F and Bethleham J, (2009), "Indicators for the representativeness of survey response", Survey Methodology, 35, 101-113; Sarndal C-E (2007) "The Calibration approach in survey theory and practice", Survey Methodology, 33, 99-119)

I would expect that, given the way CATI was applied, that the representativeness of the sample would have definitely improved.

Reminders were definitely important in increasing the response rate and sample size. It would be worth analysing whether they have increased the representativeness of the sample. Certainly the higher sample size as a result of reminder action will reduce the size of sampling errors.

Some analysis of possible non-response bias is shown in part 8.

As expected, there were differences in response rates across universities. The yield (comparison with expected sample take) varied from 50% to 155% with an average of about 82%. As explained above one explanation was whether CATI follow up was used or not. No doubt, there are other factors and there should be some understanding of these before the design of the next survey. The differential non-response rates by institution will be taken into account in the weighting system used in estimation.

There were also significant differences in yields across fields of study. There were high rates for Humanities and Natural and Physical Sciences and low rates for Sales and Marketing. Again, the differential response rates will be taken into account in the weighting system used for estimation.

As mentioned above, CATI was important for improving response rate and representativeness of the sample. Although the increase in response rate was only 15%, the information available suggests the targeted nature of CATI should have resulted in a disproportionate improvement in the representativeness of the sample.

A significant and impressive effort was put into the marketing campaign. It was well researched but there should be some analysis of what were the most effective aspects of the marketing campaign before the next survey. University newsfeeds and the University web site appear to be the most effective vehicles for reaching students.

As a general comment, the extensive surveying of the student population makes their co-operation more difficult. There should be some rationalisation of surveys. Furthermore, if samples are used, it is possible to devise a schema where different students are selected for different surveys. The ABS uses such a schema to minimise overlap in their business surveys among the small and medium sized enterprises and a similar scheme could be used for student surveys.

7. Coding of Open Ended Responses

At the time of my visit, work was still in progress on the coding scheme for open ended responses using textual interpretation software. In particular, the dictionary to support coding was still being developed. This work appeared to be undertaken in a professional way. The intention is to validate the coding system when the dictionary is further expanded especially for field of study where alternative estimates would be available.

8. Estimation, including adjustment of non-response

Stratum level weighting will be used and this will adjust for differential non-response across the strata (university, field of study, first/final year students). It will not adjust for any differences between

respondents and non-respondents within strata. Post-stratification may assist in this respect. This involves weighting respondents within a stratum differently according to their characteristics with respect to potential post-stratification variables.

To warrant the use of post-stratification to reduce possible non-response bias, there has to be both a differential non-response rate for the categories (within a post-stratification variable) AND the survey characteristics (eg scales) for these categories have to be different. For example, the response rate for females was much higher than that for males. If the characteristics of females were different to those for males, the use of post-stratification would reduce non-response bias.

There is another reason for applying post-stratification. If it is important for the estimates of particular categories (eg females) across strata to add to population totals, post-stratification can be used to affect this. For example, post-stratification is used in the ABS Labour Force Survey to force estimates to add to independent benchmarks of population disaggregated by State/Territory, age group and gender. A similar approach could be used in UES for estimates disaggregated by gender. Without the use of post-stratification, females would be over-estimated and males would be underestimated.

The potential post–stratification variables that were considered for UES were gender, domestic/international students and type of study. As mentioned above there were differential response rates across the two gender categories. However, for the other two potential post-stratification variables, there was little difference in response rates across the categories so ACER quite rightly did not give further consideration to these variables for post-stratification purposes.

As it turned out, the differences in characteristics between males and females were not that great so the benefits from post-stratification on gender were minimal for reducing non-response bias. However, there is a desire to have accurate estimates for males and females so ACER plans to use post-stratification for this purpose. I support this decision.

Although I cannot be certain, I think the steps taken with the survey design to improve the representativeness of the sample, and the use of stratification and post-stratification with separate weighting of strata/post-strata, should mean that non-response bias is low. Why do I say this? For the CEQ study in 2005, analysis was undertaken which showed the most important determinants of student scales were the variables used for stratification and considered for post-stratification in the UES. The most important variable for the CEQ was field of study and this might be the case for UES as well. It was used as a stratification variable.

In summary, the stratification variables were institution, field of study and year of study. The post-stratification variable was gender. Given their explanatory power, calibration to these stratification and post-stratification variables is likely to have reduced much of the non-response bias. Although, the residual non-response bias is likely to be small, it should be noted that the risk of non-response bias is greater for smaller domains.

Another question that might be asked is the impact of non-response on the modelling that is undertaken to estimate the scales. The answer is that the impact should be negligible. As explained towards the bottom of page 3, this model should apply to both respondents and non-respondents. Therefore, a model based on respondents only should still be representative of the whole population.

9. Sampling and Non-sampling errors

Details about Sampling errors should be estimated and presented to assist with analysis of report. This should be based on actual data. Furthermore, there should be a description of the more significant non-sampling errors and a discussion of the risks they pose to use of the estimates.

I understand it is intended that report will contain a description of data quality. I have read the 2009 Report from AUSSE and it is an example of good practice for reporting survey quality. It provided the information that was required and presented in an easily digested form and should provide a good model for the UES. There was some information on sources of error but not as many metrics as desirable. I think there are two types of error where metrics are desirable.

(i)   Sampling errors

(ii)   Non-response bias, even if only a dissection of response rates.

10. Publication

Criteria have been published for determining what data should be published. I strongly support having these criteria established in advance. However, I am concerned that criteria 5 might be too tight and some useful data will be prevented from being published. This criteria is:

"Effective sample size is sufficient for reporting nominated scales at 95% level of confidence with + or – 5 per cent error band width (ie response for each stratum or combination of strata meet or exceed sample design quotas)."

This could be more clearly expressed but if I understand it correctly and the spreadsheets provided by ACER, (1) data for all Higher Education Institutions (HEIs) would be published, (2) data for HEI's by year of study except for one combination would be published, (3) data for about 50% of fields of study by HEI would be published, (4) and 20% of HEIs by field of study and year would be published.

This is a reasonable outcome but, given the sample size is lower than planned, I would suggest that all data for Tables (1), (2) and (3) at least be published together with information on sample errors so users can assess the reliability of the data for their purposes. Furthermore, data in these tables with high sampling errors (eg standard errors of 20% or higher) could be marked with an asterisk to highlight the high sampling errors. This is the ABS practice rather than suppressing cells with high sampling errors. That is, a 'user beware' approach be adopted rather than suppressing those cells with high sampling errors.

5. Previous Discussion on Error Sources

In my report on the 2011 Pilot Study, I highlighted the main potential sources of error to be those listed below. These were potential sources of errors only. They may not be significant in practice if the right mitigation steps were taken. In italics I have described what I believe to be their actual importance for the 2012 UES.

1. Poor questionnaire design leading to inaccurate or incomplete responses, or answers that are not relevant to the desired concepts. *<The questionnaire was extensively assessed for validity during the 2011 Pilot Study. No further tests were undertaken for the 2012 surveys but there were no indications of major questionnaire problems.>*

2. The survey framework does not have complete coverage of current undergraduate university students. *<Checks were undertaken to ensure that the coverage were sound so this should not be a significant problem.>*

3. The survey design is poor leading to a sample that is (a) unrepresentative and/or (b) inefficient so that the survey estimates are less accurate than they might be. *<I believe the survey design was very good and consistent with my previous advice.>*

4. The integrity of the sample selection is at risk of 'gaming' by universities. There will be some incentive to do this if the UES is to be used for funding allocation purposes. *<This was eliminated by*

ACER selecting the samples and the universities applying the selected samples.>

5. There is a high non-response rate leading to the possibility of non-response bias. *<The non-response rate is quite high but the steps taken to mitigate non-response bias should mean this does not have an undue influence on the major aggregates.>*

6. There is significant item non-response. *<The rates are moderately high but they do not appear to be a problem for the estimation of scales.>*

7. Some question responses require manual coding and there is the possibility of coding errors or inconsistent coding across the persons undertaking coding. *<This work had not been undertaken at the time of my review.>*

8. The validation checks undertaken as part of input processing are inadequate. *<My review did not cover this aspect but the questionnaire was designed so that very few validation checks were required at the input stage.>*

9. The validation checks on preliminary outputs are inadequate. *<This work had not been undertaken at the time of my review but it is intended that this be done.>*

10. The estimation method does not take account of the actual sample which may be influenced by non-response for example. *<The estimation methods which are proposed for use are the most appropriate given the benchmark data that is available.>*

6. Conclusions

The survey design was appropriate for satisfying the objectives of the survey. The main risks to quality are sampling errors and non-response bias both of which have been discussed in detail above.

The sample size is sufficiently large to enable most of the large aggregates to be published. Also, many of the detailed statistics can be published although some will be subject to high sampling error. It is important that details of sampling error be published so that readers can interpret the data. The sample size is smaller than anticipated, because of the lower response rate, so the estimates will higher sampling errors than anticipated at the design stage. The relative size of the sampling errors is proportional to the square root of the sample size. Therefore, it should not unduly influence the amount of detail that can be published.

 The lower response rate leaves open the potential for non-response bias to be an important influence. However, all reasonable steps have been taken to mitigate the impact of non-response bias. The residual impact should not be large for the major aggregates. It may be more significant in relative terms for smaller aggregates so care should be taken in interpreting these estimates.

DECEMBER 2012

An Assessment of UNIVERSITY EXPERIENCE SURVEY 2012

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Introduction

In July 2012, representatives of the Consortium responsible for the development, execution and analysis of the University Experience Survey (UES) asked the Statistical Consultation Group (SCG) to review and comment on the strategies and methods implemented in the first wave of the UES.

Our review is based on several drafts of the "UES 2012 National Report" and "UES Institutional Report" prepared by Ali Radloff (Australian Council for Educational Research), A/Prof. Hamish Coates (ACER), Dr. Rebecca Taylor (ACER), Prof. Richard James (Centre for the Study of Higher Education) and Prof. Kerri-Lee Krause (University of Western Sidney); we were also granted access to various worksheets containing information on data collection and on weighting procedures.

Our comments follow the various stages of the life cycle of a typical sample survey, as they are described in section 1.1 of *Survey Methods and Practices*[1]:
- Statement of objectives;
- Selection of a survey frame;
- Sample design;
- Questionnaire design;
- Data collection, capture and coding;
- Data editing and imputation;
- Weighting and Estimation;
- Data analysis;
- Data dissemination; and
- Documentation.

With the information made available to us, the extent to which all ten elements can be commented on is not as much as each deserves. This is the case for Data Collection, Capture and Coding, Data Editing and Imputation, Data Analysis and Dissemination for which we can give but a rather loose appreciation. Hence, we will focus on the sections for which more information is available: the instruments, the sample design and some aspects of the weighting and estimation strategies.

Statement of Objectives

The objectives of the UES are detailed in the first three sections of the national report. Additionally, how the UES links to other similar surveys in Australia and in other countries is documented. The UES is contextualised, with connections to a certain tradition of student surveys in Australian higher education as well as to what is done in other English-speaking countries and in the European Community.

The UES national report also details the underlying concepts that are converted in the UES

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[1] Statistics Canada (2003) *Survey Methods and Practices*, Catalogue number 12-587X, Ottawa; http://www.statcan.gc.ca/pub/12-587-x/12-587-x2003001-eng.htm

instruments.

Survey Population and Frames

The UES national report gives an extensive description of the "student of interest", in terms of location, enrolment, "year level", etc. While the descriptions of who is "in" and who is "out" may appear to be meticulous and exhaustive, they are blurred by some criteria that make the survey taker unable to circumscribe the population of students before collection. Later efforts to benchmark the survey estimates to some population counts may be difficult dues to this: self-excluded students (those who were told they could "opt out") should preferably be treated as non-response if selected, and those "omitted from the population [*sic*] by institutions" should be regarded as under-coverage rather than exclusions.

The participating institutions, following guidelines provided by the Consortium, compiled the sampling frames. The Consortium consolidated and homogenised the forty frames into a single national UES frame.

Sample Design

The national frame was stratified by Institution (40), Year level (2) and subject area (45). Strata comprising less than 6 students were removed from the frame; a total of 146 strata accounting for some 350 students were thus excluded. Given the richness and variety of the sources, one could have gotten carried away with stratification; the Consortium was wise in limiting the number of stratifications variables. Still, nearly 2,000 strata are populated out of a possible 3,600.

The sample selection method was adapted to the stratum size: a census in strata comprised of no more than 1,000 students, and a systematic random sample in the other, larger strata. In the latter, sorting was used to improve the chances of obtaining an approximately proportional representation of sex, qualification, mode of attendance, detailed field of education and citizenship.

The response rate was expected to be around 35%, uniformly over all strata.
Surprisingly, sex is not used as an explicit stratification variable even though response rates are sex-specific in surveys of adult populations. It is common to find that young (often categorised as those aged from 18 to 24 years old) men tend to respond less than women of the same age group and less than older men.

During our review of this and other UES documents, it came to light that the expected 35% response was not applied uniformly across all strata during the preparation of the student samples. The UES institutional report further describes the stratification strategy: "*For any population of interest the expected yield is 35 per cent of the population size if this is 500 or less, and 200 if the population size exceeds 500. The return of 35 per cent builds on the 2011 UES research, while the value of 200 derives from the desire for error bands of ±5 per cent at a 95 per cent level of confidence[2] given observed standard deviations of the focus areas and population sizes.*" Why the 35% return does not apply to strata of fewer than 500 is unclear. A 35% response rate on a sample of 500 amounts to 175 responses, which, under the best conditions, is equivalent to a 7.6% margin of error, 95% of the time, a more liberal tolerance than for smaller strata. For clarity and future reference, it would be useful to have a proper and thorough account of the stratification scheme, indicating what selection methods were used in what stratum, what sample size was assigned to each stratum, and what response rate was expected from each stratum.

Questionnaire Design

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[2] At the 95% confidence level, a margin of error of ±5% is roughly equivalent to a SRS of size n=400 for estimating a proportion close to π =0,50 from a population of at least 4000. The sample size given here, n=200, is a large sampling fraction of a relatively small population of N=500. The actual size of the error band is closer to 5.6% and drifts to 7.07% as the population grows in size.

We are unfamiliar with the various instruments and questionnaires used in UES. The main instrument is shown in Appendix "A" of the UES national report. Other instruments have been used in some participating institutions but not in every institution. Therefore our comments will be limited to the instrument appearing in Appendix "A" of the report.

Clearly, the University Experience Questionnaire (UEQ) is mostly collecting impressions, opinions or beliefs. However, some questions are factual and the answer scale used could have been numeric rather than nominal.

We note that a few questions may require rephrasing as the answer need not indicate adequately what the student's experience was; for example, considering the last question of "Student Support Items" displayed in Table 13 of Appendix "A", namely, "*At university during 2012, to what extent have you: (b) been offered support relevant to your circumstances?*", one might think that responses located at the lower end of the scale might indicate some flaw on the part of the support providers; the item fails to capture whether any support was required and if so, whether the support offered was sufficient and adequate. Other examples could probably be found, where the stem might not have properly carried the intent of the item. Following best practices, the Consortium would likely review and amend the UEQ where needed before a second wave of the UES.

Given that the collection was done exclusively using electronic means, it is hard to understand why the number of "booklets" is limited to five. Moreover, in spite of the Consortium's claim to have resorted to experimental designs to decide on the make-up of each version, it is hard to see how versions A, B and C balance one another, especially since "demographics" appear first in 2 of the 3 versions, "Group 2" never appears last, neither "Group 2" nor "Group 3" appears first. Given the number of students interviewed, there was ample room to achieve a more convincing arrangement of groups within booklets. The Consortium would be well-advised to spend some time examining additional and better-balanced rotation patterns for the next waves of the UES.

Allowing the participating institutions to add their own items to the USQ may be an interesting way to have those institutions buy in the UES. However, the longer the questionnaire, the higher the risk of response fatigue with the corollary unfinished forms and incomplete datasets. The UEQ items should be administered in a uniform manner across all participating institutions so as to reduce, or, at a minimum, control, possible nonresponse biases. Thus we totally support the Consortium when they propose that non-UES material be included at the end of the UEQ and that no change be made to the UES administrative arrangements.

The amalgamation of various historical questionnaires discussed in the report will be a delicate matter, trying to balance the continuity of each instrument and the burden imposed on the respondents. Still, reducing the number and redundancy of questionnaires must remain a priority.

Data Collection, Capture and Coding

Clearly, the subject of data collection has been the topic of much thought and discussion among the Consortium. The choice of a multi-mode approach might have been wise for a first large-scale wave of collection. This choice should be revisited prior to the second wave, and determine whether much was gained by the alternative method, given the investment in time, resources, etc. that each collection vehicle requires. This may be important given that the CATI vehicle collected fewer items than the on-line version. An investigation of mode effect on the common items might also be interesting, though, admittedly, not of vitally urgent.

On-line collection incorporates data capture and most of data coding, eliminating important sources of non-sampling error and allows for easier rotation of questionnaire modules.

The Consortium might want to revisit their schedule of collection and callbacks, and determine

the optimal number of callbacks required to obtain a sufficient response. Clearly, the last emails did not produce much return, as displayed in Figures 2 and 3 of the UES national report.

The use of incentives to elicit student participation varied across universities. It might be interesting to follow up and determine whether there was differential response due to the offer of monetary or other types of incentives.

Side note: Table 5 presents the most disconcerting results; we suppose that something like "How did you hear about UES?" was asked of participating students, and the means and standard deviations presented in that table are taken over the 40 institutions. The standard deviation used here might not be the best choice to display variation among universities, perhaps a simple range, or first and third quartiles would more suited to describe what must be strictly positive and extremely skewed distributions.

While we understand that it is difficult to impose on higher education institutions a unique data collection protocol, the ideas of "opting in" or "opting out" of the survey should be strongly discouraged as they will tend to induce easy non-response. Response rates and mean scores from these institutions should be compared to those who adhered to the UES collection protocol to determine whether any bias was further introduced. While it is less crucial here than in other studies on education (no cognitive assessment), as a best practice all participating institutions should follow a single protocol. In future waves, perhaps the collection protocol should be devised in conjunction with representatives of the institutions so as to create a protocol acceptable to every institution and applicable by each institution.

The UES claims, in section 4.6 on participation, that response rate is higher where an independent administration was implemented; this is true in crude numbers, but no significant difference can be observed as displayed in the following table:

UES Response Rates by Type of Implementation and Mode of Collection

Type of implementation		Overall	CATI	
			No	Yes
DEVOLVED	mean %	22,9	21,9	31,0
	s(mean %)	8,1	8,0	--
	N	9	8	1
INDEPENDENT	mean %	26,6	28,3	26,4
	s(mean %)	6,4	12,7	5,3
	N	31	4	27

Data Editing and Imputation
No data editing nor imputation for incomplete responses are documented, which is common practice in surveys of opinions, beliefs, and attitudes.

Weighting and Estimation
Not enough details are given with respect to the construction of estimation weights, to the computation of non-parametric statistics, or the computation of sampling errors to allow us to form an educated opinion.

Data Analysis, Dissemination and Documentation
The type of data analysis reported in the UES national report is in accord with what is routinely done in educational assessments: IRT-type scoring, confirmatory factor analyses, differential item functioning, etc.; very little inferential analysis is reported.
There is nothing that we can comment on with respect to dissemination.

The documentation that we have been able to examine is extensive. The Consortium has provided us with drafts of the UES reports and files at various stages of readiness, showing every time improvements and increased clarity. Two areas though remain, in our judgement, less satisfactory: that of sample design and that of weighting and estimation. A more rigorous description of what was actually implemented would be expected at the next wave.

Closing Remarks

The University Experience Survey is a demanding endeavour. A great deal of thought and effort has obviously been devoted to the analytical framework, to the collection protocol, and to the personalisation of the reports on findings. The sampling plans adopted are simple, and even with decent record keeping in the participating institutions, easy to implement and monitor.

We support the "statistical sampling" approach defended by the Consortium. We hope that the institutions participating in the UES will gradually let go of the apparent comfort of the census approach and trust that a well-monitored probabilistic sample may achieve the desired results with fewer people to follow. The use of incentives should perhaps be better planned and, if possible, unified across institutions so that students from all participating institutions participate under the same set of conditions.

All the best!

H UES international item links

Table 27: UES items mapped against selected international student surveys

UES item	NSS	NSSE	U-MULTI RANK	EURO-STUDENT	AHELO
received support from your university to settle into study?	X				
experienced efficient enrolment and admissions processes?					
felt prepared for your study?					
you felt induction/orientation activities were relevance and helpful?					
your entire educational experience?	X	X	X		X
had a sense of belonging to your university?					
participated in discussions online or face-to-face?		X			X
worked with other students as part of your study?					
interacted with students outside study requirements?					
interacted with students who are very different from you?					
you been given opportunities to interact with local students					
the teaching you have experienced?					
engaged you actively in learning?					
demonstrated concern for student learning?					
provided clear explanations on coursework and assessment?	X				
stimulated you intellectually?					
commented on your work in ways that help you learn?					
seemed helpful and approachable?	X				
set assessment tasks that challenge you to learn?					
Teaching spaces (e.g. lecture theatres, tutorial rooms, laboratories)	X		X		
Student spaces and common areas	X				
Online learning materials	X				
Computing/IT resources	X		X		
Assigned books, notes and resources	X				
Laboratory or studio equipment	X				
Library resources and facilities	X		X		
well structured and focused?	X	X	X		
relevant to your education as a whole?		X			

UES item	NSS	NSSE	U-MULTI RANK	EURO-STUDENT	AHELO
available?		X			
helpful?		X			
available?		X			
helpful?		X			
available?		X			
helpful?		X			
available?	X	X			
helpful?	X	X			
used university services (e.g. phone hotlines, online support, learning skills service, careers service, childcare, health service) to support your study?	X				
you been offered support relevant to your circumstances?	X				
you received appropriate English language skill support					
critical thinking skills?		X			
ability to solve complex problems?		X			
ability to work with others?		X			
confidence to learn independently?		X			
written communication skills?	X	X			
spoken communication skills?	X	X			
knowledge of the field(s) you are studying?		X			
development of work-related knowledge and skills?					
your living arrangements negatively affected your study?			X		
your financial circumstances negatively affected your study?					
paid work commitments negatively affected your study?					
During 2012, have you seriously considered leaving your current university?		X			
Which number between 0 and 100 best represents your average overall grade so far in 2012?		X			X
How much of your study do you do online?					X
The staff put a lot of time into commenting on my work					
I found my studies intellectually stimulating	X				
The teaching staff normally gave me helpful feedback on how I was going	X		X		
To do well in this course all you really needed was a good memory					
I was generally given enough time to understand the things I had to learn					

UES item	NSS	NSSE	U-MULTI RANK	EURO-STUDENT	AHELO
The course helped me develop my ability to work as a team member					
I found the course motivating					
It was always easy to know the standard of work expected					
The sheer volume of work to be got through in this course meant it couldn't all be thoroughly comprehended					
The teaching staff of this course motivated me to do my best work					
The course provided me with a broad overview of my field of knowledge					
The library resources were appropriate for my needs					
Overall, my university experience was worthwhile					
The course sharpened my analytic skills					
My lecturers were extremely good at explaining things	X		X		
The teaching staff worked hard to make their subjects interesting	X				
The course developed my confidence to investigate new ideas					
I felt part of a group of students and staff committed to learning					
The workload was too heavy					
Students' ideas and suggestions were used during the course					
I was able to access information technology resources when I needed them					
I learned to explore ideas confidently with other people					
The course developed my problem-solving skills					
Relevant learning resources were accessible when I needed them					
Health, welfare and counselling services met my requirements					
The staff seemed more interested in testing what I had memorised than what I had understood					
The staff made a real effort to understand difficulties I might be having with my work					
I usually had a clear idea of where I was going and what was expected of me in this course	X				
There was a lot of pressure on me as a student in this course					
University stimulated my enthusiasm for further learning					
I felt I belonged to the university community					
The course improved my skills in written communication					
The study materials were clear and concise	X				
The library services were readily accessible					

UES item	NSS	NSSE	U-MULTI RANK	EURO-STUDENT	AHELO
The course has stimulated my interest in the field of study					
I learned to apply principles from this course to new situations					
I was satisfied with the course and careers advice provided	X		X		
It was made clear what resources were available to help me learn					
It was often hard to discover what was expected of me in this course					
I consider what I learned valuable for my future					
Course materials were relevant and up to date					
As a result of my course, I feel confident about tackling unfamiliar problems					
My course helped me to develop the ability to plan my own work					
Too many staff asked me questions just about facts					
I was able to explore academic interests with staff and students					
The staff made it clear right from the start what they expected from students					
Where it was used, the information technology in teaching and learning was effective					
My university experience encouraged me to value perspectives other than my own					
Overall, I was satisfied with the quality of this course					

I   2012 UES baseline statistics

Baseline statistics for UES focus areas and key items are presented in Table 28 to Table 31. Comparisons should be made to national figures and across fields, not between the five different focus areas or across individual items. Given population, sampling and questionnaire differences it is not possible to make simple comparisons with 2011 results.

Table 28 presents national baseline statistics (weighted count((N), mean (X), standard deviation (SD) and standard error (SE)) for each of the five focus areas. Table 29 breaks these down by key demographic and contextual characteristics. Table 30 reports the statistics by ASCED BFOE and DIISRTE subject area.

Table 28: UES 2012 baseline national summary statistics

Statistic	Skills Development	Learner Engagement	Teaching Quality	Student Support	Learning Resources
N	394,119	393,077	436,813	384,260	410,244
X	71	59	69	56	71
SD	18	20	18	19	19
SE	0.03	0.03	0.03	0.03	0.03

Table 29: UES 2012 baseline subgroup summary statistics

Group	Subgroup	Skills Development	Learner Engagement	Teaching Quality	Student Support	Learning Resources
Year level	First year	69	59	71	59	73
	Later year	73	59	68	54	68
Sex	Male	70	59	68	55	70
	Female	72	59	70	57	71
Indigenous	Aboriginal or Torres Strait Islander	73	58	70	60	71
	Not Aboriginal or Torres Strait Islander	71	59	69	56	71
Home Language	English	71	59	70	56	71
	Language other than English	71	58	68	58	70
Disability	Disability reported	70	57	69	59	68
	No disability reported	71	59	69	56	70
Study location	Internal	71	61	69	56	71
	External/ distance/ mixed mode	70	49	69	56	70
International	International student	70	57	68	59	71
	Domestic student	71	60	70	56	71
First in family	Not first in family	69	61	71	58	73
	First in family	70	59	71	59	74

Table 30: UES 2012 baseline summary statistics by subject area

Broad field	Subject area	Skills Development	Learner Engagement	Teaching Quality	Student Support	Learning Resources
Natural And Physical Sciences	Natural & Physical Sciences	70	60	71	73	57
	Mathematics	69	58	70	73	59
	Biological Sciences	72	61	74	74	59
	Medical Sciences & Technology	73	62	72	74	58
IT	Computing & Information Systems	68	59	67	72	57
Engineering and related Technologies	Engineering - Other	69	59	65	70	55
	Engineering - Process & Resources	71	63	66	68	54
	Engineering - Mechanical	69	60	64	67	52
	Engineering - Civil	71	62	65	69	53
	Engineering - Electrical & Electronic	70	61	66	71	56
	Engineering - Aerospace	72	63	67	68	54
Architecture and building	Architecture & Urban Environments	69	62	67	63	53
	Building & Construction	66	53	61	67	51
Agric & Envir Studies	Agriculture & Forestry	67	55	67	70	54
	Environmental Studies	71	59	71	71	57
Health	Health Services & Support	71	60	70	71	56
	Public Health	73	59	72	77	59
	Medicine	73	67	67	67	53
	Nursing	73	59	68	70	58
	Pharmacy	73	62	69	71	57
	Dentistry	72	60	67	62	51
	Veterinary Science	74	66	73	68	53
	Physiotherapy	77	68	76	71	58
	Occupational Therapy	75	65	73	71	56
Education	Teacher Education - Other	72	58	71	71	57
	Teacher Education - Early Childhood	75	57	72	71	57
	Teacher Education -	73	61	69	70	55

Broad field	Subject area	Skills Development	Learner Engagement	Teaching Quality	Student Support	Learning Resources
	Primary & Secondary					
Management and Commerce	Accounting	69	55	68	71	59
	Business Management	70	58	67	71	56
	Sales & Marketing	70	60	67	70	54
	Management & Commerce - Other	70	58	68	72	58
	Banking & Finance	68	57	66	71	57
Society and Culture	Political Science	72	61	72	71	57
	Humanities (including History & Geography)	71	57	73	71	57
	Language & Literature	70	58	74	71	57
	Social Work	74	56	72	69	57
	Psychology	73	58	74	73	58
	Law	72	55	69	70	55
	Justice Studies & Policing	73	54	71	75	58
	Economics	68	57	66	69	54
	Sport & Recreation	71	61	70	71	55
Creative Arts	Art & Design	70	60	70	67	53
	Music & Performing Arts	71	66	73	67	54
	Communication, Media & Journalism	72	61	71	72	56
Food, Hospitality and Personal Services	Tourism, Hospitality & Personal Services	76	56	73	71	65

Table 31 to Table 35 present response category frequencies for key questionnaire items, grouped by the five focus areas.

Table 31: Skills Development item response category frequencies

Item and response categories		First year (%)	Later year (%)	All students (%)
Developed critical and analytical thinking	Not at all	2	1	1
	Very little	5	4	5
	Some	28	21	24
	Quite a bit	45	44	44
	Very much	21	30	26
Developed ability to solve complex problems	Not at all	2	1	2
	Very little	7	5	6
	Some	33	25	29
	Quite a bit	41	43	42
	Very much	17	26	22
Developed ability to work effectively with others	Not at all	3	3	3
	Very little	9	7	8
	Some	28	24	26
	Quite a bit	38	38	38
	Very much	23	28	26
Developed confidence to learn independently	Not at all	2	2	2
	Very little	5	4	5
	Some	21	17	19
	Quite a bit	41	39	40
	Very much	31	38	35
Developed written communication skills	Not at all	2	2	2
	Very little	8	6	7
	Some	30	23	26
	Quite a bit	40	39	39
	Very much	20	30	26
Developed spoken communication skills	Not at all	4	3	4
	Very little	11	9	10
	Some	32	27	29
	Quite a bit	35	37	36
	Very much	17	24	21
Developed knowledge of field studying	Not at all	1	1	1
	Very little	3	3	3
	Some	16	15	16
	Quite a bit	41	39	40
	Very much	39	43	41
Developed work-related knowledge and skills	Not at all	2	3	3
	Very little	8	9	8
	Some	27	26	26
	Quite a bit	38	35	37
	Very much	25	27	26

Table 32: Learner Engagement item response category frequencies

Item and response categories		First year (%)	Later year (%)	All students (%)
Felt prepared for your study	Not at all	3	3	3
	Very little	9	8	9
	Some	34	34	34
	Quite a bit	40	40	40
	Very much	14	15	15
Had a sense of belonging to your university	Not at all	5	8	6
	Very little	13	18	16
	Some	34	33	33
	Quite a bit	31	27	29
	Very much	18	15	16
Participated in discussions online or face-to-face	Never	11	10	10
	Sometimes	34	32	33
	Often	33	33	33
	Very often	23	25	24
Worked with other students as part of your study	Never	6	6	6
	Sometimes	27	24	25
	Often	37	35	36
	Very often	31	36	33
Interacted with students outside study requirements	Never	14	14	14
	Sometimes	33	32	33
	Often	29	28	29
	Very often	24	25	25
Interacted with students who are very different from you	Never	9	10	10
	Sometimes	37	38	38
	Often	33	31	32
	Very often	21	20	21
Been given opportunities to interact with local students	Not at all	9	10	9
	Very little	13	15	14
	Some	27	27	27
	Quite a bit	26	24	25
	Very much	25	25	25

Table 33: Teaching Quality item response category frequencies

Item and response categories		First year (%)	Later year (%)	All students (%)
Study well structured and focused	Not at all	1	2	1
	Very little	4	6	5
	Some	25	28	26
	Quite a bit	48	44	46
	Very much	22	20	21
Study relevant to education as a whole	Not at all	1	1	1
	Very little	3	4	4
	Some	23	24	23
	Quite a bit	44	42	43
	Very much	30	29	29
Teachers engaged you actively in learning	Not at all	1	2	2
	Very little	6	8	7
	Some	29	30	29
	Quite a bit	44	41	42
	Very much	21	21	21
Teachers demonstrated concern for student learning	Not at all	2	3	3
	Very little	8	10	9
	Some	30	30	30
	Quite a bit	39	37	38
	Very much	21	20	21
Teachers provided clear explanations on coursework and assessment	Not at all	1	2	2
	Very little	6	7	7
	Some	26	27	27
	Quite a bit	43	40	41
	Very much	25	24	24
Teachers stimulated you intellectually	Not at all	1	2	2
	Very little	6	7	7
	Some	27	27	27
	Quite a bit	41	39	40
	Very much	26	25	25
Teachers commented on your work in ways that help you learn	Not at all	3	5	4
	Very little	13	14	14
	Some	32	32	32
	Quite a bit	34	32	33
	Very much	18	17	18
Teachers seemed helpful and approachable	Not at all	1	2	2
	Very little	5	6	6
	Some	24	25	25
	Quite a bit	39	37	38
	Very much	31	29	30
Teachers set assessment tasks that challenge you to learn	Not at all	1	2	1
	Very little	3	5	4
	Some	20	23	22
	Quite a bit	45	43	44
	Very much	30	28	29
Quality of teaching	Poor	2	4	3
	Fair	13	16	15
	Good	53	51	52
	Excellent	32	28	30
Quality of entire educational experience	Poor	3	5	4
	Fair	15	19	17
	Good	53	51	52
	Excellent	30	25	28

Table 34: Student Support item response category frequencies

Item and response categories		First year (%)	Later year (%)	All students (%)
Experienced efficient enrolment and admissions processes	Not at all	4	6	5
	Very little	9	11	10
	Some	26	27	27
	Quite a bit	37	34	36
	Very much	24	22	23
Induction/ orientation activities relevant and helpful	Not at all	8	15	11
	Very little	14	18	16
	Some	32	31	32
	Quite a bit	25	21	23
	Very much	21	16	18
Received support from university to settle into study	Not at all	8	17	13
	Very little	14	20	17
	Some	36	34	35
	Quite a bit	29	21	25
	Very much	13	9	11
Administrative staff or systems: available	Not at all	1	2	2
	Very little	5	8	7
	Some	27	29	28
	Quite a bit	42	39	40
	Very much	26	22	24
Administrative staff or systems: helpful	Not at all	2	4	3
	Very little	7	11	9
	Some	29	30	29
	Quite a bit	37	34	36
	Very much	24	21	23
Careers advisors: available	Not at all	5	7	6
	Very little	13	16	15
	Some	34	31	32
	Quite a bit	30	28	29
	Very much	19	19	19
Careers advisors: helpful	Not at all	6	9	8
	Very little	13	16	15
	Some	34	31	32
	Quite a bit	29	26	27
	Very much	19	18	19
Academic or learning advisors: available	Not at all	2	4	3
	Very little	8	11	10
	Some	30	30	30
	Quite a bit	36	33	35
	Very much	23	22	23
Academic or learning advisors: helpful	Not at all	3	5	4
	Very little	8	10	9
	Some	27	27	27
	Quite a bit	36	33	34
	Very much	26	25	25
Support services: available	Not at all	4	6	5
	Very little	11	13	12
	Some	30	30	30
	Quite a bit	31	29	30
	Very much	24	23	23
Support services: helpful	Not at all	5	7	6
	Very little	10	13	12
	Some	30	29	29
	Quite a bit	30	28	29
	Very much	25	24	24

Used university services to support study	Not at all	30	36	33
	Very little	20	20	20
	Some	25	23	24
	Quite a bit	16	14	15
	Very much	9	8	8
Offered support relevant to circumstances	Not at all	30	33	32
	Very little	20	22	21
	Some	26	25	26
	Quite a bit	14	12	13
	Very much	10	9	9
Received appropriate English language skill support	Not at all	25	29	27
	Very little	12	14	13
	Some	24	23	24
	Quite a bit	19	18	18
	Very much	20	16	18

Table 35: Learning Resources item response category frequencies

Item and response categories		First year (%)	Later year (%)	All students (%)
Quality of teaching spaces	Poor	2	3	3
	Fair	10	14	12
	Good	45	46	45
	Excellent	44	37	40
Quality of student spaces and common areas	Poor	4	8	6
	Fair	17	21	19
	Good	43	43	43
	Excellent	35	28	32
Quality of online learning materials	Poor	3	4	3
	Fair	13	16	15
	Good	45	46	45
	Excellent	40	34	37
Quality of computing/IT resources	Poor	3	6	5
	Fair	16	19	18
	Good	46	45	46
	Excellent	35	30	32
Quality of assigned books, notes and resources	Poor	3	4	4
	Fair	17	20	19
	Good	50	50	50
	Excellent	30	26	28
Quality of laboratory or studio equipment	Poor	2	5	4
	Fair	13	18	15
	Good	47	46	47
	Excellent	38	31	34
Quality of library resources and facilities	Poor	2	3	3
	Fair	9	12	11
	Good	41	43	42
	Excellent	48	42	44