MINUTES OF A MEETING OF THE TEACHING AND LEARNING COMMITTEE HELD ON
THURSDAY, 9th MAY 2013

PRESENT
Deputy Vice-Chancellor (Education) (Winthrop Professor Alec Cameron) - Chair
Chair of the Academic Board (Winthrop Professor John Cordery)
Dean of Coursework Studies (Winthrop Professor Grady Venville)
Director, Centre for the Advancement of Teaching and Learning (Winthrop Professor Denise Chalmers)
University Librarian and Director (Information Management) (Dr Mary Davies)
President, Guild of Undergraduates (Mr Cameron Barnes)
Nominee of the President, Postgraduate Students’ Association (Mr Jarrad Bothe)
Chair of each Faculty Teaching and Learning Committee or Dean of Faculty or nominee:
  UWA Business School (Winthrop Professor Philip Hancock) – Deputy Chair
  Faculty of Education (Winthrop Professor Helen Wildy)
  Faculty of Engineering, Computing and Mathematics (Professor Gia Parish)
  Faculty of Law (Associate Professor Meredith Blake)
  Faculty of Medicine, Dentistry and Health Sciences (Professor Sandra Carr)
  Faculty of Science (Winthrop Professor Brendan Waddell)
Executive Officer (Ms Sue Smurthwaite)

BY INVITATION (STANDING INVITEES)
Dr Sato Juniper, Graduate Research and Scholarships Office
Dr Greg Marie, Institutional Research Unit (IRU)
Dr Judy Skene, Student Services
Mr Brian Greene, Information Services
Professor Sally Sandover, Regional Programs
Ms Fiona Birt, International Centre

STANDING OBSERVOR
Ms Sally Jackson, Administrative Officer, Academic Policy Services

APOLOGIES
Faculty of Architecture, Landscape and Visual Arts (Winthrop Professor Simon Anderson)
Faculty of Arts (Dr Neil O’Sullivan)
Faculty of Engineering, Computing and Mathematics (Professor Cara MacNish)
Nominee of the Dean of the School of Indigenous Studies (Assistant Professor Mel Thomas)
Mr Kelly Smith and Ms Milly Ingate, International Centre
Mr Mike Shearer, Head of College (Trinity)

WELCOME
The Chair welcomed all members and invitees to the meeting.

DECLARATIONS OF POTENTIAL FOR CONFLICT OR PERCEIVED CONFLICTS OF INTEREST
No declarations for potential or perceived conflicts of interest were recorded.

1. MINUTES – Ref: F12154

RESOLVED – 8
that the minutes of the Teaching and Learning Committee meeting held on 4th April 2013 be confirmed.

2. UNIVERSITY POLICY ON SERVICE LEARNING – REF: F49009
Members noted that the University Policy on Service Learning was now available and that service learning would be launched towards the end of May 2013. Further information was available via the Curriculum Management website.
3. **UWA EDUCATION FUTURES PROJECT – REF: F45719**

At its last meeting the Committee had considered the next steps for the UWA Education Futures Project, which had been established within the context of the UWA Futures Paper disseminated by the Vice-Chancellor in September 2012, in particular the Education related proposals.

Members had further noted that a small working party, convened by Winthrop Professor Grady Venville, had been formulated to develop a brief narrative which would provide an opening point for engagement with stakeholders – both internal and external to UWA. The paper was intended to define some common elements that were characteristic of a UWA education and would underpin the future vision. A draft paper “UWA Education Futures – Vision Statement” was now before the Committee for its consideration.

Thanks and appreciation for work to date was extended by both the Chair and the Convener to members of the Working Party, namely Grady Venville, Phil Hancock, Brendan Waddell and Denise Chalmers, and also the whole Committee by virtue of their input at the last meeting. At the Chair’s invitation the Convener introduced the paper outlining a few salient points and referred members to the three broad issues raised in the agenda, as follows:

1. Are these eight aspects of the UWA Education Futures the most critical and appropriate at this time? Do we need more or less? What additions would be appropriate, what could we remove?
2. Is the vision sufficiently ambitious or too ambitious with 2018 as a goal?
3. Do we need to include examples of pedagogy for each aspect? If yes, should we include exemplars from within the University and/or national or international examples?

Wide ranging discussion ensued and the following general themes emerged:

- The context for the paper may need further clarity before dissemination to stakeholders, in particular external. It was noted that the context (as defined at the last Teaching and Learning Committee meeting) incorporated the University’s broad vision and mission, in particular to be in the top 50 universities by 2050, but at the detailed level was intended to focus on the proposed review of pedagogy, as outlined in the UWA Futures Paper.
- It was suggested that the qualities associated with the top 50 universities should be researched and considered as a backdrop to the education vision, and, in response, it was noted that the University’s Teaching and Learning Committee had commissioned a paper on this issue in 2008, which had been part of the package of background papers available to the working party, namely “the Educational Attributes of some of the World’s top 50 Universities – A Discussion Paper”. There were two trains of thought regarding these attributes, whether to replicate or digress, and it was generally agreed that, although it was helpful to be cognisant of other top universities’ attributes, it was a preference for UWA to forge its own identity based on its mission, strengths and vision.
- In general the Committee agreed with the eight dimensions, but further agreed that these could be compressed eventually into possibly five dimensions, but that it was important at this discussion stage to retain the current breadth of the paper as the intent was as a discussion starter. It was agreed that each dimension should be revisited to ensure that the full terms of reference of the UWA Education Futures Project were incorporated, or in places made explicit. Examples provided included size and structure of classes and cohorts, and skills of teaching and support staff. It was also suggested that some of the traits of new courses should be more explicit, including concepts such as global, breadth and depth, service learning, communication and research skills.
- In answer to a query raised by the Convener of the Working Party, members agreed that campus facilities should be part of this paper where they impacted on teaching and learning, especially as the UWA environment was seen as an asset.

In closing discussion at the broad level, the convener posed a question to the Committee as to whether there should be a theme to the paper. An example was given whereby James Cook University (JCU) has an overarching tropical theme which guides its teaching, learning and research. Should UWA adopt a theme, possibly around ‘connectedness’ bearing in mind UWA’s isolated global position and connections at the local, national and international levels. It was agreed that broad issues, such as global, should be pervasive through

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1 Executive Officers Note – as requested at the meeting the package of background papers which provided context for the Vision Statement is attached (Attachment A), including the Educational Attributes of some of the World’s top 50 Universities – A Discussion Paper (Attachment B).
the paper, and that the Working Party might explore the concept of a theme, but that it might be more appropriate at the University-wide level, for example the development of the University’s strategic plan/direction, given that this review was focussed on the education portfolio.

The Chair then invited members to break out into small discussion groups that had been established as follows:

<table>
<thead>
<tr>
<th>Group/Facilitator</th>
<th>Categories</th>
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<tr>
<td>Group 1 – Grady Venville</td>
<td>Scholarship of Teaching, Experiential Learning</td>
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<tr>
<td>Group 2 – Phil Hancock</td>
<td>Integrated Learning Technologies, Rich Campus Learning Environment</td>
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<tr>
<td>Group 3 – Brendan Waddell</td>
<td>Research/Teaching Nexus, Academic Citizenship</td>
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<tr>
<td>Group 4 – Denise Chalmers</td>
<td>Inspirational, Challenging and Engaging Teaching and Learning Activities, Collaboration in program design and delivery</td>
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The aim of the breakout session was to review and possibly re-nuance the vision statements, and add, subtract or amend the associated issues. It was agreed that examples or enablers would be considered and incorporated at a later date, if deemed appropriate.

Each facilitator reported back to the meeting and confirmed that the eight dimensions would be amended by the working party in accordance with discussion.

In addressing the next step, the Chair advised that he would be meeting with the Working Party to develop the next iteration of the paper with the intent that it be considered at the next meeting of the Teaching and Learning Committee (6th June 2013) and then disseminated to relevant stakeholders, internal and external, by way of a range of communication methods including online social media, workshops/focus groups, in-committee discussion and open forums.

In closing discussion the Chair thanked all members for their input to this important process.

4. NEXT MEETING
Members noted that the next meeting of the Teaching and Learning Committee would be held on Thursday, 6th June 2013 at 2.00pm in the Senate Room. The cut-off date for submission of items for the Committee’s agenda was Thursday, 23rd May 2013.
### Package of Background and Context Papers for the Working Group – UWA Education Futures Project:

<table>
<thead>
<tr>
<th>Document</th>
<th>Web Link</th>
<th>Document length</th>
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<tbody>
<tr>
<td>UWA Annual Report (including significant issues and trends)</td>
<td><a href="http://annualreport.publishing.uwa.edu.au/">http://annualreport.publishing.uwa.edu.au/</a></td>
<td>4 sections</td>
</tr>
<tr>
<td>Educational Principles</td>
<td><a href="http://www.teachingandlearning.uwa.edu.au/staff/principles">http://www.teachingandlearning.uwa.edu.au/staff/principles</a></td>
<td>1 page</td>
</tr>
<tr>
<td>The Educational Attributes of some of the World’s top 50 Universities – A Discussion Paper (Commissioned by the Teaching and Learning Committee)</td>
<td>Copy attached.</td>
<td>140 pages</td>
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<tr>
<td>Future UWA Enrolment Profile (referred to Senate and Academic Board – 2013)</td>
<td><a href="http://committees.intranet.uwa.edu.au/__data/page/42761/Att_C_Future_UWA_Student_Profile_-_Senate_Feb_2013.pdf">http://committees.intranet.uwa.edu.au/__data/page/42761/Att_C_Future_UWA_Student_Profile_-_Senate_Feb_2013.pdf</a></td>
<td>34 pages</td>
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2nd April 2013 - Academic Policy Services
The University of Western Australia
May 2008

THE EDUCATIONAL ATTRIBUTES OF SOME OF THE WORLD’S ‘TOP 50’ UNIVERSITIES – A DISCUSSION PAPER

Dr Carolyn Daniel
(Research Associate, Education Policy)

Members of the Teaching and Learning Committee’s Achieving International Excellence Working Party

Nikolas Barron (Guild President)
Daniel Bond (President, Postgraduate Students’ Association)
Bronwyn Crowe (former President, Postgraduate Students’ Association)
Dr Carolyn Daniel (Research Associate, Education Policy)
David de Hoog (former Guild President)
Brian Greene (Manager, Strategy and Architecture, Information Technology Services)
Professor Geoff Hammond (Faculty of Life and Physical Sciences)
Professor Don Markwell (Deputy Vice-Chancellor (Education))
Janice Moffatt (Executive Officer)
Grant Revell (Faculty of Architecture, Landscape and Visual Arts)
Associate Professor Sally Sandover (Coordinator, Regional Programs)
Stephen Sheeley (Senior Lecturer, eLearning and Higher Education, CATL)
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Preface

This discussion paper has been prepared by Dr Carolyn Daniel for a working party (the ‘Achieving International Excellence Working Party’) of the University of Western Australia’s Teaching and Learning Committee.

By discussing the educational attributes of the world’s leading universities, it is intended to stimulate discussion within and beyond the University about what UWA needs to do in its educational activities to achieve its goal of becoming one of the ‘top 50 universities in the world in 50 years’. That goal exists, not for its own sake, but because it helps this already-excellent university to focus on offering the very best student learning experience, and undertaking the very best research and service, it possibly can.

This paper is limited to the educational activities of universities – those focussed on the student learning experience – and does not, except in passing, discuss the areas (which are also crucially important) of research, research training, service, and community engagement activities of universities.

It is obvious to me from visits to such universities as the National University of Singapore, the University of Hong Kong, and Fudan University in Shanghai that they, and many other universities around the world are, like UWA, focussing hard on what they can learn from the world’s highest-ranked universities about how to enhance their educational activities, and are working hard to implement what they have learnt – thereby significantly and continually improving the quality of their students’ education.

As you will see, this paper is written by Dr Daniel as a ‘conversation starter’, and you are invited to be part of the conversation by providing comments to the Achieving International Excellence Working Party (contact details are at the end of the paper). The paper will also be discussed in other UWA committees. This conversation and discussion will undoubtedly help to shape future University planning and action, including assisting in preparation of UWA’s Operational Priorities Plan for 2009-2013.

In inviting your comments, I would also like to thank Dr Daniel most warmly for her excellent work on this discussion paper, and my colleagues on the working party for all they have already contributed in such collegial and open-minded ways.

Don Markwell
Deputy Vice-Chancellor (Education)
5 May 2008
The University of Western Australia is focussed upon ‘achieving international excellence’, and it has set itself the goal of being genuinely one of the top 50 universities in the world within 50 years. By the time of its centenary in 2011-13, it aims to be one of the top 100 universities in the world.

But what does it mean to be ‘one of the top 50 universities in the world’? And what does UWA, or any other university, need to do to achieve such a goal? Such questions are matters of increasing discussion within universities in Australia and around the world, and answers to them – explicit or implicit – will have a major influence on UWA’s plans and performance over the years ahead.

First and foremost this paper is intended to be a conversation starter. It seeks specifically to contribute to discussion of what it means to be ‘one of the top 50 universities in the world’ by focussing on the educational attributes of a range of ‘top 50’ universities. The majority of the examples given are derived from the top 20 in the world according to rankings produced by Shanghai Jiao Tong University (SJTU) and the Times Higher Education Supplement (THES), with some attention given to those ranked 30-50. Also of interest to UWA, and included here, are some of the University’s partnership universities together with a very small number of institutions which may not be so highly ranked but which have taken a particularly interesting and innovative approach to an issue covered in this paper.

Naturally, every one of the topics covered in this paper could have been discussed at far greater length; it has been necessary to condense and consolidate a lot of information. Much of what is written here may perhaps seem ‘obvious’ to people familiar with the particular topic being discussed. Nevertheless it is hoped that the examples given may be a useful and even stimulating basis for ongoing discussion of the attributes, developments and issues found in the top 50 universities in the world.

This is not essentially a quantitative paper and the preparation of it has not involved an audit of UWA. Nothing in this paper is intended to imply criticism of what is being done at UWA, which already does many of the things, or has some of the attributes, described in Section 2 of this paper at least to some extent. Instead, this discussion paper will hopefully spark a conversation about the attributes of the world’s highest-ranking universities, and suggest and generate ideas relating to what aspects of its performance UWA should review, how well it functions in a range of areas and how it could improve further. It is anticipated that this will lead to the development of specific ideas for action, which is why the list of recommendations contained in this paper is relatively short.

Very many universities around the world are actively engaged in strategic planning and other reviews focussed on enhancing their overall position, including the quality of their research, teaching and service. Importantly, many are sharply focussed on what they can learn from the world’s leading universities as they work, as vigorously as they can, to enhance their offering to students and their research. Many of these universities make key planning, review and other documents readily available,
especially on their websites. Such documents have been extensively consulted and are quoted in this paper.

Continued attention to such strategic reviews and other initiatives at leading universities around the world would be valuable to UWA as it works to continue raising its own quality and international standing. One of the recommendations contained in this paper is that UWA should continue to conduct ongoing reviews of the developments and innovations taking place at universities and colleges around the world.

Immediately obvious from the global rankings is the bias toward smallness in size of institutions in the top twenty. The question is: how do institutions ranked 30-50 get where they are? More research is needed to look in detail at institutions in the 30-50 range specifically and to analyse what they have achieved and what initiatives they have in place to cope with things such as larger class sizes, for example. It is also overwhelmingly obvious that the majority of institutions at the very top of the rankings are largely residential. In the US and UK most students go away to university and live in colleges, or ‘digs’ nearby, whereas in Australia most (although far from all) students live at home and commute to university. Over time, the proportion of Australian students ‘in residence’ on campus may rise; in recent years there appears to have been an increase in recognition of the value of what residential colleges can contribute to the educational experience of university students.

The differences in the community culture between the largely residential and the commuter university are significant. At largely residential universities students may more readily be drawn from national and international pools. In this case universities are more likely to see themselves as having state-wide, national and international responsibilities. Although the growth of international students in Australian universities over the last 15 years has been very significant, most Australian universities draw the majority of their students from the cities or regions in which they are located, and there is relatively little movement of students between states. What movement there is, however, is important and growing.

It is important to point out that the top-ranked universities are not perfect, nor necessarily better than lesser-ranked institutions in every aspect. Aspiring universities are often leaders in innovation – each one knows it has to lift its game, and many are working hard to achieve international recognition. These universities may provide especially valuable ideas and examples for UWA.

This paper is offered in the spirit of encouraging discussion about these and related issues.

Dr Carolyn Daniel
As part of the ambition of ‘achieving international excellence’, UWA has increasingly presented itself as aspiring to be one of the ‘top 50’ universities in the world within 50 years.

In the context of this discussion paper, however, it can be problematic to describe a particular university as one of the ‘top’ or the ‘best’ universities in the world. To do so may be interpreted as suggesting that a two-tier hierarchy exists: at the top is a relatively small, elite and exclusive group and below are all the other universities – a long way from achieving ‘top’ status.

In reality, while there is much of great importance to be learned from the most highly-ranked universities in the world, there is also a great deal to be learned from those universities who may not be as well-endowed with funds, whose reputations are not secured by their histories and by multiple Nobel prizes, and who are striving to achieve true excellence in higher education while managing far larger student populations.

‘Excellence’ is a word that is becoming tarnished with overuse. Taylor and Braddock (2007) make a useful distinction between ‘genuine ranking systems’ and consumer reports in defining university excellence. The former ‘sets out specifically to measure the excellence of universities’ while the latter is ‘merely an aid to the potential “customer” – one that sets out to rate universities according to whatever criteria might interest potential students’ and may range from things such as the ‘vibrancy of university social life and the quality of campus eateries to the university’s standing as a centre of teaching and research’.

A university’s primary functions are basically to undertake research and to educate (to which is often added a third function, of ‘service’ or ‘knowledge transfer’ or ‘community engagement’ or the like). An excellent university performs those functions well – its teachers are good at teaching, in a rich student learning environment, and its researchers are good at original research. (These functions of course depend on being well supported by funding models and governance structures and process.) Teaching and learning, and research, are the fundamental criteria and capture, according to Taylor and Braddock, the essence of what is generally meant and understood by the term ‘university excellence’. Taylor and Braddock argue that:

ranking systems should be based on a reasoned account of what university excellence consists of, seeking a balance of criteria to represent this overall conception, while limiting the criteria for excellence as far as possible to those that are relatively

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objective. These requirements are [however] especially difficult to meet in the case of international ranking systems.²

Meeting these requirements to produce coherent international ranking systems is particularly difficult because of the diversity of institutions globally, and the problems of producing workable cross-institutional and international comparisons.

Widely published global rankings of universities only started in 2003 but they already feature prominently in public discussion, government thinking, marketing strategies, and university development strategies³ and they increasingly play a part in student and staff choices.⁴ Despite the shortcomings of the main international ranking schemes, they are still being interpreted, according to Williams, as ‘measuring the international standing of an institution’.⁵

Marginson argues that, although rankings are ‘not the only game in town’, they are ‘a big ticket game and sooner or later they connect to most other kinds of activity in higher education’, including ‘market share, revenues, status (national and institutional), the power to attract [staff and student] talent, the incentives governing university executives, the goals of academic work, [and] the nature of research’.⁶

Notwithstanding their methodological idiosyncrasies, the international rankings of universities which have attracted greatest attention are those of:

- the Shanghai Jiao Tong University Institute of Higher Education (SJTU),
- The Times Higher Education Supplement (THES), and
- Newsweek⁷.

These rankings are subject to many criticisms, and can at best rank universities on the basis of the criteria and data chosen. The Shanghai Jiao Tong ranking is purely a research ranking. The THES ranking relies heavily on a ‘peer review’ survey with a startlingly low (1%) response rate. The Newsweek ranking combines elements of both the SJTU and THES rankings. One of the major problems of rankings is how to compare institutions of different size, and what allowance to make for size. Readers interested in discussions of the criteria, methodologies, and value of these rankings may wish to refer to the growing literature on this.⁸

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² Ibid, p. 249.
⁵ Ibid.
⁶ Marginson, ibid.
International rankings of universities should also be considered alongside the growing number of national rankings (again, whatever their own methodological strengths and flaws). These are often aimed at guiding students in their choice of universities or colleges. Rankings which have attracted attention include:

- in the US: the *US News and World Report* rankings\(^9\) and the *Washington Monthly* rankings\(^10\)
- in Australia: the Melbourne Institute index\(^11\), and
- in the UK: *The Times Good University Guide*\(^12\).

Tables showing the rankings from these international and national sources are in the appendix to this paper.

For the purposes of this paper, it may be sufficient simply to consider the universities that commonly appear highly-placed in the rankings. The following table takes the SJTU, THES and *Newsweek* global rankings and creates an average ranking. The final column re-ranks universities according to their average ranking. Thirty of the top 50 are US universities, eight are UK institutions, three are Japanese, three Canadian, two Australian, one French, one German, one Dutch and one Swiss.

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\(^12\) [http://www.timesonline.co.uk/tol/life_and_style/education/good_university_guide/article2235223.ece](http://www.timesonline.co.uk/tol/life_and_style/education/good_university_guide/article2235223.ece)
Table 1: The ‘top 50’ universities

<table>
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<tr>
<th>Institution</th>
<th>Country</th>
<th>SJTU 2007</th>
<th>THES 2007</th>
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<td>56</td>
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<td>63</td>
<td>61.33</td>
</tr>
</tbody>
</table>
The following universities appear in the top 50 of one or more of the global ranking schemes used in Table 1, but not in all three:

- University of Amsterdam (THES 48)
- University of Auckland (THES 50)
- University of California, Davis (SJTU 43)
- University of California, Irvine (SJTU 45)
- University of California, San Francisco (SJTU 18, Newsweek 9)
- University of California, Santa Barbara (SJTU 35)
- Chinese University of Hong Kong (THES 38)
- University of Copenhagen (SJTU 46)
- Ecole Polytechnique (THES 28, Newsweek 43)
- University of Geneva (Newsweek 32)
- Hong Kong University (THES 18)
- University of Illinois at Urbana Campaign (SJTU 26: THES 48)
- London School of Economics (Newsweek 34)
- University of Minnesota – Twin Cities (SJTU 33)
- Monash University (THES 43)
- University of New South Wales (THES 44)
- University of Paris 6 (SJTU 39)
- Peking University (THES 36)
- University of Queensland (THES 33)
- Rockefeller University (SJTU 30)
- Rutgers University (SJTU 47)
- National University of Singapore (THES 33, Newsweek 36)
- University of Southern California (SJTU 50)
- Swiss Federal Institute of Technology (Newsweek 26)
- University of Sydney (THES 31, Newsweek 50)
- University of Texas Southwestern Medical Center at Dallas (SJTU 39)
- Tsing Hua University (THES 40).

Such rankings are far from ideal, and their imperfections are widely discussed. An ‘ideal’ ranking system would, for example, include measures of the excellence of the student learning experience. However, the quality of education, or of teaching and learning, is notoriously difficult to assess, let alone compare between institutions. While there has been discussion of the development of national and international measures of the ‘value added’ by educational institutions (including through the OECD), the problem of assessing educational outputs has remained essentially unresolved. In some cases students’ satisfaction with their education is used as a proxy for the quality of the education provided, but clearly this too is problematic.
Although it is not straightforward, it is easier to measure and compare inputs to the educational process. These measures are often used to rank institutions by the quality of education they offer. Class sizes can be measured, for example, and, Taylor and Braddock argue, they ‘give at least some indication of teaching quality’. Taylor and Braddock suggest that another ‘plausible indicator of students’ active participation in the learning process is their library borrowing practices’. Williams (2008) disagrees and argues that both student/staff ratios and library holdings specifically become ‘less useful with technological change’. Using library borrowings or holdings becomes problematic with increasing numbers of texts now being available electronically.

Student/staff ratios and class sizes are often used as one indicator of quality education – though this gives no indication of what actually goes on inside or outside the classroom. In comparing large classes with smaller classes it is the issue of interaction – between teachers and students, and between students and students – which is crucial and which is generally considered to be more likely to occur in a small class and less likely in a larger class. According to Gilbert, ‘active participation facilitates learning better than passive listening … Instruction which is intimate, interactive and investigative produces the most positive educational outcomes … [and] the importance of interaction, participation and involvement for student learning are widely recognized’. The chances for extensive student/staff interaction are greater in smaller classes but having smaller classes does not guarantee that quality teaching and learning will take place.

Williams argues that ‘resources devoted to teaching and research training’ would ‘probably [be] the best input measure’ but it would require ‘some standardisation of budgets to make it operational’. He further argues that while output measures such as progression of undergraduates to postgraduate study and the placement of PhD graduates have merits as indicators of international academic standing, these are only useful if they satisfy statistical standards in design and responses. He believes that initiatives from international agencies such as the OECD or World Bank would be required to enable real international comparisons of the quality of graduates. Williams also points out that there is one fundamental problem relating to measuring the quality of graduates that is always going to be difficult to overcome: ‘the quality of graduates will be reflected in their development over several decades, but this reveals little about the current quality of teaching’.

Taylor and Braddock suggest that further measurable criteria of teaching/learning activities need to be investigated but that teaching excellence would have to be ‘given its due weight in an ideal ranking system’. They also argue for ‘scores for teaching and research output on a department-by-department basis’.

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13 Taylor and Braddock, ibid, pp. 257-8
15 The OECD is currently initiating studies of graduate quality. See, for example, http://www.oecd.org/dataoecd/55/31/38006954.pdf
16 Williams, ibid, p. 6.
17 Taylor and Braddock, ibid.
There are a number of activities being undertaken around the world attempting to produce reliable measures of educational and specifically teaching quality, including student evaluation of courses and graduate destinations, and measures of student engagement. These include the following:

- The OECD Education Directorate’s Assessment of Higher Education Learning Outcomes project (AHERO) (ie "PISA for universities")
- The Carrick Institute’s Teaching Quality Indicators (TQI) project\(^\text{18}\)
- The Learning and Teaching Performance Fund (LTPF)\(^\text{19}\) which makes use of
- The Course Experience Questionnaire (CEQ)\(^\text{20}\) and the Graduate Destination Survey (GDS)\(^\text{21}\)
- The Higher Education Funding Council for England’s National Student Survey\(^\text{22}\)
- The US National Survey of Student Engagement (NSSE)\(^\text{23}\)
- The Australasian Survey of Student Engagement (AUSSE)\(^\text{24}\)
- University of California Undergraduate Experience Survey (UCUES)\(^\text{25}\)

The discussion which follows seeks to draw on the educational attributes of those universities which are typically regarded as being in ‘the top 50’ internationally, and also on others which are engaged in educational activities of particular interest or promise.

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\(^\text{19}\) [www.dest.gov.au/sectors/higher_education/policy_issues_reviews/key_issues/learning_teaching/ltpf/default.htm](http://www.dest.gov.au/sectors/higher_education/policy_issues_reviews/key_issues/learning_teaching/ltpf/default.htm)


\(^\text{22}\) [http://www.hefce.ac.uk/learning/nss/ ; http://www.hefce.ac.uk/learning/qual/tqi.asp](http://www.hefce.ac.uk/learning/nss/ ; http://www.hefce.ac.uk/learning/qual/tqi.asp)

\(^\text{23}\) [http://nsse.iub.edu/pdf/nsse_benchmarks.pdf](http://nsse.iub.edu/pdf/nsse_benchmarks.pdf)


\(^\text{25}\) [http://www.universityofcalifornia.edu/studentsurvey/about/usage.html](http://www.universityofcalifornia.edu/studentsurvey/about/usage.html)
1. Mission statements of some of the ‘top 50’ institutions

Massachusetts Institute of Technology

The mission of MIT is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century. The Institute is committed to generating, disseminating, and preserving knowledge, and to working with others to bring this knowledge to bear on the world’s great challenges. MIT is dedicated to providing its students with an education that combines rigorous academic study and the excitement of discovery with the support and intellectual stimulation of a diverse campus community. We seek to develop in each member of the MIT community the ability and passion to work wisely, creatively, and effectively for the betterment of humankind.26

Yale College, Yale University

The mission of Yale College is to seek exceptionally promising students of all backgrounds from across the nation and around the world and to educate them, through mental discipline and social experience, to develop their intellectual, moral, civic and creative capacities to the fullest. The aim of this education is the cultivation of citizens with a rich awareness of our human heritage to lead and serve in every sphere of human activity.27

University of Toronto

The University of Toronto is committed to being an internationally significant research university, with undergraduate, graduate and professional programs of excellent quality.28

Cambridge University

The mission of the University of Cambridge is to contribute to society through the pursuit of education, learning, and research at the highest international levels of excellence.29

Australian National University

The University’s mission is to be one of the world’s great research institutions, distinguished by outstanding teaching, guiding students to the frontiers of knowledge and the best standards of scholarship.30

27 http://www.yale.edu/accred/standards/s1.html
28 http://www.utoronto.ca/govenc/pap/policies/mission.html# Toc468159530
29 http://www.admin.cam.ac.uk/uni/mission.html
California Institute of Technology

The mission of the California Institute of Technology is to expand human knowledge and benefit society through research integrated with education. We investigate the most challenging, fundamental problems in science and technology in a singularly collegial, interdisciplinary atmosphere, while educating outstanding students to become creative members of society.31

Columbia University

Columbia University is one of the world's most important centers of research and at the same time a distinctive and distinguished learning environment for undergraduates and graduate students in many scholarly and professional fields. The University recognizes the importance of its location in New York City and seeks to link its research and teaching to the vast resources of a great metropolis. It seeks to attract a diverse and international faculty and student body, to support research and teaching on global issues, and to create academic relationships with many countries and regions. It expects all areas of the university to advance knowledge and learning at the highest level and to convey the products of its efforts to the world.32

Highlights:

- The world’s most highly-ranked universities aspire to be leaders in research and to achieve excellence in scholarship and teaching
- They publicly recognise their responsibility to society locally, nationally and globally
- Many universities also acknowledge their responsibility for advancing social and economic mobility and opportunity for students

In common with most universities, the world’s highest-ranking institutions publicly recognise and aim to pursue excellence in all that they do. In common with UWA, they also seek to be leading research universities, achieving the highest levels of distinction in scholarship and in the transmission of knowledge through the education and training of undergraduate and postgraduate students.

World-class universities recognise the private and public benefit they confer and their social responsibility not only to local and national communities but also, increasingly, to the international community.

Additionally, among the world’s top-ranking universities there is widespread acknowledgement of the responsibility for advancing the ideal of equal opportunity by acting as engines of social and economic mobility. Princeton’s President, Shirley Tilghman, writes:

A college education is the most effective way I know of transcending the distinctions—whether of ancestry, wealth, or race—that fragment our society. … by addressing the under-representation of students from low- and moderate-income

31 http://www.caltech.edu/at-a-glance/
32 http://www.columbia.edu/about_columbia/mission.html
families, we strengthen the social and economic fabric of our nation and equip it to face our increasingly competitive global marketplace with confidence.33

2. ‘The right people’

2.1 Leadership

Jim Collins emphasises that ‘getting the right people on the bus, the wrong people off the bus, and the right people in the key seats’ is absolutely essential in the process of making a good organisation into a great one.34

Those striving for excellence recognise that the quality of an educational institution depends upon the quality of its teachers, researchers, administrators and leaders. In summarising what makes a good organisation into a great one, Collins places at the top of the list the essential idea that every organisation requires what he refers to as a ‘Level 5 leader’:

Level 5 leaders are ambitious first and foremost for the cause, the organisation, the work – not themselves – and they have the fierce resolve to do whatever it takes to make good on that ambition. A Level 5 leader displays a paradoxical blend of personal humility and professional will.35

Great educational institutions, like great businesses, need great leaders.

Ruth J. Simmons, President of Brown University, and Princeton’s President, Shirley Tilghman are two of eighteen people profiled in US News & World Report as ‘America's Best Leaders’ in 2007. ‘America’s Best Leaders’ is a collaboration between US News & World Report and the Center for Public Leadership at Harvard University’s John F. Kennedy School of Government; the honorees were selected by a committee of academic, government, business, and non-profit leaders convened by the Center. The committee defined a leader simply as a person who ‘motivates people to work collaboratively to accomplish great things’. They chose people who ‘excel in their chosen fields but … also embrace a concept of leadership as a broader societal responsibility’.36

Simmons, who comes from a very humble background, is a strong-minded crusader for diversity on campus and ‘the moral compass of the school she governs’.37 She has ‘personally recruited students’ to Brown and believes that ‘it’s probably the most important thing I can do on a national basis’.38

34 Jim Collins, 2005, Good to Great and the Social Sectors, p. 34.
35 Ibid.
37 Jodie Morse, ‘Campus Crusader’ http://www.time.com/time/magazine/article/0,9171,1000831,00.html?id=chix-sphere
Tilghman, who is a world-renowned scholar and leader in the field of molecular biology, is described as ‘welcoming and unpretentious’ and is ‘known also for being candid and intellectually tough’. According to Maxine Singer, president emeritus of the Carnegie Institution, Tilghman’s ‘leadership at Princeton … shows that not only will she ask the hard questions but she is ready to deal forthrightly with the [issues] they reveal.’

2.2. Academics and senior staff

Table 2: Academic staff demographics at leading universities

<table>
<thead>
<tr>
<th>University</th>
<th>Total Academic s</th>
<th>Full-time</th>
<th>Part-time</th>
<th>PhDs %</th>
<th>Men %</th>
<th>Women %</th>
<th>Minorities %</th>
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<td>99</td>
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</tbody>
</table>

*N/A figures not readily available

Highlights:

- Because they are generally well-funded and able to provide excellent facilities, many of the finest universities and colleges in the world are able to attract outstanding academic and general staff
- Being committed to excellence means being also committed to inclusiveness
- Many of the best universities in the world increasingly search worldwide to find the most talented staff
- Talented and/or well-known academic staff may be attracted to an institution by the promise of tenure
- Having ‘the right people’ on campus can lead to the formation of a vibrant intellectual and cultural community which in turn attracts more of the right people

39 Diane Cole, ‘Shirley Tilghman, Educator: from lab table to president’s chair’
In a briefing paper to staff, Vice-Chancellor Alan Gilbert at Manchester University states:

The presence of outstanding academic teachers, mentors and advisors is a defining characteristic of the finest undergraduate learning environments in the world. The universities that attract such people are all well-funded institutions, providing staff and students alike with excellent facilities. Whatever their geographical location, they all sustain thriving academic communities, and are foci for the vibrant intellectual and cultural life that grows up around such communities.41

Gilbert emphasises the importance of mentors and advisors, excellent facilities and the notion of community as well as outstanding academic teachers in the formation of the finest learning environments. (Mentoring and advising, resources and the promotion of a feeling of community on campus will be discussed separately and more fully presently.)

Acknowledging that Princeton’s academics are the ‘magnets that draw each year to campus the most talented students in the world’,42 Tilghman, like Gilbert, is highlighting the notion that having the ‘right people on the bus’ attracts more of the ‘right’ people. Harvard’s President, Drew Faust, is of the same mind:

we have an overriding interest in attracting to our community the most talented people we can find … We have made encouraging strides in recent years in opening our doors more widely to people of different backgrounds, different experiences, and different economic means. We have learned, more and more, that our commitment to excellence depends on a commitment to inclusiveness.43

In aligning inclusiveness and diversity with excellence, Faust is also in agreement with other university leaders who are now casting their nets across the world for the most talented prospective academic and administrative staff. (The importance of inclusiveness and diversity will be discussed in more detail later.)

Top quality academics and staff will be attracted to a university that not only has excellent facilities, as Gilbert states, but also has excellent, dedicated people. Collins’ research suggests that people join the bus because of who else is already on the bus.44

The tenure system prevalent in US universities means that new non-tenured academic staff must work for a number of years in assistant professor positions (typically five years) – on the tenure track – before they may be awarded tenure. Tenure may be awarded following a rigorous review of their work over an extended period. US

44 Collins, ibid. p. 42.
institutions use the tenure system to attract and retain talented or well-known scholars and, through the high stakes of the tenure decision, to create in staff who are on the tenure track, the drive to establish themselves. This arguably helps to create a culture of excellence within the university.\textsuperscript{45}

2.3 Students

\textit{Table 3: Quality of undergraduates at leading universities}\textsuperscript{46}

<table>
<thead>
<tr>
<th>Institution</th>
<th>% from State schools</th>
<th>Top 10% of their high school class</th>
<th>Top 25% of their high school class</th>
<th>SAT scores\textsuperscript{47}</th>
<th>A-levels AAB +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>65</td>
<td>95</td>
<td>100</td>
<td>1390-1590</td>
<td></td>
</tr>
<tr>
<td>Cambridge</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Yale</td>
<td>55</td>
<td>95</td>
<td>99</td>
<td>1390-1580</td>
<td>N/A</td>
</tr>
<tr>
<td>Caltech</td>
<td>70</td>
<td>88</td>
<td>97</td>
<td>1470-1570</td>
<td>99.8%</td>
</tr>
<tr>
<td>Oxford</td>
<td>53</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>MIT</td>
<td>71</td>
<td>97</td>
<td>100</td>
<td>1380-1560</td>
<td></td>
</tr>
<tr>
<td>Stanford</td>
<td>62</td>
<td>89</td>
<td>98</td>
<td>1340-1540</td>
<td></td>
</tr>
<tr>
<td>Columbia</td>
<td>49</td>
<td>93</td>
<td>98</td>
<td>1330-1540</td>
<td></td>
</tr>
<tr>
<td>Princeton</td>
<td>58</td>
<td>94</td>
<td>99</td>
<td>1370-1590</td>
<td></td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>85</td>
<td>98</td>
<td>100</td>
<td>1200-1450</td>
<td></td>
</tr>
<tr>
<td>Chicago</td>
<td>63</td>
<td>80</td>
<td>97</td>
<td>1320-1530</td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>52</td>
<td>94</td>
<td>99</td>
<td>1330-1530</td>
<td></td>
</tr>
<tr>
<td>Imperial College</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>AAB average</td>
</tr>
<tr>
<td>Cornell</td>
<td>N/A</td>
<td>84</td>
<td>97</td>
<td>1280-1490</td>
<td></td>
</tr>
</tbody>
</table>

The world’s leading universities attract and accept large numbers of high-quality students. Oxford University’s mission statement includes twenty-one long-term aims. One of these is ‘to continue to attract high-quality students … who are essential for the maintenance of the University’s academic standing’.\textsuperscript{48} The strategy of recruiting the best students not only maintains Oxford’s reputation, it also ensures the university produces high-quality graduates.

A commentator at the University of Auckland suggests a correlation between the quality of students being recruited and the quality of graduates produced by higher education institutions:

\textsuperscript{45} \url{http://en.wikipedia.org/wiki/Tenure}
\textsuperscript{47} The SAT scores are made up of a reasoning test and subject tests. The SAT Reasoning Test college entrance exam takes 3 hours and 45 minutes and measures the critical reading, mathematical, and writing skills students have developed over time. The SAT is scored on a scale of 200-800 and is usually taken by high school juniors and seniors. The test is given several times a year. The total score possible is 2400. The SAT Subject Tests are one-hour, mostly multiple choice subject tests designed to measure how much students know about a particular academic subject and how well they can apply that knowledge. Some colleges and universities require applicants to submit SAT Subject Test results; others use them as an additional indicator of academic achievement or as an indicator of where to place students in first-year classes. \textit{U.S. News & World Report Ultimate College Guide} 2008.
\textsuperscript{48} \url{http://www.ox.ac.uk/gazette/1998-9/supps/2_4484.htm#1Ref}
Top research universities overseas do everything they can to attract the very best students, including offering very generous fee and boarding scholarships, and accommodation. The bright young things they attract not only bring lustre to the institution through their achievements, but are more likely to go on to graduate school and become the thought leaders of the future.  

While admitting the obvious importance of educational value-adding, Alan Gilbert at Manchester nevertheless considers it ‘probably’ less important than quality at admission in driving quality at graduation. ‘Wonderful students flock to iconic institutions’, Gilbert argues, ‘and their presence there does much to make the reputation for excellence which first attracted them a self-fulfilling prophecy … Scholarly excellence is thus largely self-replicating’.  

This means that unless universities aspiring to be among the best in the world locate, attract, cultivate and secure the most talented people possible to enrol in its courses then it will most likely be unable to match the quality of graduates being produced by the leading universities in the world.

### 3. The curriculum

<table>
<thead>
<tr>
<th>Highlights:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• World-class and aspiring universities recognise that they must offer a curriculum that produces graduates who are not just career-ready but who also have broad knowledge across disciplines; leadership skills; cultural awareness; the capacity for lifelong learning; and who are active global citizens</td>
</tr>
<tr>
<td>• While many UK and Australian universities tend to stress vocational or professional training for undergraduate students, elite American universities generally advocate a liberal education</td>
</tr>
<tr>
<td>• There is some movement in the UK and in Australia toward broadening the scope of undergraduate degrees</td>
</tr>
</tbody>
</table>

In their statements of ‘graduate attributes’ or ‘educational principles’ many universities state that their curriculum must not only encourage academic excellence but also produce graduates who have a broad range of knowledge across disciplines; leadership skills; cultural awareness; and are active global citizens.

The ‘key skills’ agenda of employers (across a range of disciplines and around the world) presents the challenge of producing graduates not only with specialist skills but also the capacity for innovation and enterprise and, most specifically, lifelong learning.

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49 Commentary on issues in higher education and research: Office of the Vice-Chancellor, University of Auckland, August 2007, Issue 1: p. 2.  
49 http://www.auckland.ac.nz/uoa/fms/default/uoa/about/commentary/docs/commentary_issue_1.pdf  
50 Gilbert, Positioning the University of Manchester as a Premium Provider’, ibid: p. 3.  
51 See for example http://www.unimelb.edu.au/about/attributes.html
While the Australian and UK higher education systems generally involve many students taking professional or vocational undergraduate degrees, the most elite US universities generally require students to undertake a liberal arts undergraduate education, which is often followed by a professional/vocational postgraduate course.

There is some movement toward broadening the scope of the undergraduate curriculum in some universities in the UK and in Australia. In Australia the ‘Melbourne Model’ has some of the characteristics of a liberal arts education and at Manchester Alan Gilbert repeatedly emphasises broadening undergraduate learning and the benefits of a liberal education:

undergraduate education is about breadth as well as depth, about acquiring intellectual discipline as well as intellectual passion, and unless passionate preoccupation with a particular – and often quite narrow – area of scholarship is combined with a much more synoptic view of a wider body of knowledge, the quality of undergraduate learning is prejudiced.\footnote{52}

Gilbert has produced a seven-point list of ‘The Purposes of Undergraduate Education’, which borrows directly from Derek Bok’s analysis in Our Underachieving Colleges. Gilbert understands that undergraduate curricula should:

- Develop critical thinking and higher order conceptual, reasoning and analytical skills
- Promote mastery of a discipline
- Challenge and equip students to confront personal values and make ethical judgements
- Prepare undergraduates for citizenship and leadership in diverse, global environments
- Broaden intellectual and cultural interests
- Prepare graduates for professional and vocational work, and
- Develop advanced skills of written and verbal communication.\footnote{53}

Gilbert’s list is quite similar to a number of universities’ statements of graduate attributes or educational principles, including UWA’s.

**3.1 Liberal education**

**Highlights:**

- Many leading universities and colleges in the world are committed to the notion of a liberal arts undergraduate education, which is seen by many as the best way to equip students for the rapidly-changing global environment in which they will live and work
- It is argued that a liberal arts education has significant social benefits
- Many universities outside the US are working to introduce some form of more liberal education

\footnote{52} Gilbert, ‘Positioning the University of Manchester as a Premium Provider’, ibid, p. 9.
\footnote{53} Ibid, p.18
Among the most highly ranked universities and colleges in the world there is a strong and widespread commitment to the notion of a liberal education for undergraduates.

A liberal education can be defined as:

a program of study designed to foster capacities of analysis, critical reflection, problem solving, communication, computation and synthesis of knowledge from different disciplines. Its goal is to provide students with an intellectual, historical, and social context for recognizing the continuity between the past and future and for drawing on the human capacity of reason to understand human experience, to question the values dimension of human enterprise, and to articulate the results of this process of thinking.54

A liberal education is seen by many to be one that is particularly well suited to preparing students for a changing world. Richard Levin, President of Yale, writes:

Liberal education exposes students to a variety of subjects and perspectives, giving them intellectual breadth as well as the depth that comes from concentration in a single discipline. Its object is not to convey any particular content, but to develop certain qualities of mind: the ability to sift through information to extract what is useful, to ask questions, to think critically and independently. Just as the largest social benefits derive from scientific research that is driven by a wide-ranging curiosity rather than a particular commercial objective, so, I would argue, the largest social benefits derive from a pedagogy that enlarges the power of students to reason and think creatively rather than master a specific body of knowledge.55

At Trinity College, Duke University, for example, the liberal arts undergraduate curriculum is designed to prepare students to cope with ‘the increasing pace of change, the growing fragmentation of knowledge, the increased frequency and intensity of encounters with other cultures, and the growing complexity of ethical choices’.56 Students ‘take courses in all areas of knowledge required for general education, but continues to emphasize the importance of attaining depth by coursework in the major’.57

MIT is similarly committed to the liberal arts ideal. It informs parents that it ‘is a research university committed to world-class inquiry in math, science and technology – but you may be surprised to learn that we require more liberal arts courses than many liberal arts institutions’. Even for its bachelor of science degree, students must complete a core requirement that is equally divided between science and mathematics, and the humanities, arts, and social sciences. The science/mathematics requirement includes chemistry, biology, physics, and calculus, as well as laboratory and science electives. The humanities, arts, and social sciences requirement must be fulfilled in three out of five categories: literary and textual

studies; language, thought, and value; the arts; cultures and societies; and historical studies. Students must also complete a four-subject communication requirement.\(^\text{58}\)

In the UK it can be argued that Oxford and Cambridge, where courses are ostensibly specialised, still offer a form of liberal education. Most Oxbridge graduates do not follow careers based on their undergraduate degrees. Even if courses may be thought to be vocational – such as law – they are presented in a broader context, with a focus on the development and mastering of intellectual skills rather than on preparation for a vocation. An apparently narrow academic study will for many students be broadened by their interaction with fellow students studying diverse disciplines in their colleges, and in extra-curricular activities which have long been a central part of student life in Cambridge and Oxford.\(^\text{59}\)

Professor Martha Nussbaum, who has taught at Harvard, Brown and Oxford universities and is now at the University of Chicago, claims that:

Outside the United States, many nations whose universities do not include a liberal-arts curriculum are now striving to build one: they acknowledge its importance in crafting a public response to the fear and suspicion in increasingly pluralized societies. I’ve been involved in such discussions in the Netherlands, Sweden, Germany, Italy, India and Bangladesh.\(^\text{60}\)

Some Asian universities are also showing interest in liberal arts curricula and in the residential college system. In a recent speech the President of the National University of Singapore, Shih Choon Fong, spoke of borrowing from the traditions of liberal arts colleges, such as Claremont College in the US, in the development of a University Scholars Program and NUS’s University Town:

One dimension where NUS has taken a leaf from liberal arts colleges such as the Claremont Colleges is our University Scholars Program (USP). Like Claremont-ers, our USP students take courses spanning the arts and humanities, social and natural sciences, business and technology. The collision of ideas and concepts from different disciplines promotes a spirit of inquiry and enterprise, enabling them to think outside of the box, just like Claremont-ers.

Claremont students also enjoy an enriching residential campus experience complemented by close mentorships amid an intimate and supportive atmosphere. We have taken a leaf from Claremont in developing an integrated learning and living environment.

Our Prime Minister recently broke ground for the physical development of an initiative we call University Town built around residential colleges. These residential colleges will be home to a global mix of students and faculty. It is envisaged that more than a third of the residents will come from around the world, facilitating peer learning across disciplines, cultures and continents. By integrating the intellectual and social spaces, University Town seeks to catalyze a transformative educational experience for our students.\(^\text{61}\)

\(^{58}\) http://www.mitadmissions.org/topics/parents/intro_to_mit_for_parents/index.shtml


In Australia, it may be argued that the Melbourne Model has aspects of a liberal education but Melbourne’s new degrees will not be true liberal arts degrees. While there is no widespread movement toward adopting liberal arts curricula, there is a movement here towards broadening the scope of vocational undergraduate degrees. Monash University, for example, is developing the concept of a Monash ‘passport’, offering a Bachelor of Philosophy degree (PhB (Hons)) in a range of selected disciplines, aimed at the ‘brightest and best’ students and which, it is intended, will add ‘depth and weight’ to the current honours program. And, Macquarie University has recently (May 2008) announced that from 2010 all undergraduate students will be required to study a broader range of subjects that include the humanities, social sciences and sciences.

3.2 Core curricula

Table 4: Undergraduate core curriculum subjects at leading universities

<table>
<thead>
<tr>
<th>University</th>
<th>Fine/Arts</th>
<th>Humanities</th>
<th>Mathematics</th>
<th>Computer literacy</th>
<th>English incl. composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>N/A</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>Cambridge</td>
<td>N/A</td>
<td>y</td>
<td>y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yale</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
<td>y</td>
</tr>
<tr>
<td>Caltech</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
<td>y</td>
</tr>
<tr>
<td>Stanford</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>Columbia</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
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<tr>
<td>Princeton</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
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<tr>
<td>UC Berkeley</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
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<tr>
<td>Chicago</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
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<tr>
<td>Pennsylvania</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imperial College</td>
<td>N/A</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>University</th>
<th>Philosophy</th>
<th>Foreign languages</th>
<th>Sciences</th>
<th>History</th>
<th>Social science</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>N/A</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>Cambridge</td>
<td>N/A</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td></td>
<td>y</td>
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<tr>
<td>Yale</td>
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<td>y</td>
<td>y</td>
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<tr>
<td>Caltech</td>
<td>N/A</td>
<td>y</td>
<td>y</td>
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<tr>
<td>Stanford</td>
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<td>Columbia</td>
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<tr>
<td>Princeton</td>
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<tr>
<td>UC Berkeley</td>
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<td>Chicago</td>
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<tr>
<td>Pennsylvania</td>
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<td>y</td>
<td>y</td>
<td></td>
<td></td>
<td>y</td>
</tr>
<tr>
<td>Imperial College</td>
<td>N/A</td>
<td>y</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

62 [http://www.adm.monash.edu.au/execserv/academic-board/-private/item-4.2.1-meeting-1.pdf](http://www.adm.monash.edu.au/execserv/academic-board/-private/item-4.2.1-meeting-1.pdf)
As part of a liberal art education, many American universities require their students to study a core curriculum for part, or all of their undergraduate degrees. At Columbia, for example, freshmen\textsuperscript{65} are required to complete:

- a year each of Contemporary Civilization and Literature Humanities, a semester each of University Writing … Art Humanities and Music Humanities, three semesters of science … four semesters of language, the physical education requirement and two semesters of the major cultures distribution requirement … the Core represents 30–40 percent of each student’s classroom experience.\textsuperscript{66}

A number of highly ranked universities and colleges around the world have recently announced reviews and/or changes to their core curricula. Harvard’s Faculty of Arts and Science recently conducted a review (2007). It now requires students to take one course in each of the following eight categories: aesthetic and interpretive

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\textsuperscript{65} In the US the first year of university or college is known as the freshman year; the second year is the sophomore year. A junior is a student in the penultimate or third year and a senior is in the final (fourth) year. ‘Underclassmen’ is a collective term for freshmen and sophomores, and ‘upperclassmen’ refers collectively to juniors and seniors. \texttt{http://en.wikipedia.org/wiki/Student}

understanding; culture and belief; empirical reasoning; ethical reasoning; science of living systems; science of the physical universe; societies of the world; and the United States and the world. MIT similarly made changes to its core curriculum recently (2006). The changes are intended to

address the explosive growth in scientific and technological knowledge over the last half-century; the need for graduates to be confident participants in what MIT’s founding president, William Barton Rogers, called ‘the humane culture of society’; and the global context in which today’s students will live and work.

The core curriculum at MIT now includes eight subjects as part of a new science, mathematics and engineering requirement (three of these are prescribed – single-variable calculus, multivariable calculus and classical mechanics). The remaining five are selected from a small and tightly regulated number of subjects: chemical sciences; computation and engineering; life sciences; mathematics; physical sciences; and project-based experiences. Students are required to take at least one course from five of these six categories. The first and second years also include foundational humanities, arts and social science electives. Generally first-year students also take one foundational elective affiliated with a new Freshman Experience Program, focusing on broad topics that require multiple perspectives to be grasped deeply.

The importance of acquiring a global educational experience as part of a student’s undergraduate education has been incorporated into the MIT curriculum. International education programs have been expanded and strategies developed to create new opportunities that are especially relevant to an environment that emphasizes science and technology. Significantly, MIT’s ultimate goal is to allow any MIT undergraduate who wishes to participate in a meaningful experience abroad to be able to do so.

There is a strong push in many leading American universities toward students studying or working overseas as has already been discussed in this paper. The internationalisation initiatives of some of the leading universities will be discussed later.

### 3.3 Emphasis on language learning and global competence

<table>
<thead>
<tr>
<th>Highlights:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Language skills, cultural competence and a global outlook are seen as vital graduate attributes</td>
</tr>
<tr>
<td>• Educational institutions are increasingly prioritising the teaching of languages and cultural competence</td>
</tr>
</tbody>
</table>

The recent reviews and developments in the curriculum at leading universities around the world have emphatically emphasised the need to equip students with a range of

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competencies so that they can live and work in a global environment. Many universities are now actively pursuing strategies designed to internationalise their communities, their curricula and their culture. While the internationalisation strategies of a number of leading universities will be dealt with later on in this paper, it is appropriate to discuss here the widespread focus of recent curriculum developments on language learning, cultural competence and a global outlook.

Many of the leading US universities require undergraduates to study a foreign language as part of the core curriculum. At Princeton, for example, language learning goes hand-in-hand with acquiring cultural competence and adopting a global outlook, and these graduate attributes are seen as essential. Shirley Tilghman writes:

> Instilling a global perspective in our students; exposing them to the histories, languages, religious traditions, and cultures of countries other than their own; and building academic bridges between schools and colleges and their respective faculties around the world is today a scholarly imperative, rather than a luxury that educational institutions can dispense with at no cost to themselves or others. The long-term costs of complacency in this arena are very high indeed. Why? Because the subjects our students study, with whom they study, and where they study, as well as the opportunities that we provide for them to encounter what is unfamiliar both here and abroad, will color their vision of the world and shape their interactions with its peoples for the rest of their lives. 69

The House of Commons Education and Skills Committee in the UK has specifically recognised that country’s need ‘for a concerted drive to improve foreign language capacity’ and for universities to provide in particular ‘intensive short courses to enable students to undertake study abroad. Some languages, such as Mandarin Chinese, should … be treated as strategically important subjects’. 70

Eric Thomas, Vice-Chancellor at Bristol University, argues that the ‘truly internationalised university’ maintains ‘curricula which prepare graduates to work anywhere in the world, including competence in languages’. 71

### 3.4 Compulsory writing courses

<table>
<thead>
<tr>
<th>Highlights:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Many first-class educational institutions require <em>all</em> their undergraduate students to take writing/composition courses</td>
</tr>
</tbody>
</table>

Leading universities typically place considerable emphasis on the development of communication skills, most especially writing skills. Compulsory writing or English (composition) courses are a particularly prominent feature at many such universities. At Harvard, ‘a one-semester course in expository writing has been the one academic

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71 [http://www.bristol.ac.uk/university/vc/education-intl.html](http://www.bristol.ac.uk/university/vc/education-intl.html)
experience required of every Harvard student since the writing program was founded, in 1872’.72

At Duke:

All entering undergraduates must complete Writing 20 in their first year at Duke. Writing 20 offers an intensive introduction to the practice of Academic Writing. Each section of Writing 20 has a distinctive theme chosen by its instructor. Sections are capped at 12 students and taught by faculty who have studied a wide range of disciplines – from biology and engineering to political science and sociology to literature and philosophy and history – and who have also undergone special training in the teaching of writing.73

At Princeton the writing seminar is the only compulsory course freshmen are required to take. The course is centered first and foremost on writing, and taught by a scholar with special training in the teaching of writing. The Writing Seminar prepares students for the rigorous demands of writing at Princeton. The seminars are small, with no more than 12 students, and meet for 80-minute sessions twice a week … Every Writing Seminar focuses on strategies and techniques of college-level inquiry and argument. Students learn to frame interesting questions, make original claims, structure complex ideas, integrate sources of various kinds, and revise for greater cogency and clarity. In addition to writing frequently and completing several major assignments, students receive intensive instruction in academic writing, submit drafts for review, and attend one-on-one conferences with their professor. They also learn to navigate the University library and receive instruction in essential library research skills. To provide students with a worthwhile occasion for writing, each seminar is based on an intellectually stimulating topic, chosen to interest students and to animate their writing with compelling questions, debates, and problems. Among the many different Writing Seminars being offered this year are courses on important historical figures, events, and developments; urgent social issues; scientific breakthroughs; and influential artistic traditions. But, regardless of the topic, the seminar is dedicated to helping students build a solid foundation for writing at Princeton.74

At the heart of both the Oxford tutorial and the Cambridge supervision systems is an emphasis on students honing their essay writing skills through the preparation of weekly essays for discussion during tutorials.75

Other institutions profess to equip their graduates with ‘advanced skills’ in written communication (one of Alan Gilbert’s points in his list of the purposes of undergraduate education – see above), or ‘high levels of achievement in writing’ (an attribute expected of graduates of the ‘Melbourne Experience’76), but students are not required to take separate writing courses.

72 http://www.fas.harvard.edu/~expos/index.cgi?section=about
73 http://uwp.aas.duke.edu/about/index.html
74 http://web.princeton.edu/sites/writing/Writing_Seminar/WSAbout.htm
75 http://www.competition-law.ox.ac.uk/undergraduate/bafaqs.shtml
76 http://www.unimelb.edu.au/about/attributes.html
3.5 Curriculum design for a world-class education

Highlights:

- There is a widespread move in higher education institutions internationally to renew curricula and course structures
- If a university is to provide a world-class education the curriculum must be specifically focussed on outcomes, suited to purpose and carefully designed

UWA’s Review of Course Structures is part of a widespread international trend to renew curricula and course structures. Universities around the world are determining not only the structure of the undergraduate (3- or 4-years) and graduate degrees they will offer in the future, they are also considering the nature of the programs they will offer. In addition to the examples already given, examples include reform of liberal arts education at Amherst College, 77 and major change in Europe, where the ‘Bologna Process’ aims to achieve consistency of student outcomes from tertiary education across European universities.78

The University of Manchester has initiated a major strategic review of teaching, learning and the student experience.79 Vice-Chancellor Alan Gilbert suggests that the curriculum must be re-organised after having first determined exactly what learning outcomes the university community wants to achieve. In advocating curriculum rationalisation Gilbert is convinced that such action will improve academic outcomes at Manchester and the student experience through better use of existing human and financial resources:80

Given their student:staff ratios and workload pressures on teaching staff, large, comprehensive providers of undergraduate education cannot hope to improve the quality of student learning while retaining a smorgasbord approach to curriculum design and development. Unless we succeed in eliminating all vestiges of such an approach, and developing instead more focused, purposeful, carefully designed curricula that we are able to resource properly, we will be unlikely to achieve any breakthrough in the quality of undergraduate education.81

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77 http://www.amherst.edu/~cap/
78 http://www.dfes.gov.uk/bologna/
79 http://www.staffnet.manchester.ac.uk/teachingandlearningreview/
81 Ibid, p. 4, original emphasis.
4. Admissions

**Table 5: Undergraduate student demographics at leading universities**

<table>
<thead>
<tr>
<th>University</th>
<th>Undergraduates</th>
<th>Male %</th>
<th>Female %</th>
<th>Indigenous %</th>
<th>International %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>6715</td>
<td>51</td>
<td>49</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Cambridge</td>
<td>11729</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>9</td>
</tr>
<tr>
<td>Yale</td>
<td>5303</td>
<td>51</td>
<td>49</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Caltech</td>
<td>864</td>
<td>72</td>
<td>28</td>
<td>N/A</td>
<td>11</td>
</tr>
<tr>
<td>Oxford</td>
<td>12106</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>12</td>
</tr>
<tr>
<td>MIT</td>
<td>4114</td>
<td>56</td>
<td>44</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Stanford</td>
<td>6391</td>
<td>52</td>
<td>48</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Columbia</td>
<td>5593</td>
<td>54</td>
<td>46</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Princeton</td>
<td>4775</td>
<td>54</td>
<td>46</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>23863</td>
<td>45</td>
<td>54</td>
<td>N/A</td>
<td>3</td>
</tr>
<tr>
<td>Chicago</td>
<td>4790</td>
<td>50</td>
<td>50</td>
<td>N/A</td>
<td>7</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>9730</td>
<td>50</td>
<td>50</td>
<td>N/A</td>
<td>11</td>
</tr>
<tr>
<td>Imperial College</td>
<td>6068</td>
<td>44</td>
<td>25</td>
<td>N/A</td>
<td>19</td>
</tr>
<tr>
<td>Cornell</td>
<td>13523</td>
<td>51</td>
<td>49</td>
<td>N/A</td>
<td>8</td>
</tr>
</tbody>
</table>

**Table 6: Applications received and accepted for undergraduate places at leading universities**

<table>
<thead>
<tr>
<th>University</th>
<th>No. applications</th>
<th>% accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>22754</td>
<td>9</td>
</tr>
<tr>
<td>Cambridge</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Yale</td>
<td>21101</td>
<td>9</td>
</tr>
<tr>
<td>Caltech</td>
<td>3330</td>
<td>17</td>
</tr>
<tr>
<td>Oxford</td>
<td>13639</td>
<td>N/A</td>
</tr>
<tr>
<td>MIT</td>
<td>11374</td>
<td>13</td>
</tr>
<tr>
<td>Stanford</td>
<td>22333</td>
<td>11</td>
</tr>
<tr>
<td>Columbia</td>
<td>19851</td>
<td>12</td>
</tr>
<tr>
<td>Princeton</td>
<td>17564</td>
<td>10</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>41750</td>
<td>24</td>
</tr>
<tr>
<td>Chicago</td>
<td>9538</td>
<td>38</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>20483</td>
<td>18</td>
</tr>
<tr>
<td>Imperial College</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Cornell</td>
<td>28098</td>
<td>25</td>
</tr>
</tbody>
</table>

*See also Table 3: Quality of undergraduates at leading universities.*

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Leading universities are highly selective largely on the basis of academic potential. They assess applicants using an array of evidence, not just a number or score such as the TER. They devote considerable resources to this process and they often only accept a small proportion of those that apply.

4.1 Diversity

<table>
<thead>
<tr>
<th>Highlights:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Students can learn most in classes rich in many kinds of diversity</td>
</tr>
<tr>
<td>- Many leading universities educate students from all over the world making their influence truly global</td>
</tr>
<tr>
<td>- Most leading universities work proactively to recruit a diverse group of students; they strive for an ethnic, racial, socioeconomic and gender balance</td>
</tr>
<tr>
<td>- Many develop a range of recruitment initiatives in order to achieve this balance</td>
</tr>
<tr>
<td>- Many world-class universities recognise the social good that comes from educating students from historically disadvantaged groups</td>
</tr>
</tbody>
</table>

In its Green Paper, the University of Toronto refers to the fact that the best universities recognise the social benefits that accrue from having as diverse a community as possible at their campuses. It points out that initiatives undertaken to promote diversity in the student, academic and staff bodies require not only the commitment of the university to act for the social good, but also the concomitant support of legal and cultural frameworks:

The best research universities, public or private, recognize that the education of all students is enhanced when it is undertaken in the midst of a diverse student, faculty and staff body. They take pro-active steps to recruit a diverse group of students. They strive for an ethnic, racial, socio-economic and gender balance which reflects their communities and their nation.

Typically, they develop a range of recruitment initiatives to create an ethnically diverse student body. The nature of these initiatives is dictated by the legal and cultural frameworks in which they take place. One finds little by way of diversity initiatives, for example, at the University of Tokyo, while, under the Bakke ruling[^1] in the United States, such initiatives may extend to a consideration of ‘merit’ that goes well beyond grade point averages and that can include diversity itself as a ‘merit’ in admission. Some universities explicitly state that they admit to achieve a balance of many kinds among their students, and not only to create a class of high achievers. Their admission policies are premised on the fact that students learn from other students as well as from faculty, that one does not need to come to university to be with people like oneself, and that a class rich in many kinds of diversity will be class in which students have a richer educational experience.

Such universities understand diversity as not only an educational benefit, but as a social good. They recognize that society as a whole is the stronger when all those

qualified are educated to achieve their full potential. They heed recent research that demonstrates that members of historically disadvantaged groups participate more in civic life than do their more advantaged peers and that this is a social benefit.\textsuperscript{85}

While the \textit{Green Paper} refers to universities striving for a balance of diversity that ‘reflects their communities and their nation’, many world-class universities with a truly global perspective now seek a balance that includes people from as many places and as many cultures around the world as possible, targeting for this purpose in particular those from \textit{outside} their traditional ‘feeder’ communities and their nation.

At MIT, for example, there are 2,789 international students (including 381 undergraduates). Between them they are citizens of over 110 countries from all over the world including Ethiopia, Iceland, Kazakhstan, Morocco and Rwanda.\textsuperscript{86} While student flows will tend to reflect historic and geographic factors it appears that some universities are more proactive in striving for a truly global mix of students on their campuses than, for example, those universities where ‘international’ is really a synonym for students from \textit{one} particular region of the world.

MIT’s president, Susan Hockfield, has this to say in advocating diversity in the university community:

\begin{quote}
The obvious truth is that when we listen only to people who agree with us, we cease to grow. Fortunately, the reverse is equally true: A number of studies tell us that diverse teams are better at solving complex problems. Why is that? Because on homogeneous teams, unquestioned assumptions remain unquestioned, and everyone gets stuck in the same place. We see the same dynamic power of diversity with great movements through history: that the mixing of cultures and civilizations produces huge accelerations in thought and bursts of invention. The Silk Road. The Renaissance. And America, in its best moments. When our ideas are challenged and amplified from different directions, they get stronger and better, and we do, too.
\end{quote}

Although MIT may seem to be doing well, relatively speaking, in terms of diversity, Hockfield wants them to do better and, in February 2008 she convened a 300-member Diversity Leadership Congress, to further the goal of creating a culture of inclusion at MIT.\textsuperscript{87}

\textsuperscript{85} \textit{A Green Paper for Public Discussion Describing the Characteristics of the Best Public Research Universities}, University of Toronto
\texttt{http://www.provost.utoronto.ca/plans/process/Green_Papers/A_Green_Paper_for_Public_Discussion_Describing_the_Characteristics_of_the_Best_Public_Research_Universities.html#_ftn5}

On disadvantaged groups participating more than their advantaged peers in civic life see Chapter 6 of William C. Bowen and Derek Bok, \textit{The Shape of the River: Long-Term Consequences of Considering Race in College and University Admissions} (Princeton: Princeton UP, 1998).

\textsuperscript{86} \texttt{http://web.mit.edu/iso/stats_07-08/total.shtml}

\textsuperscript{87} \texttt{http://web.mit.edu/hockfield/speeches/2008-mlk-breakfast.html}
4.2 Selection procedures

**Highlights:**

- US and UK universities and colleges do not usually rely on a single measure of academic achievement to qualify potential candidates for admission.
- Selection procedures vary but a range of personal qualities and extracurricular achievements may be assessed as a guide to academic potential, and candidates are sometimes interviewed.
- Some universities in the US employ large numbers of admissions staff to facilitate the admissions process; in the UK much of this work is completed by academics.
- In some US universities members of the academic staff, alumni and students may also be involved in selection procedures. Networks of local committees, which may include alumni, assess candidates’ files and conduct interviews.
- It is argued that relying upon the TER score as the sole measure of scholarly potential is flawed.
- Systems for measuring and weighting performance and potential will have to be devised if these are to be adopted as selection criteria.

In Australia, where the decision to admit generally rests entirely upon exam results, a tension may be perceived between maintaining the quality of the students recruited and widening access to under-represented groups. Many world-class institutions have traditionally considered candidates more holistically, relying not just on a single measure of scholarly achievement to qualify potential candidates but assessing each person on a range of attributes including academic potential, extracurricular achievements and personal qualities.\(^{88}\)

At Bristol University, for example, an ‘holistic assessment of the broader context of a candidate’s academic achievement’ is made by admissions staff. The performance of the secondary school the candidate attended is considered in relation to exam results; the candidate’s personal statement and a reference are taken into account. The University requires admissions staff to consider the ‘candidate’s response to the opportunities and challenges faced, in the understanding that these are not the same for all’ and to make allowances for candidates who have had to deal with ‘verified exceptional circumstances or who [have] faced difficult challenges in positive ways (eg illness, death of a parent, poverty, disrupted education, refugee status)’.\(^{89}\)

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\(^{88}\) In the Australian context it is probable that educational privilege inflates TER scores and under privilege deflates them. There may therefore be a case, for example, for supplementing the high school achievement score with some standardised test of academic potential, which is less influenced by educational background. The TER score may also be affected by other factors such as high school subject selection, although there may be attempts to control for this through statistical control.

\(^{89}\) [http://www.bris.ac.uk/university/governance/policies/admissions-policy.html#toc06](http://www.bris.ac.uk/university/governance/policies/admissions-policy.html#toc06)
On a practical level admissions processes that require an holistic assessment of students’ potential involve a large number of people in a great deal of work. At Princeton, for example,

a team of experienced readers [in the Admissions office] combs through each [candidate’s] file, looking for strengths and weaknesses. Last year, we instituted a process whereby files are read twice, after which the strongest are brought to a committee for discussion and a vote. Since intellectual curiosity and scholastic excellence top our list of criteria, we give the heaviest weight to a prospective student’s transcript. We then evaluate their personal qualities, extracurricular achievements, special talents, and commitments outside the classroom, whether political, religious, athletic, artistic, or service oriented. In order to build a truly multicultural community, we look for diversity using the widest definition of this term. We also value a student’s employment history, leadership skills, independence of mind, and sense of responsibility, such as helping to support their family or overcoming personal hardships. We weigh the recommendations, essays, test scores, legacy status, and school systems from which students come, always asking whether they have taken full advantage of their opportunities. Every file is considered individually and in relation to other applications; we have no formula … Alumni play—and will continue to play—a critical role in fulfilling this mission. Last year, the National Schools Committee, working through a far-flung network of local committees, interviewed over 80 percent of our applicants (more than 11,000 students) around the world.  

Stanford highly values academic excellence but also takes into account a range of other personal attributes:

Students who derive pleasure from learning for its own sake thrive at Stanford. We look for distinctive students who exhibit energy, curiosity and a love of learning in their classes and lives. Academic excellence is the primary criterion for admission, and the most important credential is the transcript. We seek outstanding students who have selected a rigorous academic program and achieved distinction in a range of courses. We also take into consideration personal qualities—we want to know how students have taken advantage of available resources and their promise for contributing to the campus community and the world beyond Stanford. In some cases, exceptional ability in a particular area may be considered if an applicant is otherwise highly qualified.

In relation to postgraduate recruitment, Stanford’s Graduate School of Business tells prospective candidates that when reading their applications:

We look for evidence of the kind of curiosity and passion that will allow you to spark a lively discussion in class and continue that conversation during coffee with a faculty member … Another consideration is the initiative with which you seek out opportunities that enhance your knowledge. … Another factor … is your demonstrated leadership potential. … we look for evidence of your behaviors

\(^{90}\) Children of alumni accrue legacy status, which can give them an advantage in the admissions process if they are otherwise under-qualified. This practice has come under fire in recent years. See, for example, The Daily Princetonian: 

\(^{91}\) Shirley Tilghman, 2004, ‘Defining the Undergraduate Face of Princeton’
http://www.princeton.edu/president/pages/20041103/index.xml

\(^{92}\) http://www.stanford.edu/home/stanford/facts/undergraduate.html
consistent with your ideals, even under difficult circumstances—a sort of directed idealism. We want to understand your personal motivation and convictions, and your ability to confront complex, unfamiliar issues with good judgment. … We also try to uncover the ways in which challenges to your beliefs may have changed some of your perspectives and reinforced others. In understanding your competence, we look for both leadership experiences and potential. In doing so, we don't limit ourselves to your professional life. … We look comprehensively at your background for evidence of your impact on the people and organizations around you, and the impact of those experiences on you.93

Of course, both Princeton and Stanford have what might be referred to as an ‘over supply’ of very highly qualified applicants for places every year. This enables them to look for distinctive features, such as applicants’ community service experience, to distinguish one from another. It should be noted that in 2007 Princeton and Stanford accepted only 10 and 11 per cent respectively of the applications they received. Harvard and Yale accepted only 9 per cent.94

The question of equitable admission to university and the advantages of being in an ‘independent’ school in the UK has been investigated by the Sutton Trust.95 It advocates introducing proactive talent scouting similar to the Harvard (et al) system (which will be discussed presently). The Trust points out that most universities in the UK ‘usually have two or three full-time admissions staff and a number of part-timers to handle an average annual intake of 2,000 students’, while Harvard’s admissions department ‘has 50 people working full time to admit 1,650 students per year’.96

In the Australian context Haigh, Reynolds and Levy argue that reliance upon the TER score alone as a measure of scholarly potential is flawed. It has exacerbated inequalities in relation to accessibility and affects student attrition, failure rates and the pace of progress through degree courses. Haigh, Reynolds and Levy argue that there is justification for ‘more appropriate selection procedures for students who have talent but who would otherwise be lost to the system’.97

For aspiring universities admissions policies require careful re-thinking to overcome the tension between quality and diversity. Alan Gilbert argues:

Upholding ‘standards’ and managing admissions effectively are complex matters, and if Manchester can manage this complexity in sophisticated and innovative ways, it may, paradoxically, simultaneously achieve better widening participation outcomes and improved quality at admission. … To optimise both widening participation outcomes and quality at admission, admissions policies and procedures will need to be carefully re-thought and recommendations for alternative approaches thoroughly

93 http://www.gsb.stanford.edu/mba/admission/admission_criteria.html
95 The Sutton Trust was founded in 1997 by Sir Peter Lampl. It has a particular emphasis on recognising the needs and raising the aspirations of the academically able and focuses on a range of areas including access to university for under-represented groups. See http://www.suttontrust.com/about.asp
96 http://news.bbc.co.uk/1/hi/education/777449.stm
tested. Almost certainly, we will need to resolve the difficult problem of weighting actual performance to take account of educational potential – and to do so in ways that are informed, transparent, defensible and contestable.  

4.3 Talent scouting

Many leading institutions are proactive in searching for, identifying and communicating with promising prospective students locally, nationally and internationally. At Harvard, for example, the Dean of Admissions makes school visits on an annual basis all over the US and worldwide looking for potential freshmen. He has completed student searches in Tibet, Turkey, Thailand, Indonesia and Jordan and, most recently, in mainland China.

Harvard recruiters undertake joint recruitment trips with Princeton, Duke, Georgetown and Stanford universities and the Universities of Pennsylvania and Virginia, searching for talented students. They present joint slide shows and talk to prospective students and parents; in the US they target tiny rural towns and particularly families with ‘low to moderate incomes’.

4.4 Outreach programs

**Highlights:**

- Many leading universities identify and work with talented high school students with the aim of enhancing their chances of making a successful application to a top college or university
- Princeton targets specifically ‘high achieving, low income high school students from local districts’; their program is free of tuition fees
- Princeton’s approach is holistic – as well as providing scholarly training, their outreach program strives to ‘develop and nurture … self-esteem, intellectual courage, self-reliance, personal responsibility, wellness, and constructive relationships’

As well as communicating with prospective students from under-represented groups through talent scouting missions, top institutions may also identify talented prospective candidates as early as the first year of high school and then work with them to enhance their chances of making a successful application to one of the top selective colleges or universities.

Talented students from local schools are targeted and supported through initiatives such as the Princeton University Preparatory Program (PUPP):

Students are carefully selected during their freshmen year of high school to participate in PUPP. We work with students throughout the remainder of their high school years … The Princeton University Preparatory Program is a rigorous,

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98 Gilbert, ‘Positioning the University of Manchester as a Premium Provider’, ibid, p. 4.
academic and cultural enrichment program that supports high achieving, low income high school students from local districts. Our multi-year, tuition-free program prepares participants for admission and ongoing success within selective colleges and universities. Through our work, we develop and nurture: passion for learning and a commitment to academic pursuits; a sense of community both within the program and among its constituents and partners; individual perspectives through critical and creative thinking, readings, discussions, personal interactions, extra-curricular and life experiences; a breadth and depth of academic performances in writing, literature, social and natural sciences, mathematics and cultural arts; self-esteem, intellectual courage, self-reliance, personal responsibility, wellness, and constructive relationships; leadership skills and cross-cultural awareness, appreciation and engagement. … PUPP is one of Princeton’s most inspired – and successful – educational initiatives. It gives talented students of modest means the knowledge and confidence they need to fulfill their aspirations, it broadens the pool of applicants available to our nation’s finest colleges and universities, and, in time, it will strengthen the fabric of American society.\textsuperscript{100}

At Yale efforts are made to increase access for students from families of limited or modest means through a nationwide outreach scheme. The undergraduate admissions office sends over 100 Yale students as outreach ambassadors each year to high schools around the US with large numbers of economically disadvantaged students.

Yale has also entered into partnerships with non-profit organizations such as Questbridge and College Summit to assist high performing lower-income students in understanding their college options and achieving their aspirations. Questbridge is a national non-profit program matching high-achieving lower-income students with many of the country’s most selective colleges; College Summit is a national non-profit program that assists students from disadvantaged school districts with the college application process.\textsuperscript{101}

Within Australia, the University of Melbourne, for example, has implemented equity initiatives including Access Melbourne, which reserves 20 per cent of undergraduate places for students who demonstrate educational disadvantage, and the Melbourne Access Program in which the University works intensively with students in the middle secondary years in a group of under-represented local schools.\textsuperscript{102}

\textsuperscript{100} PUPP website, http://www.princeton.edu/teacher/pupp/

\textsuperscript{101} http://www.yale.edu/admit/freshmen/financial_aid/

4.5 Student finance

**Table 7: Financial aid packages and student employment at leading universities**

<table>
<thead>
<tr>
<th>University</th>
<th>Average financial aid package US$</th>
<th>Proportion of students receiving %</th>
<th>students employed on campus %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>33,635</td>
<td>49</td>
<td>48</td>
</tr>
<tr>
<td>Cambridge</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Yale</td>
<td>32,533</td>
<td>43</td>
<td>50</td>
</tr>
<tr>
<td>Caltech</td>
<td>25,923</td>
<td>58</td>
<td>34</td>
</tr>
<tr>
<td>Oxford</td>
<td>6,790 no. = 700</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>MIT</td>
<td>29,519</td>
<td>68</td>
<td>48</td>
</tr>
<tr>
<td>Stanford</td>
<td>31,250</td>
<td>44</td>
<td>N/A</td>
</tr>
<tr>
<td>Columbia</td>
<td>33,421</td>
<td>48</td>
<td>N/A</td>
</tr>
<tr>
<td>Princeton</td>
<td>29,624</td>
<td>52</td>
<td>46</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>15,710</td>
<td>49</td>
<td>N/A</td>
</tr>
<tr>
<td>Chicago</td>
<td>30,578</td>
<td>46</td>
<td>N/A</td>
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<tr>
<td>Pennsylvania</td>
<td>29,845</td>
<td>43</td>
<td>39</td>
</tr>
<tr>
<td>Imperial College</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Cornell</td>
<td>29,466</td>
<td>42</td>
<td>50</td>
</tr>
</tbody>
</table>

**Highlights:**

- The wealthiest universities in the US are able to offer ‘need blind’ admission and have recently limited or even eliminated loans as part of financial aid packages to low- and middle-income families; a Harvard education is now virtually free for students from lower socio-economic groups.
- The highest-ranking US universities include living costs in their financial aid packages.
- Universities are keen to normalise the receipt of financial aid – to make it run-of-the-mill or unremarkable – and to ensure that the availability of assistance strategies is widely promoted.
- Many institutions are striving to make access to financial aid as straightforward as possible.
- Students who receive financial aid will often be found paid work on the campus if they decide to work as part of the self-help component of their financial aid package.
- Many universities employ large numbers of students on the campus – in cafes, in libraries, in the development or advancement office and in alumni relations, for example.
- Students in the US may also be employed through the Federal Work-Study program.
- Alumni Affairs and academic departments may also hire students.
- Where the number of hours in paid work is kept to a modest level students report that working has a positive effect on their overall satisfaction with college.

4.5.1 ‘Need blind’ admission

The US universities at the top of the ranking tables, such as Harvard, Princeton, Yale and Stanford, offer ‘need blind’ admission. Institutions offering need blind admission accept students based on their merits (scholarly and personal qualities) without regard to their capacity to pay fees or living costs; financial aid is then allocated based on need. These institutions endeavour to meet all the demonstrated financial need of each student, including living costs, and have instituted programs to help students attend their institutions by limiting or eliminating the loan portion of their financial aid packages.104

Princeton initiated its no-loan financial aid policy in 2001 and a number of colleges and universities across the US have followed suit, increasing affordability not only for students from low-income but also from middle-income families.105 In 2007, Harvard President Drew Faust and Dean of the Faculty of Arts and Sciences Michael D. Smith announced a sweeping overhaul of financial aid policies designed to make Harvard College more affordable for families across the income spectrum. The new initiative focuses on ensuring greater affordability for middle- and upper-middle-income families through major enhancements to grant aid, the elimination of student loans, and the removal of home equity from financial aid calculations. This initiative builds on Harvard’s recent path-breaking policies to ensure that families with incomes below $60,000 are not asked to contribute to the cost of sending their children to Harvard. ‘We want all students who might dream of a Harvard education to know that it is a realistic and affordable option,’ said Faust. ‘Education is fundamental to the future of individuals and the nation, and we are determined to do our part to restore its place as an engine of opportunity, rather than a source of financial stress. With no loans, no consideration of home equity, and a dramatic increase in grant aid, we are not tinkering at the margins, we are rebuilding the engine … This is a huge investment for Harvard,’ Faust continued, ‘but there is no more important commitment we could make. Excellence and opportunity must go hand in hand’.106

The financial circumstances of the likes of Harvard are not currently matched anywhere elsewhere in the world (nor are they likely to be matched in the foreseeable future). The University has endowment funds of US$34.9 billion (2007) and its budget for 2006 was US$2.4 billion. Total enrolment for 2006-07 was 6,715; of these 1,684 were freshmen. As the table shows, 49 per cent of undergraduates were determined to have financial need; the average package they received was US$33,635. Ninety-five per cent of Harvard’s students were ranked in the top 10 per cent of their high school class; sixty-five per cent come from public high schools.

Implicitly acknowledging that prospective students may be put off by Harvard’s reputation as a rich people’s place, Faust emphasises that it’s not enough to have need blind admission in place. The university must also effectively broadcast its accessibility to talented students and, importantly, clearly convey the message that they will be welcomed at Harvard:

104 http://www.petersons.com/common/article.asp?id=3269&path=ug.pfs.advice&sponsor=1
We must make sure that talented students are able to come to Harvard, that they know they are able to come, and that they know we want them here. We need to make sure that cost does not divert students from pursuing their passions and their dreams.\textsuperscript{107}

Yale has recently announced that it would be reducing the average cost of sending a student to Yale College by over 50 per cent for families with financial need.

Families earning less than US$60,000 annually will not make any contribution toward the cost of a child’s education, and families earning US$60,00 to US$120,000 will typically contribute from 1% to 10% of family income. The contribution of aided families earning above US$120,000 will average 10% of income.

Yale aspires to be ‘a college of choice for the very best and brightest students from across America and around the world, regardless of financial circumstances’.\textsuperscript{108} Thus, some US universities and colleges are applying ‘need blind’ admission to students from \textit{anywhere in the world} – they do not see international students essentially as a revenue strategy.

\subsection*{4.5.2 Scholarship and loan arrangements}

Other universities may not be able to match Harvard’s generosity to students but they can put in place the best and most flexible scholarship and loan arrangements they are able to provide and make the availability of financial aid widely known, access easy and receipt of aid ‘normal’. This is the goal of Queen’s University, Ontario:

\begin{quote}
Queen’s University must be committed to remaining accessible to all qualified students who would benefit from its distinctive environment for learning, regardless of socio-economic background. Student assistance strategies must support this goal by ensuring higher visibility of and easier access to a complete range of student assistance options so that financial circumstances need not preclude a student’s acceptance to and successful completion of his/her chosen program of study.\textsuperscript{109}
\end{quote}

\subsection*{4.5.3 Student employment}

A key element of financial assistance to students in many US universities is employment of students on campus. As well as providing them with financial support, this can enhance students’ sense of belonging to the university and/or college community. At MIT, for example, undergraduates who receive financial aid, and who decide to work as part of their self-help component, will be helped to find a student job through the Student Financial Services (SFS) department.

SFS doesn’t earmark jobs for any students. MIT has an open job market, which means that any student, regardless of financial need, has the opportunity to get any job on campus for which he or she is qualified. However, \textit{we have more than enough positions available for all the students who want work} (emphasis added).\textsuperscript{110}

\textsuperscript{107} Drew Faust, ‘Installation address: Unleashing our most ambitious imaginings’ October 12, 2007 \url{http://www.president.harvard.edu/speeches/faust/071012_installation.html}
\textsuperscript{108} \url{http://www.yale.edu/admit/freshmen/financial_aid/}
\textsuperscript{109} \url{http://www.queensu.ca/engaging/context/}
\textsuperscript{110} \url{http://web.mit.edu/sfs/jobs/for_students.html}
SFS maintains ‘on-call lists’ of students interested in immediate or short-term work performing tutoring, child-care, data entry or similar jobs. Employers looking for students to work in these areas can check the lists and contact students directly.

Students are employed throughout the University and employment opportunities are created especially for them. For example, as Jim Mitchell has pointed out in a current study for UWA, at the very top of the home page of the MIT Admissions website is the declaration ‘this site is maintained by twelve students and four admissions staff members’.\textsuperscript{111}

Eligible students throughout the US can also obtain paid employment through ‘Federal Work-Study’. This is a need-based federal program that can fund a portion of a student’s salary. Students may be employed in an off-campus paid community service job, in addition to or instead of working on campus. Earnings from work-study jobs may only be used to pay for educational expenses.

MIT students may also find work through the Public Service Center (PSC). The PSC develops and lists paid public-service student jobs and fellowships; the Careers Office also has information on finding paid and unpaid internships, as well as full-time jobs for graduating students; the Alumni Association regularly hires students to staff Tech Reunions each June, and for its Tech Callers program\textsuperscript{112} throughout the year; MIT’s libraries also employ many students each year. Many academic departments also maintain their own bulletin boards with job listings.\textsuperscript{113}

In his research, Richard Light found that, in relation to all the non-academic commitments of students, including paid employment, extracurricular activities, volunteer work and athletics, ‘there is no significant relationship between level of involvement and grades. Yet there is a clear relationship between participation and satisfaction with college. … Three-fourths of all working students say that working has a positive effect on their overall satisfaction with college’.\textsuperscript{114} It should be noted, however, that McInnes, James and Hartley (2000) found a trend of decreasing commitment and attachment to a range of aspects of university life and academic work by those students who work long hours in paid employment.\textsuperscript{115} There is a marked difference here between the scenario in leading US universities – where a student is perhaps employed one day per week in one of the university libraries – and

\begin{itemize}
\item \textsuperscript{111} \url{http://www.mitadmissions.org/}
\item \textsuperscript{112} The MIT website has this to say about its Tech Callers Program: ‘Tech Callers are MIT students—undergraduate and graduate—who represent the MIT Alumni Association in raising money for MIT. Students call alumni to solicit Alumni Fund donations and hopefully create a connection between alumni and the MIT community. Tech Callers’ importance cannot be underestimated: approximately one-third of the Institute’s alumni give to MIT through the Tech Caller Program. Tech Callers gain useful skills for advancing [fundraising] in the professional world. They become more compelling fundraisers and more effective communicators with every phone call. Each must be articulate, possess excellent telephone and communication skills, and be goal-oriented. Because it is vital that all Tech Callers perform to the best of their abilities, students are carefully trained and continually monitored’, \url{http://web.mit.edu/techcaller/}
\item \textsuperscript{113} \url{http://web.mit.edu/sfs/jobs/for_students.html}
\item \textsuperscript{114} Light, Making the Most of College, p. 28, 30.
\item \textsuperscript{115} C. McInnes, R. James & R. Hartley, 2000, Trends in the First Year Experience in Australian Universities, Centre for the Study of Higher Education, the University of Melbourne: pp. xii, 46. \url{http://www.dest.gov.au/archive/highered/eippubs/eip00_6/fye.pdf}
\end{itemize}
the Australian scenario – where a student may be working early morning and/or late night shifts at a fast-food outlet several days per week. There is obviously a balance that must be achieved in relation to working hours, so that students are able to devote sufficient time not only to their academic studies but also to their engagement in extra-curricular campus life, which can be an equally important part of their education.

5. Student/staff ratios and class sizes

Table 8: Student/staff ratios and class sizes in leading universities

<table>
<thead>
<tr>
<th>University</th>
<th>Student/staff ratio</th>
<th>% classes fewer than 20</th>
<th>% classes 20-50</th>
<th>% classes 50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>7 to 1</td>
<td>69</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Cambridge</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Yale</td>
<td>6 to 1</td>
<td>76</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Caltech</td>
<td>3 to 1</td>
<td>75</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Oxford</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>MIT</td>
<td>7 to 1</td>
<td>61</td>
<td>25</td>
<td>14</td>
</tr>
<tr>
<td>Stanford</td>
<td>6 to 1</td>
<td>73</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>Columbia</td>
<td>6 to 1</td>
<td>71</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>Princeton</td>
<td>5 to 1</td>
<td>72</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>15 to 1</td>
<td>61</td>
<td>25</td>
<td>14</td>
</tr>
<tr>
<td>Chicago</td>
<td>6 to 1</td>
<td>72</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>7 to 1</td>
<td>74</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>Imperial College</td>
<td>11 to 1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Cornell</td>
<td>9 to 1</td>
<td>60</td>
<td>25</td>
<td>15</td>
</tr>
</tbody>
</table>

*It should be noted that while the University of California Berkeley has the highest student/staff ratio of the universities listed in the table above, the University of California, Los Angeles (ranked 19 overall in Table 1) has a student/faculty ratio of 17 to 1, and the University of California, San Diego (ranked 26 overall) has a ratio of 19 to 1. The University of California system is discussed in detail below.

Highlights:

- The most highly-ranked universities in the world generally have very low student/staff ratios
- Personal interaction between students and academic staff can lead to ‘transformational’ learning experiences
- Personalised, richly interactive student learning is probably most easily achieved in but is not exclusive to smaller classes
- Aspiring universities are seeking innovative ways to keep class sizes to a minimum and to provide students with meaningful interaction with academics, mentors and advisors using a range of strategies

The most highly ranked higher education institutions in the world typically have relatively small classes and very low student/staff ratios. As mentioned in Section 1, the staff-student ratio is the ratio of the total number of staff to the total number of students and it is not a measure of class size, which may vary considerably.

It is commonly believed that students studying in small classes are better able to engage and interact closely with academics than students in larger classes. But, as Gilbert argues, ‘research clearly indicates that quality education occurs in certain circumstances’ which ‘are not exclusive to small classes.’ Instead, he argues ‘independent of class size, active participation facilitates learning better than passive listening … Instruction which is intimate, interactive and investigative produces the most positive educational outcomes … [and] the importance of interaction, participation and involvement for student learning are widely recognized’.117

In the THES ranking, as has previously been discussed, student/staff ratios are used as a proxy of quality education but it is student/staff interaction that has been shown to be crucial in students’ learning experiences and outcomes. In Making the Most of College, Richard Light argues strongly for close interaction between students and teachers to the extent that they ‘get to know’ each other:

the single most important bit of advice [that it’s possible to give to first-year students] is to get to know one faculty member reasonably well this semester, and also to have that faculty member get to know you reasonably well.118

Top universities and colleges in the US emphasise the importance of interaction between first-year undergraduates and faculty members. For example, ‘Stanford’s academic program prioritizes engaging students in serious critical inquiry from their first days on campus, working closely with faculty members’.119 Stanford’s faculty/student ratio is 6 to 1, and 73 per cent of their classes have fewer than 20 students; the learning experience they aim to provide ‘emphasizes close interaction with faculty’.120

Alan Gilbert at Manchester writes:

Of all the findings of studies into what produces the best, most transformational learning experiences for students, one factor stands out more than any other: personal interaction between the learner and a teacher. At whatever level we probe, the primary determinants of learning quality involve personal interaction and engagement.121

In common with many ‘large, comprehensive’ universities worldwide, Manchester University has ‘tens of thousands of students and high student:staff ratios’, and has ‘over recent decades had to make inimical compromises between size and quality, particularly at the level of undergraduate education’. In such large institutions the

118 Light, p. 86.
120 http://www.stanford.edu/home/stanford/facts/undergraduate.html
student learning experience may be rarely personalised and the chances of individual members of the teaching staff getting to know individual students are reduced.

Gilbert is brutally honest in his assessment of the situation:

*The most important single characteristic of world-class higher learning is the provision of personalised, richly interactive student learning.* There are no viable alternatives. Manchester must find innovative ways to escape larger classes with their higher student:staff ratios and an increasingly depersonalised student experience if it is to offer genuinely world class undergraduate education. That will mean offering all our students genuine opportunities for meaningful personal interaction with teachers, mentors and advisors. There is no short-cut to quality that avoids finding a satisfactory solution to this problem (original emphases).  

He is uncompromising in his quest for a solution:

Manchester will never be one of the world’s great universities unless we find new, sustainable means of re-creating (perhaps in novel new forms) the highly personalised, profoundly interactive learning experiences characteristic of the smaller, more intimate, typically collegiate universities.

For aspiring universities committed to providing their students with the very best learning experience, creating opportunities for meaningful personal interaction between individual students and individual teachers is absolutely vital.

How are other universities making sure that they are providing the best student learning experience that they possibly can?

Manchester is formulating a number of approaches relating to:

- The curriculum – moving away from what Gilbert refers to as a ‘smorgasbord approach’ to ‘a more carefully planned, managed and regularly reviewed approach’, which is likely to ‘reduce academic workloads, especially in relation to preparation time, and thus release time for richer, more personal, less formal interactions with student learning’.
- Small group learning – implementing strategies which will ‘enable all students to have the opportunity to work in small groups’
- Academic advising – enabling ‘all students’ to ‘have access to an academic advisor with whom they can develop a meaningful discussion to include academic progress, skill acquisition, approaches to learning and academic choices’
- The establishment of a Personalised Learning Centre – which will ‘support students to develop their personal and academic skills, provide diagnostic testing in key skill areas, and support staff in their implementation of personalised learning’
- On-line learning – among other IT initiatives Manchester is to ‘exploit[] on-line services and solutions as a means of providing, as a matter of course, all students with opportunities for rich, personal learning interactions both with

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122 Alan Gilbert, ‘Reviews of Teaching, Learning and the Student Experience’, ibid, p. 13.
123 Alan Gilbert, Letter, ibid.
teaching staff and with other students’ and to provide ‘dedicated on-line
teaching space’ for ‘all course units’ to facilitate ‘high levels of interaction,
formal and informal, between students and teachers (on both a one-to-one and
a group basis) as well as between individual students and within groups of
students’

- Optimising the first-year experience – ‘academically, socially and
  residentially’.

Teaching and learning strategies, the student experience and the curriculum will be
discussed in further detail below but this serves to emphasise and set the parameters
for the discussion that is to follow.

5.1 University of California system

In Table 1 above the highly ranked positions of the University of California system in
the SJTU rankings appear to be anomalous. They feature strongly in the top 20 but
their student-faculty ratios are considerably higher than the other institutions ranked
beside them. How then do UC Berkeley, Los Angeles and San Diego make it into the
top 20 and how do they manage larger class sizes?

UC universities are ranked highly by SJTU – a research ranking – because the
methodology in that ranking scheme does not include a score for faculty resources nor
a category related to the student learning experience.

UC universities do not rank so highly in the US News ranking which takes into
account a range of aspects related to the student learning experience. The US News
ranking is calculated by weighting a number of measures including the category
‘faculty resources’ (20%). There is a range of weighted sub-factors in this category:

- Faculty compensation 20%
- Percentage of faculty with terminal degrees 15%
- Percentage of full-time faculty 5%
- Student/faculty ratio 5%
- Class sizes 1-19 students 30%
- Class sizes 50+ students 10%

The THES ranking methodology does not rate UC universities as highly as the SJTU
either. While THES does not include the range of criteria related to faculty resources
that US News does, it does include a score, weighted by a factor of 20%, for
student/faculty ratio as an indicator of teaching quality.

The UC system has faced huge budget constraints in recent years due to cuts in state
funding; the 2008-9 budget report shows that, since 1966-7 when student-faculty

\[124\] Alan Gilbert, ‘Interim Report of the Undergraduate Education Review Committee’, February 2008,
p. 10 [http://www.campus.manchester.ac.uk/medialibrary/tao/Pres-review-t&l/interim-report-review-
ug-ed-jan-08.pdf](http://www.campus.manchester.ac.uk/medialibrary/tao/Pres-review-t&l/interim-report-review-
ug-ed-jan-08.pdf)


\[127\] [http://www.universityrankings.ch/methodology/times_higher_education](http://www.universityrankings.ch/methodology/times_higher_education)
ratios were just under 15 to 1, they have steadily increased, peaking at just over 19 to 1 in the late 1980s. Budget cuts totalling US$70 million would have seen the figures increase further to nearly 21 to 1. By re-directing budget cuts UC has since managed to halt this increase, improve ratios and reduce some class sizes.

Universities in the University of California system recognise that they have high student-faculty ratios in relation to peer comparison private universities such as Yale, Princeton and Stanford and that this situation is not going to change in the foreseeable future. The situation is exacerbated by the fact that the number of Graduate Student Instructors (who lead sections of large-enrolment courses) has been declining ‘due in part to an increased availability of non-teaching support to keep the University competitive with other institutions’. When the UC system ratio of graduate students to undergraduates was around 27% to 73%, Harvard, Stanford and MIT had significantly higher ratios of approximately 60% to 40%.

At UC Berkeley, due to a range of factors including larger classes and changing student demographics (cultural background, socio-economic level, immigrant status, native language and academic background), more students were reporting that they had ‘never’ or ‘rarely’ been in a class where the professor knew their name and 61% of freshmen reported having ‘never’ or ‘rarely’ met with a faculty member in person, such as during office hours.

Following an extensive ‘Educational Effectiveness Review’ at Berkeley a number of recommendations were made relating specifically to ‘Reinventing Large-Enrollment Courses’. Berkeley should:

- provide incentives and recognition for instructors who experiment with new approaches to teaching large-enrollment courses
- improve instructor development efforts
- promote GSI [graduate student instructor] development and effectiveness
- foster the creation of learning communities in large-enrollment courses
- institutionalise curricular strategies
- improve the acquisition of information literacy and research skills in large-enrollment classes
- increase the use of instructional technology and provide appropriate technological support in large-enrollment classes
- streamline systems and reduce administrative burdens
- continue to improve classroom facilities and technological/physical infrastructure
- [and] integrate assessment/evaluation at the course level and institutional level

128 [link to source]
129 [link to source]
130 [link to source]
6. Student experience\textsuperscript{131}

6.1 Students in residence

Table 9: Students in residence at leading universities\textsuperscript{132}

<table>
<thead>
<tr>
<th>University</th>
<th>% Students in residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>98</td>
</tr>
<tr>
<td>Cambridge</td>
<td>N/A (near 100%)</td>
</tr>
<tr>
<td>Yale</td>
<td>88</td>
</tr>
<tr>
<td>Caltech</td>
<td>92</td>
</tr>
<tr>
<td>Oxford</td>
<td>N/A (near 100%)</td>
</tr>
<tr>
<td>MIT</td>
<td>91</td>
</tr>
<tr>
<td>Stanford</td>
<td>95</td>
</tr>
<tr>
<td>Columbia</td>
<td>94</td>
</tr>
<tr>
<td>Princeton</td>
<td>98</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>35</td>
</tr>
<tr>
<td>Chicago</td>
<td>N/A</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>64</td>
</tr>
<tr>
<td>Imperial College</td>
<td>N/A</td>
</tr>
<tr>
<td>Cornell</td>
<td>46</td>
</tr>
</tbody>
</table>

Highlights:

- The majority of the top ten universities have over 90 per cent of their undergraduates living on campus; many more institutions have high percentages of students in residence or have students living in university-run accommodation very close to the campus
- At some universities with extensive residential accommodation a diverse range of students and staff live, eat, study, work, socialise and take part in extra-curricular activities together
- Students in residence on campus can be immersed in an intellectual community that encompasses a broad range of disciplines
- Colleges can be used to introduce innovative educational programs and to target particular segments of the potential student market

In many leading universities students in residence are able to be fully immersed in the intellectual community that encompasses the very culture of the institution. This, for many educational specialists, is the ultimate or ideal situation in which a university may provide the richest, most interactive and most rewarding student experience.

In the UK and the US it is widely accepted (by students, by parents and by educational institutions) that undergraduates will ‘go away’ to university. In contrast, in Australia the majority of school-leavers don’t even consider going to a university.

\textsuperscript{131} See also Section 11 on Learning spaces which is relevant to student experience

outside their home state; most students continue to live at home and they commute to university on a daily basis.

One of the most noticeable attributes of the most highly ranked universities – those in the top twenty – and one that has repercussions down to the level of the culture of the institution, is that they are primarily residential for undergraduates at least. Many institutions further down the rankings have large percentages of students in residence or have students living in university-run accommodation close to the campus.

At MIT for example:

Most undergraduates live on campus in one of MIT’s 11 Institute houses or 36 MIT-affiliated fraternities, sororities, and living groups. All unmarried first-year students must live in one of the Institute’s residence halls—except [a very small percentage] who commute from home. Students may elect to remain on campus following their freshman year, or to move to a fraternity, sorority, or independent living group. The current total of undergraduates living on campus is 2,920 [2008].

Approximately 1,800 single graduate students live in MIT’s six campus houses …Two campus apartment complexes … accommodate 413 graduate and undergraduate students with families. About 80 graduate students live in undergraduate dorms as graduate resident tutors.133

Living in a residential college can be akin to being immersed in a diverse intellectual community.

Advantages of residential colleges include a strong sense of community, opportunities to interact with faculty and students outside of your major, and a dorm that feels more like home. The idea is to link academics [study] and daily life, so that dorm life supports and adds to students’ intellectual and social development.134

There has been something of a renaissance in the college system in particular recently with many universities establishing, planning or expanding internal systems of residential colleges.135 At Columbia, for example, which has recently become ‘a fully residential college, with 99 percent of first-years and 95 percent of upperclassmen living on campus’,

[the] dorms have become much more than places to eat and sleep. From the halls of John Jay to the suites of East Campus, the dorms hum with the campus’ intellectual and social life. ‘Students get an education in the classroom at Columbia that is excellent, but they also get an education in the residence halls,’ [Dean Austin] Quigley says. ‘What they learn from and with each other in the residence halls is every bit as important as what they learn from faculty in the classroom. The remarkable diversity of the Columbia College student community is a social and educational resource for everyone’.136

133 http://web.mit.edu/facts/housing.html
At Queen’s University, Ontario,

the learning environment … is also distinctive for the opportunities presented by its residential nature and its close integration with a relatively small city community. With some 90 per cent of our first year students living on campus, and 85 per cent of all students living within a 15-minute walk of the campus, our environment for learning has long been a distinctive – and sought-after – feature of the Queen’s experience. The strong tradition of student government, participation of students in university governance, multiplicity of student clubs and organizations, programs in the creative and performing arts, as well as a remarkable range of intramural and varsity athletic programs, together enrich the academic experience and offer a wide range of opportunities for our students to learn and grow as contributing members of a community and as future leaders. We need to preserve this distinctive feature of the Queen’s experience, even as we seek additional ways to expand out-of-class experiences and integrate them with our academic programs.137

At the University of Toronto, residential colleges are being used to introduce innovative educational programs:

[I]n recent years, the colleges and federated universities have strengthened their roles as focal points for interdisciplinary programs or centres. To name a few from among a great many examples, one might cite: Cinema Studies at Innis College; Canadian Studies at University College; Christianity and Culture at St. Michael’s; International Relations at Trinity, Caribbean Studies at New College, and Employment Relations at Woodsworth. These programmatic functions create great synergy but also some tension with traditional departmental mandates. …

Both Trinity and Victoria have strategically capitalized on distinctive identities and highly selective first-year programs to recruit a disproportionate number of top academic performers.

Finally, the colleges are introducing year-one programs to facilitate transition of new students to university life. These vary in configuration. Some target all first-year students. Others, most notably Vic One and Trinity One, offer additional seminar courses and some academic enrichment to a subgroup of first-year students who meet stringent academic and extracurricular criteria.

Against this background, it is clear that the colleges and federated universities have never been more important to the success of the University’s largest campus.138

There is no doubt that total immersion in an intellectual community is a richly rewarding experience for students and that it can have significant educational benefits. Alan Gilbert at Manchester University states: ‘the kinds of multi-layered, close-knit, highly-interactive learning communities that good university colleges and halls of residence create are likely to remain among the hallmarks of any great undergraduate educational experience’.139

137 ‘Engaging the World’: Queen’s Strategic Plan, 2006 http://www.queensu.ca/engaging/context/
138 University of Toronto, Toward 2030, ‘Our Federated Universities and Colleges’. http://www.towards2030.utoronto.ca/full.html#1
139 Alan Gilbert, ‘Positioning the University of Manchester as a Premium Provider’, ibid, p. 16.
6.2 Promoting a sense of community within the university

Many of the most highly ranked universities in the world actively cultivate a community feel on their campuses and they work hard to maintain a good relationship with their neighbours and the larger community outside the campus perimeters.

There is no doubt that cultivating a sense of community culture within the university campus is easier when the vast majority of students live on campus, and large numbers of academic and general staff live on or near the campus. When students live, study, work, volunteer and are entertained on the campus, they see each other and members of the academic and general staff regularly and they can all get to know each other, and some get to know each other well. When staff members and students also regularly eat together in dining halls or clubs and take part in community-related events and extra-curricular activities, each is likely to develop a strong sense of community and feelings of connectedness.

A recent occurrence at MIT illustrates the strength of the feeling of community and even of ‘family’ that is felt by some members of the staff there. In September 2007, Star Simpson was arrested at Logan Airport. Before Ms. Simpson, ’10, was able to return to MIT to seek help following her release, MIT issued the following press statement:

‘MIT is cooperating fully with the State Police in the investigation of an incident at Logan Airport this morning involving Star Simpson, a sophomore at MIT. As reported to us by authorities, Ms. Simpson’s actions were reckless and understandably created alarm at the airport.’

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This statement, made before MIT’s administration knew the facts of the case, caused an outcry and prompted John Belcher, MacVicar Faculty Fellow and Class of 1922 Professor of Physics, to write:

MIT is a community and in many ways an extended family. For our younger students in particular, we act in the absence of parents. If my son had been arrested at Logan Airport under the same circumstances as Star Simpson, and the Boston Globe had called me up for a comment, I would not have characterized him as reckless, and neither should MIT have made any such comment regards Simpson. The Boston Globe is not family. Star Simpson is.\textsuperscript{141}

Also at MIT there is an interesting initiative – the Hosts to International Students Program – designed to make international students feel part of the community and literally part of the ‘family’:

As many as 60 international students from about 30 countries participate in the MIT program annually, and are matched with about 80 Boston area families who are alumni, staff, and friends of the Institute. The goal is to give students access to a support system when they are so far from home.

Host families can pick up students at the airport, invite them to dinner, take them shopping, give them birthday parties, or call them before exams, letting them know that while they are far from home, they are not alone.\textsuperscript{142}

\textsuperscript{141} http://web.mit.edu/fnl/volume/202/belcher.html
\textsuperscript{142} http://spectrum.mit.edu/issue/2007-winter/one-family/
6.2.1 Employee housing

<table>
<thead>
<tr>
<th>Highlights:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• In recognition perhaps of the difficulty of purchasing housing in areas where real estate prices are high, and of the need to provide incentives to attract the very best academic and general staff, many universities are investing in housing services for their employees.</td>
</tr>
<tr>
<td>• The provision of housing near the campus enables employees to take part in extra-curricular activities at the campus and to spend more time interacting with each other and with students.</td>
</tr>
<tr>
<td>• Ultimately, if large numbers of academic and general staff live nearby, the community feeling of the campus extends to the surrounding area.</td>
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</table>

Many institutions provide housing or housing support for a large percentage of their employees as well as students. Universities are doing this because they are keen to encourage a sense of the university as a community, to which staff and students belong, and where there is a strong sense of staff as well as student engagement. In addition there is growing recognition of the need to improve the real value of staff remuneration in order to attract and retain top-quality staff in the context of national and international competition in the ‘war for talent’.

For example,

The University of Chicago helps maintain a strong base of high-quality, affordable housing for our students, staff, and neighbours. Sixty-five percent of faculty and 3,000 staff members live in neighbourhoods surrounding the campus. The University owns and maintains 2,000 rental units primarily for student and faculty housing.\(^{143}\)

Chicago also runs an ‘Employer-Assisted Housing Program’ to encourage employees to purchase houses in the community. Thirty-three percent of nearly 12,000 University and University of Chicago Hospital employees live in the area nominated by the Program. The University provides ‘Real Estate Operations Housing Services’ to ‘help qualified current and prospective faculty and staff members of the University of Chicago and the University of Chicago Hospital locate housing to purchase or rent in the University community’. The Housing Program provides interest-free loans and consultations.\(^{144}\)

\(^{143}\) [http://oca.uchicago.edu/housing/housing.shtml](http://oca.uchicago.edu/housing/housing.shtml)  
\(^{144}\) [http://reo.uchicago.edu/housing-services.shtml](http://reo.uchicago.edu/housing-services.shtml)
The University of Pennsylvania similarly provides substantial help to employees who want to buy or rent a home near the campus. They provide mortgage programs (including ‘forgivable’ loans for home improvements – no interest, no repayments and the debt reduces to zero after five years), and a range of homebuyer resources including an online mortgage calculator.\(^{145}\)

The issue of house prices affecting academics’ decisions about where to work is currently being discussed in the UK. Oxford and Cambridge now compete with US institutions such as Yale, Harvard and Princeton to recruit the best academics in the world. And, it is argued by some, the American institutions offer a better quality of life than the British ones. British universities are having to be more flexible with the remuneration and work packages they offer in order to recruit the staff they want.\(^ {146}\)

6.2.2 Keeping alumni in the university community

**Highlights:**

- US universities especially strongly encourage their alumni to remain active members of the university community.
- Some universities provide a sophisticated range of benefits and incentives for alumni to keep in touch and to volunteer their time and expertise.
- The universities deliberately develop a culture of ‘giving back’ and strategically position the relationship between students and alumni so that students understand that they are indebted to those who have gone before them and feel obligated to ‘give back’ in turn, to help future students.
- Alumni expertise is used in a range of ways including student recruitment, mentoring students, providing careers advice, arranging internships, and serving on committees.

The alumni of American universities, in particular, are often very much a part of the university community or ‘family’. US universities seem to be very good at instilling in each new cohort of students a strong sense of belonging or connectedness, but also obligation to their alma mater and this tends to result in greater involvement and giving back by alumni.

Many leading universities and colleges in the world, especially in the US, rely on their alumni not only for philanthropic gifts but also as volunteers. The University of Chicago is a good example: alumni are encouraged to stay in close contact with the University community and to provide direct help to current students and to fellow alumni.

\(^{145}\) [http://www.business-services.upenn.edu/homeownership/]
\(^{146}\) [http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=40093]
Hutchins\textsuperscript{147} said it sixty years ago—’If the alumni of a university do not maintain it—in thought and in action—there is no reason why anybody else should.’ Alumni volunteers are among the University’s most valuable resources. When you support Chicago by contributing your energy and resources to its programs, by sending your children or your neighbors’ children to explore admission, or by advocating for its interests and for higher education in general, you are maintaining the essential life and health of the institution. There are many ways to volunteer: alumni careers networks; alumni club volunteers; schools committees; reunions; student activities; student-alumni programs; and, student internships.

University of Chicago staff provides alumni volunteers with the training they need to plan reunions, recruit students, organise club activities or to mentor fellow alumni or students. The University runs regular training sessions, provides handbooks and guidelines and maintains an online discussion group where volunteers can compare notes and pass on tips for success and recognition for jobs well done.

The University also maintains a number of other useful resources such as ‘Career Contact’ – a searchable database of more than 15,000 alumni who have volunteered to provide informational interviews for students and alumni.

Members of Chicago’s ‘Alumni Schools Committee’ spread the word about their alma mater at local college fairs, informal receptions, and in off-campus interviews with local students:

The alumni interview is often the only face-to-face conversation that the applicant has with someone who has actually experienced life in the College, and this conversation is often instrumental in the student’s decision to enroll. Volunteering does not take much time (about fifteen hours per year) but it can make a big difference in prospective students’ understanding of the University.

Chicago encourages student-alumni interaction at a range of events and celebrations, as part of their ‘Student-alumni programs’, to discuss careers and explore general issues of life after college. They also proactively encourage alumni to organise internships for current students:

Do you have a special project in mind but no time to do it? Does your firm routinely hire college students as summer interns? Would you like to hear first-hand about life at the U of C today? If the answer is Yes! then we invite you to hire a Chicago undergraduate as an intern. They’re smart and inquisitive, bringing their Chicago training to bear on the job at hand – just like you do.

We’re always looking for experienced interviewers to help screen students for internships. You do not have to provide an internship to interview a student. To find out more about creating an internship and/or interviewing students, call….\textsuperscript{148}

MIT have a similar structure for encouraging alumni to remain active members of the university community. The web pages devoted to alumni relations keep alumni informed about the innovative achievements of current students. Seven thousand volunteers at MIT help with a diverse range of programs and services. ‘Volunteers get

\textsuperscript{147} Robert Maynard Hutchins – University of Chicago President 1929-45, Chancellor 1945-51.

\textsuperscript{148} http://www.alumni.uchicago.edu/volunteer.html
the satisfaction of giving back to MIT while networking with alumni and learning new skills’. Parents of students are also encouraged to volunteer.149

The University of Washington, Seattle, similarly puts considerable effort into making it advantageous for alumni to ‘stay connected’. Alumni are invited to lectures, events and celebrations at the University and they can access a range of discounts and benefits through being an active member of the Alumni Association. Alumni are encouraged to register for volunteer activities including mentoring and serving on committees – ‘staying connected makes a difference’.150

6.2.3 Fostering local community relationships

While many universities have not been especially good at neighbourhood relations, some institutions recognise their responsibilities within the economy and structure of the city or town in which the university is situated. These universities work in partnership with the local community to their mutual benefit. One of the reasons a university has a vested interest in the local community is because a large number of its employees live there.

For the University of Chicago ‘a thriving, productive, safe [local] community is a top priority’:

We are committed to improving the quality of life for our neighbors, particularly in the communities that surround our campus … Many of our faculty, staff, students, and administrators work closely with community organizations and other groups to improve health care, ensure neighborhood safety and amenities, create affordable housing, and support education. Through scholarship, artistic and cultural organizations, and rolling up our sleeves, we enjoy a mutually beneficial partnership with the communities around us.

Chicago regularly invites the local community onto its campus and welcomes them to free events:

Each year, the University sponsors hundreds of arts and cultural events that are open to the public. At venues such as the Court Theatre, the Oriental Institute and the Smart Museum, local residents and schools can participate in special cultural programs for no charge. Additionally, the University’s retail development initiatives help ensure the community’s ongoing vitality and economic health.151

At Princeton the ‘Office of Community and Regional Affairs’ is charged with linking the ‘gown’ with the ‘town’. Princeton ‘sponsors a number of community outreach activities and programs that respond to the general public’. They organise a range of activities including fetes, fireworks, festivals, parades, sporting events and a farmers’ market, as well as an annual Community Day, all of which are advertised in an online publication directed at members of the local community.152

149 http://alum.mit.edu/index.html
150 http://www.washington.edu/alumni/index.html
151 http://oca.uchicago.edu/community/
152 http://web.princeton.edu/sites/pucra
American institutions in particular place enormous emphasis on community service and strongly encourage and enable all students and staff to volunteer within the community (see Section 7.1.3 on ‘Community/Service learning’)

6.3 Undergraduate experience

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<th>Highlights:</th>
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<tr>
<td>• The provision of specialist support services aids student retention</td>
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<td>• Many universities offer a range of support services providing students with intellectual, spiritual and practical advice and guidance designed to help them make the most of their scholarly studies, enjoy the student experience, and cope with stresses and anxieties</td>
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<td>• Central to the ethos at most leading universities is the notion that the development of an interactive relationship with a significant and influential older adult mentor or advisor is of great benefit to students and can be transformative</td>
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<td>• Peer mentoring is very different to mentoring by an older adult but can help students to integrate into university life</td>
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<tr>
<td>• Alumni can be effective student and graduate mentors</td>
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<tr>
<td>• Many leading institutions have formal mentoring schemes for staff; junior teaching staff, women and minorities especially benefit from mentoring</td>
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<tr>
<td>• Academic advisors monitor students’ progress and assist with course choices</td>
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<tr>
<td>• In some institutions advisors are assigned to students once they have finished high school, or during Orientation week</td>
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<td>• Many leading institutions are developing a comprehensive approach to mental health care throughout the university community; they are also introducing a range of proactive strategies to improve specifically the general climate of mental well-being in the student community; they may also ensure that academic and general staff, mentors and advisors are aware of issues around mental wellbeing and are equipped with strategies to enable them to help students get professional advice</td>
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The University of Toronto’s *Green Paper* describes ‘the characteristics of the best public research universities’:

The best research universities, public or private, offer outstanding undergraduate experiences to their students. They offer highly integrated and effective student services. They ensure a campus ‘climate’ that welcomes diversity and difference and guarantees equal access to campus opportunities to all qualified students. They offer intellectually challenging and adventurous academic programs that enable students to achieve a set of commonly shared learning outcomes as well as expertise in a particular area of study. They don’t only teach students *about the subject matter* of a discipline, they teach students how to *do* the discipline (to think like a philosopher, an economist, an engineer). They involve their students in real research. They are deeply committed to engaged, stimulating and challenging undergraduate teaching. They
offer students a personally and intellectually rewarding experience of the university ‘beyond the classroom’ and they involve their students in the lives of their cities [and in the world]. They foster in their students a lifelong dedication to their alma mater. Many private and public research universities have created undergraduate research opportunity programs. In these programs, students as early as first year work with a faculty member on the faculty member’s research projects. They carry out significant research tasks, and may be mentored and supervised not only by the faculty member but by other members of the research team (original emphases).153

Typically the world’s leading universities achieve significant success in their focus on the attributes described in Toronto’s Green Paper, which are summarised as follows and expanded upon in this discussion paper:

- **Excellent student services** – teaching institutions that pay attention to the personal as well as the academic wellbeing of the student offer a network of support services including pastoral and spiritual care.
- **Mentoring** – the provision of support by mentors who are senior academics and/or peers is recognised by the top universities as of immense value.
- **Working closely with academics** – close interaction between teachers and students is recognised in the world’s leading institutions as fundamental to the best student learning experiences.
- **Diverse community** – as already discussed, leading universities recognise the important benefits that accrue from students mixing with others from as diverse a range as possible of students and teachers from other cultural and ethnic backgrounds as well as disciplines.
- **Equal opportunity** – leading universities aim to ensure equal opportunity and respect for all qualified students regardless of age, gender, sexual orientation, or disability, religious, cultural or ethnic background.
- **Challenging curriculum** – world-class universities commonly aim to offer a top quality broad-ranging innovative curriculum. In many places undergraduate courses are not primarily vocational but are general or ‘liberal’, giving students a wide range of knowledge and developing independent study skills and, in particular, writing and communication skills.
- **Excellent teaching** – in leading institutions there is a clear focus on teaching quality including on equipping graduate students and new junior academics with classroom skills.
- **Focus on undergraduate education** – leading universities and colleges are fully committed to excellence in educating undergraduates and assign their top academics to teach undergraduate courses and seminars.
- **Clearly defined learning outcomes** – many of the leading universities clearly define the goals and outcomes of the courses they offer and provide academic advisors to help students to clearly define their personal career goals and to determine relevant course choices.
- **Commitment to the highest academic standards** – leading educational institutions are committed to excellence in teaching and in research.

• **Mastery of the subject matter** – typically leading universities encourage students to master their subjects thoroughly, to question and to become critical and independent thinkers.

• **Outside classroom activities** – many leading universities and colleges provide, or encourage students to take part in a wide range of activities, including intellectual (major public lectures, seminars etc.) and others including community service, music, drama, sport, etc.

• **Involvement in the life of their local community** – the world’s leading teaching institutions often encourage and enable students to become involved in a range of service and cultural activities within their local community.

• **Study or work abroad** – many of the leading institutions encourage and enable their students to study overseas and/or to become involved in community service projects overseas.

• **Dedication to the alma mater** – leading universities typically foster a lifelong sense of belonging to the institutional community.

• **Research opportunities** – the finest teaching institutions in the world are strongly committed to creating research experience opportunities for undergraduate students.

### 6.4 Student support

University student support services usually offer assistance with a range of issues including academic, accommodation, anxiety, careers, cultural, dental, depression, health, immigration, jobs, learning support, mental health, money matters, residences, security and spiritual.154 In this discussion paper, mentoring and academic advising, pastoral and mental health care will be considered in particular.

Both the effectiveness and students’ enjoyment of their learning experience can be greatly enhanced by contact with a range of professional support staff. Additionally, according to the UK’s National Audit Office, the provision of specialist support systems is a means of improving retention rates.155

Many of the world’s leading universities place a strong emphasis on offering academic and personal guidance, and also support services that can help students deal with a range of issues including mental wellbeing. Mentoring, academic advising, pastoral care and mental health care are overlapping rather than discrete categories.

#### 6.4.1 Mentoring

The development of a meaningful working relationship with a teacher and the provision of personalised, highly interactive learning have already been discussed as elements of the most effective student learning experiences.

The terms mentoring and advising tend to be conflated or used interchangeably. For the purposes of this paper, however, ‘mentoring’ will be taken to refer to an interactive relationship between a (senior) academic/staff member and a student; the mentor may provide academic advice but also assists the student with choices relating

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154 [http://www.bath.ac.uk/students/support/](http://www.bath.ac.uk/students/support/)
to their academic and professional careers and even with life skills. An academic ‘advisor’, on the other hand, provides the student with advice specifically focussed on course choice and the trajectory of their degree.

Students benefit greatly from getting to know significant and influential older adults, who may be teachers or others, who can mentor, empower and advise them about their studies, their lives and their future. According to Richard Light, ‘Good [mentoring] may be the single most underestimated characteristic of a successful college experience’. In Light’s opinion, ‘the single most important bit of advice’ that it’s possible to give to first-year students is ‘get to know one faculty member reasonably well this semester, and also to have that faculty member get to know you reasonably well’.

Mentoring is … a personal relationship. It involves professors acting as close, trusted and experienced colleagues and guides … It recognizes that part of what is learned … [at university] is not cognitive; it is socialization to the values, norms, practices, and attitudes of a discipline and university; it transforms the student into a colleague. It produces growth and opportunity for both the mentor and the student.

The importance of recognising and valuing mentoring as part of an academic’s daily job is also significant. For example, at Mount Holyoke College, mentoring is considered ‘as part of tenure, reappointment, and post-tenure reviews’. The College has set up series of workshops to develop mentoring skills for faculty and students involved in peer mentoring. Significantly the College refers to mentoring by faculty and peer mentors as ‘a form of teaching [which] should be conceptualised as such’. The importance of a ‘team’ of mentors especially during the first two years of students’ college career is emphasised. Following consultation, programs have been developed aimed specifically at ‘students of color and those with limited financial resources’.

The mentoring network at the College includes administrative staff and alumnae as well as academics and more advanced students. The Mount Holyoke action plan determines that the College will:

engage alumnae more comprehensively with aspiring students. The Commission encourages … collaborat[ion] in building alumnae sisterhood networks that will bring alumnae in the professions into productive mentoring relationships with students. These networks can operate online, on campus, and on-site at alumnae workplaces. The Alumnae Association and departments should collaborate to develop alumnae liaisons with departments and programs. These could help current majors more effectively to connect their academic aspirations with career aspirations.

Of course, mentoring is not only beneficial for students but also for staff members. Staff at Duke University have produced an excellent document relating to the

156 Light, p. 81.
157 Ibid, p. 86, also quoted above.
158 University of Arizona, Graduate Council http://depts.washington.edu/cidrweb/Bulletin/Mentoring.html
159 http://www.williams.edu/biology/divsciences/plans/Mt_Holyoke_action_plan.pdf
160 http://www.mtholyoke.edu/offices/inclusive/13110.shtml
161 http://www.williams.edu/biology/divsciences/plans/Mt_Holyoke_action_plan.pdf
mentoring of faculty which highlights a range of principles and best practices. The foundational principles of Duke’s mentoring scheme relate to professional development, the well-being of the institution and the maintenance of a respectful and positive work environment.

Mentoring is a critical component of the professional development of junior faculty and the well-being of the institution. Mentoring effectively across the institution will help us in our efforts to diversify our faculty through improved retention rates of women and under-represented minority faculty in certain fields. Mentoring is also an important component of a respectful, positive work environment. Thus, Duke University seeks to strengthen its mentoring ‘culture’ by making mentoring a priority and by undertaking and/or regularizing sound mentoring practices, among faculty as well as across the generations of undergraduate students, graduate and professional students, [and] post-doctoral fellows.

While the document stresses the importance of mentoring for ‘junior faculty’, women (especially in the sciences) and minorities, it also suggests that tenured professors benefit from mentoring.162

### 6.4.2 Academic advising

‘Academic advising’ usually relates primarily to advice given to students concerning their choice of units, majors and programs. It may also relate to advice about students’ progress. At Trinity College, Duke University:

Academic advising … accomplishes two related tasks: monitoring of students’ academic progress toward the bachelor’s degree and assisting students in a variety of ways in exploiting their talents and the resources available to them at Duke. The first of these tasks is attended to primarily by the deans of Trinity College, by the Academic Advising Center staff and, when students have declared a major, by departmental directors of undergraduate studies. Everyone associated with the Trinity College academic advising system contributes in various ways to the assistance of students. … The Academic Advising Center oversees approximately 125 academic advisors who each work with a cohort of first-year students and sophomores until they declare a major. These advisors include faculty members who hold teaching appointments in the faculty of Arts & Sciences and senior administrators and staff in Trinity College. All are volunteers and all are motivated by a genuine wish to serve the first-year and sophomore community. The essential responsibility of the academic advisor in the first and second year is to help students adjust to academic life at Duke by introducing them to the curriculum and to the resources of the college and by seeing to it that each student’s program has a defined purpose. … While each student bears the primary responsibility for decisions about his or her program of study and the selection of courses, the academic advisor assists the student in making informed choices and helps to steer the student away from pitfalls. Helping the student to make and to be responsible for his or her own academic decisions is one of the advisor’s most important contributions to the student’s educational and personal growth.163

At the University of Pennsylvania, new students are assigned to advisors at the end of high school:

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162 [http://www.provost.duke.edu/policies/Faculty_Mentoring_Initiative.htm](http://www.provost.duke.edu/policies/Faculty_Mentoring_Initiative.htm)
163 [http://advising.trinity.duke.edu/overview.html](http://advising.trinity.duke.edu/overview.html)
Upon matriculation, each student in the College is assigned an academic advisor who is a member of either the School of Arts and Sciences faculty or professional staff. In addition … you will have various other advisors available to you throughout your time in the College. Peer advisors will provide student perspectives. Professional advisors from offices such as Career Services and the Office of International Programs will lend their special expertise, as will faculty you encounter in your classes. Each will contribute in their own way to your effort to set academic goals and decide what really matters to you.164

At Amherst professors and academic advisors assist new students with course selection during Orientation week:

With its close-knit community, Amherst offers a strong support network. You’ll find encouragement, inspiration and advice throughout campus. As an incoming student, you’ll be able to tap into the knowledge of your academic advisor, along with that of a group of about 50 professors who work with new students to navigate the course selection process during Orientation week. You’re also likely to develop informal relationships with professors, deans and upperclassmen who can serve as mentors and offer guidance on how to take advantage of Amherst’s many resources … Ensuring plenty of individual attention Amherst faculty members each work with no more than five first-year advisees.165

Specially selected peer advisors at Princeton work in conjunction with faculty advisors, to provide new students with advice and anecdotes about life as a student:

By sharing reflections and anecdotes based on personal experience with a particular concentration [major] as well as various courses, certificates, and other academic opportunities available at Princeton, peer advisers provide first year students with a wealth of subjective information that often complements the advice found in more formal handbooks on academic advising. First year students generally find it helpful to speak with a fellow student when they’re deciding on their classes, workload, and the overall approach they are taking toward their academic work. Peer advisors for A.B.166 students are selected by their director of studies because they have been successful students in their departments and certificate programs, are passionate about their chosen areas of study, and have strong communication skills. Each college recruits a team of peer advisors roughly equivalent to their team of faculty advisors, attempting to achieve balance across the natural sciences, social sciences, and humanities.167

6.4.3 Student welfare

Student welfare assistance or pastoral care is usually provided by universities/colleges and is sometimes also available through religious organisations. It is offered in addition to a range of support services both medical and non-medical.

At Oxford University, for example:

The college system of non-medical pastoral care enables minor problems to be addressed and is appropriate for resolving practical or academic problems which give

164 http://www.college.upenn.edu/admissions/advising.php
165 http://www.amherst.edu/admission/academics/mentoring_advising.html
166 Bachelor of Arts degree.
167 http://www.princeton.edu/odoc/advising/peer_advisers/
rise to anxiety or stress. However, it is not equipped to deal with more serious emotional and psychological problems which require professional intervention. For these problems it normally acts as an early warning system that identifies students in need of professional help, whether that help is provided by a doctor, a nurse or the Student Counselling Service.  

6.4.4 Mental health care

In recognition of the increase in the numbers of students experiencing mental health problems, many universities are introducing a range of proactive strategies to ‘improve the general climate of mental well-being in the student community’ and to ‘reduce the risk factors which exacerbate or trigger mental health difficulties’.

In some cases mentoring schemes are being suggested for new students as ways to reduce isolation and to help with the settling-in process. While some places may require students to opt-in, others employ more proactive strategies and assign a peer mentor or buddy to every new first-year student:

Mentoring and peer support schemes may be effective ways of reducing some of the major sources of stress which are reported by students: a sense of isolation, disorientation and anxiety about what is expected of them. Such schemes can be popular with institutions in view of the limited resource implications involved. Mentoring schemes for first-year students … have been introduced by some institutions to make the process of adapting to student life less daunting. These schemes may vary from the voluntary opt-in scheme where all students are offered the service if they wish, to more formal schemes where all new first year students may be allocated a mentor (usually a second year student). The emphasis may be on academic support, by matching students within subject groups, or it may be more general, concerned with the overall settling in process. If a mentoring scheme is available with no reference to specific needs, it may help to create a climate where students have more realistic expectations, acknowledging that there is need for support and there is nothing wrong with asking questions. People generally (this applies to the workplace equally) feel more comfortable asking general questions about a new environment of peers than of people who may be judging them at a later date (e.g. tutors).

Strategies which may help to reduce levels of anxiety and stress that can lead to mental health problems include: increasing students’ feelings of belonging to a community while they are at university; increasing their levels of engagement with their studies, and with extra-curricular activities; increasing meaningful interaction

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168 [http://www.admin.ox.ac.uk/shw/mhpol.shtml](http://www.admin.ox.ac.uk/shw/mhpol.shtml)

169 ‘College students frequently have more complex problems today than they did over a decade ago, including both the typical or expected college student problems - difficulties in relationships and developmental issues - as well as the more severe problems, such as depression, sexual assault and thoughts of suicide. That is the finding of a study involving 13,257 students seeking help at a large Midwestern university counseling center over a 13-year period. Some of these increases were dramatic. The number of students seen each year with depression doubled, while the number of suicidal students tripled and the number of students seen after a sexual assault quadrupled’. These findings were reported in the February issue of *Professional Psychology: Research and Practice* (2003), a journal of the American Psychological Association (APA). [http://www.apa.org/releases/student_problems.html](http://www.apa.org/releases/student_problems.html)


with their teachers and with their peers; and having in place strong, easily accessible networks of support.

6.4.5 Proactive strategies and a comprehensive approach

It is possible to argue that all universities provide a range of student support services such as have been described, to a greater or lesser degree. But it is perhaps the universities that see the mental wellbeing of the whole community as a university-wide issue, rather than just a counselling services issue, and that take a particularly proactive stance – assigning peer mentors or buddies rather than having opt-in schemes, for example – that stand out and may be argued to be providing excellent student support.

At Colgate University, for example, a Wellness Initiative is underway which encompasses the whole campus community and aims to cover the intellectual, emotional, social, physical, spiritual and vocational areas of people’s lives. A range of activities is focussed on first-year undergraduates in particular. These have or will cover issues such as the use of alcohol, tobacco and drugs; body image and eating disorders; fitness and diet; stress and anxiety; and sleeping patterns.\(^\text{172}\)

Both the California Institute of Technology (Caltech) and Pennsylvania State University (among others) are members of the ‘Ulifeline’ network. Each university can customise the appearance of the Ulifeline website for their particular community.

Ulifeline is an anonymous, Internet-based resource that provides students with a non-threatening and supportive link to their college mental health center. Ulifeline uniquely combines the following features into one Web site and serves as students’ one-stop online resource for mental health information. Ulifeline complements and enhances the existing offerings of your mental health center.

- **Self-e-Valuator.** Developed by Duke University Medical Center, the Self e-Valuator is a screening program designed to help students uncover whether they, or a friend, are at risk for depression, suicide, and several other disorders, including alcohol and drug dependence, eating disorders, generalized anxiety disorder, and obsessive-compulsive disorder.
- **Mental Health Reference Library.** The mental health reference library provides quality, user-friendly information that has been reviewed and approved by leading medical experts at Harvard Medical School.
- **Go Ask Alice!** Produced by health educators at Columbia University, this in-depth health question-and-answer Internet site contains an archive of hundreds of responses to anonymously-posed inquiries from college students worldwide.
- **Concerned about a Friend.** This section, provided by the National Mental Health Association, describes the warning signs for depression and suicide, includes information regarding how to help a friend, and lists resources for additional assistance.
- **Drug Reference Database.** The drug reference database provides information about prescription medications, potential drug interactions, as well as common side effects.\(^\text{173}\)

\(^{172}\) [http://www.colgate.edu/DesktopDefault1.aspx?tabid=3458]  
\(^{173}\) [http://www.pct.edu/career/counselingServices/ulifeline.htm]
Caltech’s Counseling Center makes faculty members, staff and advisors aware of issues around mental health, which they may be faced with and will have to deal with appropriately:

The Caltech Student Counseling Center is committed to helping graduate and undergraduate students achieve academic excellence and enjoy a rewarding experience while studying at Caltech. We realize that while most students cope successfully with the challenges these years bring, a number of students find the various pressures of life stressful – sometimes to the point of interfering with their academic studies and emotional well-being. As faculty members, staff, and advisors, you may encounter these distressed students in your offices or classrooms. Many of these students have not sought any psychological help. Thus, your role can be a crucial one in identifying and referring students who are in distress. We hope the following information is useful in helping you with this process…..

7. Student learning

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<tr>
<td>The most memorable student learning experiences often occur outside the classroom and may involve the development of meaningful relationships with others</td>
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In his research into the best student learning experiences Richard Light assumed that the most important and memorable academic learning goes on inside the classroom, while outside activities provide a useful but modest supplement. The evidence shows that the opposite is true: learning outside of classes, especially in residential settings and extra-curricular activities such as the arts, is vital. When we asked students to think of a specific, critical incident or moment that had changed them profoundly, four-fifths of them chose a situation or event outside of the classroom.175

At Harvard: ‘There is fairly universal agreement that much of the value of a Harvard education lies in things learned outside the classroom and in the relationships established with others in the community, especially with fellow students. 176

Richard Light and the Harvard website extol the virtues of learning outside the classroom and, as has already been discussed in this paper, students learn much of value through meaningful contact with other students, with members of the university community and with members of the local and global communities.

This section of the discussion paper will look at a range of learning experiences and extra-curricular activities.

174 http://www.counseling.caltech.edu/guide/index.html
175 Light, p. 8.
176 http://www.admissions.college.harvard.edu/experience_harvard/beyond_the_classroom/index.html
7.1 Experiential learning

Experiential learning refers to a broad spectrum of educational experiences, such as study abroad programs, community service, fieldwork, sensitivity training groups, workshops, internships, cooperative education involving work in business or industry, and undergraduate participation in faculty research.

These activities are designed to put concepts learned in the classroom into practice in real-world situations. Experiential learning is any of a variety of approaches for allowing students opportunities outside the classroom to enact the concepts learned through in-class discussions, reading, writing, or other activities. Experiential learning includes activities … [which] are intentionally linked to the academic goals of a course or cluster of courses.

This paper will consider the following experiential learning strategies: participation in research; study abroad opportunities; community/service learning; and interfaith learning.

7.1.1 Participation in research

- Some leading universities are striving to link all their academic programs to strong research experiences thus improving the teaching/research nexus
- Some universities have undergraduates work with academics on their current research and/or allow students to design and conduct their own research projects, supervised by an academic
- Some research programs for undergraduate students are integrated into semester coursework; other research opportunities take place over summer
- Meaningful research opportunities are being provided for first-year students
- At some leading research universities students undertaking research can earn academic credit, or pay, or work as volunteers
- Students gain experience at all stages of the research project, including writing proposals and presenting findings
- Research opportunities allow for meaningful interaction with academic staff, who often act in a mentoring capacity
- Some leading institutions also provide opportunities for off-campus and overseas research
Some leading universities are striving to link all their academic programs to strong research experiences through seminar and research courses or through research-related work experiences. In some cases grants are being made available to allow students to collaborate on an academic’s current research or undergraduates are being funded to conduct their own research projects under academic supervision.

At Stanford, research completed by undergraduates is presented at an annual Symposium:

The Undergraduate Research Programs office sponsors grant programs to aid undergraduate participation in the production of new knowledge. Grants can be awarded to faculty and departments to allow collaboration on faculty members’ current research. Or grants are awarded directly to undergraduates to allow students to design their own research projects under faculty supervision … In 2006, the Summer Research College provided a scholarly community for 250 undergraduates in 30 fields. Some 135 undergraduates presented original research at the Symposium of Undergraduate Research in Progress.180

One of the goals of the University of Toronto is to link all our undergraduate, graduate, and professional academic programs to strong research experiences. Progress towards this goal in the undergraduate arena is reflected in the integration of teaching and research through seminar and research courses or research-related work experience. ... These programs also frequently offer summer research opportunities to students. The 199 program, introduced by the Faculty of Arts and Science in 1994, provides a research seminar learning environment for approximately 40% of the first-year class. Overall, student enrolment in undergraduate seminar and research courses has increased by 42% since 2000-01. Further, approximately 2,000 students (2006) were reported to have been engaged in formal research experience programs or research work. The University is strongly committed to creating additional research experiences for undergraduate students. Local work experience and exchange programs are growing as well: in 2006, 1500 undergraduate students on the Scarborough campus participated in their distinctive co-operative program.181

As well as ongoing research opportunities during semester, both Stanford University and the University of Toronto offer research-intensive summer programs to students. As mentioned before, close personal interaction with an academic supervising or mentoring a research project is also extremely valuable for the student learning experience.

MIT runs the Undergraduate Research Opportunities Program (UROP), which is aimed at cultivating and supporting research partnerships between undergraduates and faculty. It is one of the earliest programs of its kind in the US (created in 1969) and it invites undergraduates to participate in research as the junior colleagues of MIT faculty.182

180 http://www.stanford.edu/home/stanford/facts/undergraduate.html
181 University of Toronto, The University’s Future Role – Undergraduate Education. http://www.towards2030.utoronto.ca/full.html#1
182 http://web.mit.edu/UROP/basicinfo/index.html
UROP supports undergraduate and faculty collaborations in areas such as cancer research, cognition and language processing, alternative energy, educational innovation, the humanities, nanotechnology, finance, genetics, bioengineering, service learning, and more. The possibilities are endless. Students usually join a faculty member’s project, but they may also design their own and recruit faculty to advise them. They can earn academic credit or pay, or work as volunteers (emphasis added).183

UROP offers the chance to work on cutting edge research—whether you join established research projects or pursue your own ideas. As UROPers, undergraduates participate in each phase of standard research activity: developing research plans, writing proposals, conducting research, analyzing data and presenting research results in oral and written form. UROP projects take place during the academic year, as well as over the summer, and research can be done in any academic department or interdisciplinary laboratory. Projects can last for an entire semester, and many continue for a year or more. … MIT students use their UROP experiences to become familiar with the faculty, learn about potential majors, and investigate areas of interest. UROPers gain practical skills and knowledge they eventually apply to careers after graduation or as graduate students.

Each UROP program must involve: research work worthy of academic credit; active communication between the undergraduate and faculty supervisor, who is responsible for guiding the intellectual course of the student’s work and acts as a mentor and advisor; a research proposal or statement of purpose written by the student that describes the planned research; and evaluations of the UROP experience written by both the student and the faculty supervisor. Students may also take part in UROP programs off-campus or overseas with MIT-affiliated sites. Exceptional guidance and mentoring in a research setting is recognised by the annual ‘Outstanding UROP Mentor Award’.184

Many universities require final-year or honours students to undertake capstone units or projects, which have strong research components. One of the aims of the strategic plan at Colgate University (a liberal arts college and research university in New York state), for example, is to strengthen its scholarly community and profile, and one of the ways in which the University plans to do this is by having students in ‘each department and program’ undertake a student capstone experience, involving original research, creative composition, and/or capstone seminars [which] will help students in all fields learn to postulate problems, generate solutions, test them, analyze results, and draw conclusions that may lead to even deeper levels of discovery. These skills are useful, if not essential, in all professions and graduate programs.185

The Colgate University News reported on the capstone experience of one particular group of students, which combined service learning and original research:

As part of their Interdisciplinary Investigation in the Environment capstone course, the undergrads spent the past several months studying Sauquoit Creek for the Utica-based Sauquoit Creek Intermunicipal Commission (SCIC). They discussed their

183 http://web.mit.edu/facts/undergraduate.html
184 http://web.mit.edu/UROP/basicinfo/index.html
185 http://people.colgate.edu/tokeeffe/strategicplan/splan.doc
research on the creek’s environmental history, recreational development, flooding, biochemistry, and the use of the land around it, and offered recommendations directly to the SCIC at a special meeting Wednesday in the Oneida County offices. … The students — who are environmental biology, environmental geology, environmental geography, or environmental economics majors — spent [several] months wading through the creek gathering samples, attending town meetings, speaking with community leaders, and culling through town archives for historical data.186

7.1.2 Study Abroad opportunities

### Highlights:

- Many universities are proactive in enabling and encouraging students to study, take up internships, conduct research or take part in community service work overseas
- Some universities offer credit for study or work abroad
- Students are being particularly encouraged to apply for opportunities in non-English speaking countries
- Alumni can provide resources and expertise to enable study/work abroad opportunities for students
- Universities in the UK are being encouraged to adopt study/work abroad opportunities as policy; to make their study/work abroad programs as flexible as possible; and to set up credit transfer systems so that valuable student experiences are properly accredited and acknowledged on academic transcripts
- Many universities are setting up study/work abroad offices and centres, dedicating interactive web pages to study/work abroad, arranging study abroad ‘fairs’, speaker series and discussion sessions

Many universities are doing all they can to encourage their students to undertake study abroad including, in some cases, utilising the expertise and international reach of their alumnae to facilitate this:

in the United States, institutions are mobilizing their alumni to facilitate overseas placements of their students in summer internships in business or service organizations to prepare them for global careers. Yale and Harvard have led the way by offering at least one international study or internship opportunity abroad to every undergraduate and providing the financial resources to make this possible.187

Stanford offers students study abroad, internships, research projects and public service opportunities including short courses and longer programs:

Stanford offers study opportunities in Australia, Beijing, Berlin, Florence, Kyoto, Moscow, Oxford, Paris and Santiago. Students may enroll for one or more quarters at most centers and participate in internships, research projects and public service. Seven hundred and twenty-three students studied abroad with Stanford in 2005-06. Also offered are Overseas Seminars, which are three-week academic courses in

locations around the world. Past seminars have been offered in Bhutan, China and South Africa.\textsuperscript{188}

Princeton also encourages and enables students to explore study abroad options:

Seeing yourself and your world through an unfamiliar lens can have a significant impact on your studies, deepen your understanding of yourself, and challenge your assumptions about the world. Having learned to adjust to another culture and educational system, students return from study abroad with a new level of confidence and a better sense of what they want to accomplish as undergraduates and beyond. In today’s globalized world, it is critical that students learn to appreciate and function in different cultures and contexts. The Study Abroad Program allows you to receive Princeton credit while spending either one semester or an academic year abroad. The program is open to spring-semester sophomores, all juniors, and fall-semester seniors. Applications to non-English-speaking countries are especially encouraged.\textsuperscript{189}

Universities that are well on the way toward becoming internationalised strongly promote study abroad options. At Queen’s University in Canada, for example, an annual ‘Crossing Borders Study and Work Abroad Fair’ is held with a range of exhibitors and contributions from students who have experienced study abroad. The University also runs a ‘Study & Work Abroad Speaker Series’.\textsuperscript{190}

The House of Commons Education and Skills Committee in the UK has recognised ‘the problem of students’ unwillingness to study abroad’ and suggests that it can be addressed in a number of ways: the higher education sector should be ‘more strategic’ and ‘decide as a matter of policy that more students should spend time in another country and aim to facilitate that’; the flexibility of the system could be improved by allowing students to study abroad for 3 or 6 months rather than a whole year; having a ‘proper credit transfer system would clearly also be of great benefit’. The Committee suggests the current situation ‘be addressed rapidly to ensure that the UK does not lose out in both cultural and economic terms’.\textsuperscript{191}

Recently Princeton extended the idea of study/work abroad to the ‘gap’ year. They have initiated a new ‘international bridge year program that will allow newly admitted undergraduates to spend a year of public service abroad before beginning their freshman year’.

The proposed program would be open to undergraduate students who accept Princeton’s offer of admission and then apply to participate in a public service activity in a foreign country before enrolling. North American students would be expected to spend their year outside North America, and international students from outside North America would agree to spend their bridge year away from their home country.

Princeton anticipates that the program will be available to around 10 percent of undergraduates (around 100 students) and that it will be open to any admitted student

\textsuperscript{188} http://www.stanford.edu/home/stanford/facts/undergraduate.html
\textsuperscript{189} http://www.princeton.edu/odoc/international_opportuniti/
\textsuperscript{190} http://www.queensu.ca/quic/WSA/advising/crossingborders.htm
regardless of financial circumstances. The program is designed to ‘help our students thrive as citizens and leaders in that world, and increase their ability to appreciate all of the elements of a Princeton education’.\(^\text{192}\)

According to the Global Competence and National Needs Commission in the US,

> What nations don’t know *can* hurt them. The stakes involved in study abroad are that simple, that straightforward, and that important. For their own future and that of the nation, college graduates today must be internationally competent (emphasis added).\(^\text{193}\)

### 7.1.3 Community/service learning

<table>
<thead>
<tr>
<th>Highlights:</th>
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</thead>
<tbody>
<tr>
<td>• Community service learning is an integral aspect of a university education in many leading universities in the US and Canada especially</td>
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<tr>
<td>• Large numbers of students, academic and general staff across faculties are engaged in community service on a regular basis</td>
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<tr>
<td>• Many universities are proactive in leading and assisting community efforts to improve education, health care, the revitalisation of neighbourhoods and fostering economic development in their local areas</td>
</tr>
<tr>
<td>• Many universities approach student education holistically, aiming to produce graduates who are civic leaders and engaged in their communities in addition to being well educated</td>
</tr>
<tr>
<td>• Students are being encouraged to put the theory they learn in the classroom into practice in local, provincial, national and global contexts</td>
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The strategy of incorporating the concept of service learning and community service into the curriculum and encouraging and enabling students to become involved in it is widespread and ‘embedded culturally’ in the US and Canada especially.\(^\text{194}\) The most highly-ranked universities and colleges in the US and Canada run service learning programs and the emphasis on community service and service learning is increasing.

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\(^\text{192}\) A working group ‘will explore the costs that will need to be covered, including program fees, living expenses and travel, and what levels of financial aid will be necessary to ensure that admission to the program can be provided on a fully need-blind basis. No students would be charged tuition during their bridge year’. [http://www.princeton.edu/main/news/archive/S20/33/53G33/index.xml?section=topstories](http://www.princeton.edu/main/news/archive/S20/33/53G33/index.xml?section=topstories)


Service learning is defined as ‘a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities’.195

Service learning is specifically intended to integrate what is being learned in the classroom with the practical experience of community service and to incorporate back into the classroom situation students’ reflections about what they have learnt in the community and about themselves, through their volunteer service.

In addition, it is intended that students learn a sense of responsibility to their communities; community organisations benefit from students’ work; and valuable links are forged between the university and the local community. Service learning therefore serves the local community, individual students and the university.

The mission of the University of Maryland’s Office of Community Service-Learning is to promote service-learning as an integral aspect of education and to foster university engagement within the larger community. More specifically, we promote leadership, community service-learning and student involvement as integral aspects of college education. We facilitate leadership learning and community service-learning across curriculum and co-curriculum for lifelong application. We promote leadership, civic engagement and multicultural competence within individuals, groups, and systems for the advancement of socially responsible citizenry.196

At Yale University, the institution’s responsibility as the State’s largest corporate citizen is recognised:

More than two thousand … students, as well as many of our faculty, are actively engaged in volunteer service on a regular basis. This involvement pervades each of our professional schools – from Medicine and Nursing to Management and Divinity – as well as Yale College and the Graduate School. We must nurture this manifest sense of civic responsibility in our students, and, as New Haven’s largest corporate citizen, we must assume leadership as an institution in community efforts to improve education and health care, revitalize neighborhoods, and foster economic development.197

At Queen’s, Ontario, a broad national and international view of service learning and community engagement is being encouraged:

Many of the challenges facing Canada will require the full engagement of its institutions of higher education, institutions which instill in their students a sense of involvement and civic responsibility, embracing their role as agents of change responsive to societal needs. Queen’s will be such an institution, where students and faculty together create an active learning environment with individual growth achieved in the context of civic leadership and societal involvement. Such learning will not be limited to formal teaching spaces. All our students should have the opportunity to contextualize their specific programs of study with respect to local, provincial, national and global issues. Queen’s will be distinctive to the degree that it

195 http://www.servicelearning.org/what_is_service-learning/service-learning_is/index.php
196 http://www.csl.umd.edu/
engages in unprecedented ways with its students and its local, provincial, national and international communities.\textsuperscript{198}

A substantial body of research into service learning methodology exists which underpins development and identifies best practice. Professional associations, publications and scholarly groups support academic staff.\textsuperscript{199}

The experience of community service learning is enhanced in America because so many students live on campus. As Anne Langworthy argues, ‘allegiance is built by the experience of life on campus … [and] it is not surprising then that alumni contribution to universities is significant or that over 50 percent [of institutions] report that students participate in … civic activity’.\textsuperscript{200}

In the US philanthropy is growing: donations from individuals, foundations and business corporations (excluding corporate sponsorship and volunteering) increased 6.1% in 2005 to $260 billion, doubling over the decade.\textsuperscript{201}

In such a climate as this, Langworthy suggests, community service learning is seen as ‘a credible and legitimate scholarly activity’ and worthy of attention by the Carnegie Foundation, for example. In 2006 the Foundation adopted an elective classification system for universities that choose a community-engaged mission:

That framework evaluates how the institution categorises community engagement scholarship and includes a set of self-assessment questions on curricular engagement or service learning (how many formal, for credit courses; in how many departments; how many students participating; learning outcomes, etc.).\textsuperscript{202}

Langworthy claims that while there is a groundswell of interest in Australia in the service learning concept, it would take a significant cultural change for it to be widely adopted as policy.\textsuperscript{203} Furthermore, Langworthy is of the opinion that service learning is interpreted and ostensibly rejected by most Australian universities as philanthropy and therefore not a credible part of a core and accountable business plan.

In the long run, however, it is possible that universities might benefit financially by adopting a more philanthropic attitude to local, national and international communities – leading by example and developing within the university community a culture of giving.\textsuperscript{204}

\textsuperscript{198} ‘Engaging the World’: Queen’s Strategic Plan, 2006 http://www.queensu.ca/engaging/context/
\textsuperscript{199} Langworthy, ibid, p. 1.
\textsuperscript{200} Ibid. p.3.
\textsuperscript{202} Langworthy, ibid, p. 3.
\textsuperscript{204} Vice-chancellor Steven Schwartz at Macquarie University has recently announced (May 2008) that from 2010 all Macquarie students will have to undertake volunteer work with local communities throughout Australia, the South Pacific and Southeast Asia as part of a Global Futures Program. A partnership has been arranged with Australia Volunteers International, which will give undergraduate students the opportunity to do volunteer work overseas. http://www.theaustralian.news.com.au/story/0,25197,23652148-2702,00.html
(See also Section 7.1.2 on Study Abroad opportunities which also refers to overseas community service learning opportunities)

7.2 Interfaith learning

**Highlights:**

- Some universities are aware of the need for graduates to respect and be able to navigate through areas of religious difference
- Some universities are doing all they can to recruit a diverse range of students from all over the world and to promote interfaith and intercultural dialogue
- Some universities go to considerable lengths to support and enable students’ religious lives, whatever their religion

In discussing the fact that ‘strength in the arts and humanities is … a must for universities that aim to be national leaders in political and cultural debate’, Martin Ince, contributing editor of the *Times Higher Education*, comments also that ‘some areas of the humanities such as religion have emerged from genteel obscurity to new political and cultural importance in a globalised world with a new awareness of security and international tension’. 205

Princeton recognises the need for its students to be aware of and to be able to navigate through areas of religious difference:

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we do all we can to support religious diversity, we are equally concerned to help all of Princeton’s students to respect religious difference and to navigate it successfully. Thus we pour considerable energy into promoting inter-religious dialogue and providing opportunities for students to gain skill and comfort in raising and discussing questions relating to faith and ethics. 206
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And at Columbia University, the Office of the Chaplain administers a fund which encourages recognised student groups to collaborate on projects that promote intercultural and interfaith awareness and understanding among students of diverse backgrounds and perspectives. Project examples include ‘an open forum on Israeli/Palestinian issues that brings together interested students to increase dialogue and discuss divergent points in a meaningful and substantive way’ and ‘a screening and discussion of a movie, a documentary, or a play that explores the intersections and conflicts between religion and culture in different parts of the world, eg Sudan, Rwanda, Cambodia’. 207

Many universities are similar to Princeton, which ‘no longer regards itself as religious in the strict sense, but … remains profoundly religious in this more general sense’.

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205 Martin Ince, 2007, ‘Works of art in the making’, *Times Higher Education*  
http://www.timeshighereducation.co.uk/story.asp?storycode=400067

http://www.princeton.edu/president/pages/20051214/index.xml

Princeton’s Offices of Religious Life (ORL) is run by Thomas Breidenthal, whose ministry is described as ‘multifaceted’ and combines pastoral and theological duties. The Princeton University community makes space for students of many religions to attend services. Breidenthal writes:

although faith and worship inform much of what we do, the scope of the religious expression directly or indirectly sponsored by ORL is very wide. Ecumenical Christian worship happens every Sunday morning in the Chapel, followed by Hallelujah!, a weekly service of worship in the African-American tradition. But we also provide space in Murray-Dodge Hall for Muslim, Hindu, and Buddhist prayer and meditation, and Orthodox, Conservative, and Reform minyanim meet regularly for worship in the Center for Jewish Life. ORL also recognizes and works closely with 16 denominational and non-denominational chaplaincies.208

7.3 Extra-curricular activities

Table 10: Student organisations at leading universities209

<table>
<thead>
<tr>
<th>University</th>
<th>Number of student organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>369</td>
</tr>
<tr>
<td>Cambridge</td>
<td>400+</td>
</tr>
<tr>
<td>Yale</td>
<td>500</td>
</tr>
<tr>
<td>Caltech</td>
<td>80</td>
</tr>
<tr>
<td>Oxford</td>
<td>N/A</td>
</tr>
<tr>
<td>MIT</td>
<td>404</td>
</tr>
<tr>
<td>Stanford</td>
<td>590</td>
</tr>
<tr>
<td>Columbia</td>
<td>350</td>
</tr>
<tr>
<td>Princeton</td>
<td>227</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>N/A</td>
</tr>
<tr>
<td>Chicago</td>
<td>400</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>371</td>
</tr>
<tr>
<td>Imperial College</td>
<td>300+</td>
</tr>
<tr>
<td>Cornell</td>
<td>864</td>
</tr>
</tbody>
</table>

Highlights:

- Many universities encourage students to take part in as wide a range of extracurricular activities as possible
- They organise, and enable students to organise, a wide range of cultural, intellectual and artistic events
- One of the advantages of extracurricular activities is that they can promote interaction between diverse groups of students
- Students are able to gain experience developing, promoting, governing and administering clubs and societies

208 Breidenthal, ibid.
As has already been discussed in this report, there is widespread agreement that activities associated with the student experience that take place outside the classroom are of significant value.

Leading universities provide (or encourage and enable students to organise) a wide range of extra-curricular activities including sports, and creative and performing arts. Many examples could be given. At Harvard,

Extracurricular opportunities … are virtually limitless with nearly 300 official student organizations including performing and visual arts groups, 41 varsity athletic teams, student government, public service organizations, more than 50 ethnic and cultural groups, publications, and media projects. … Harvard undergraduates benefit directly from the University’s eminence as a national and international crossroads for intellectual, political, cultural, and artistic exchange. Throughout the academic year, guests and visiting faculty include prominent political figures, authors, scientists, artists, and others whose expertise, experience, or perspective is of current interest to the entire University community. Special lectures, seminars, and performances are open to all, and these opportunities are among the most valued and appreciated aspects of the Harvard experience … There are more than 50 cultural, ethnic, and international student organizations at Harvard, as well as communities representing nearly every major religion. Harvard students express their political opinions and convictions through a full spectrum of political groups and special activities.210

At Cambridge University’s Christ’s College, for example, many student clubs and societies have their own websites linked to the college homepage.211 At Edinburgh University the Student Association website lists 208 societies (including the ‘Formal Attire Running Club of Edinburgh’), not including more conventional sporting clubs which are overseen by the Sports Union.

At the University of Michigan the Club Sports Program is administered by the Department of Recreational Sports and is comprised of 42 club sports.

Each club sport is a student-led organization composed primarily of students, faculty, and staff. Each club is formed, developed, governed, and administered by the student membership of that particular club, working with the Club Sports Program staff. The key to the success of this program and each club is student leadership, interest, involvement and participation.212

Many universities are employing their websites to encourage students to take part in extra-curricular activities. The University of Toronto’s home page has an icon and link to Ulife – ‘What are you doing after class?’ which leads to a whole range of pages relating to student clubs and activities.213 Some universities host student blogs, which may diarise students’ experiences including taking part in extra-curricular activities and some have links to MySpace which they use to promote activities and encourage participation.

210 http://www.admissions.college.harvard.edu/experience_harvard/beyond_the_classroom/index.html
211 http://www.christs.cam.ac.uk/info/latestnews.html#210
212 http://www.recsports.umich.edu/clubs/about_us.asp

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7.4 Learning communities

Highlights:

- Learning community programs address a decreasing sense of community in some university environments
- Learning communities are intended to make the university seem ‘smaller’
- Learning communities support students’ academic, personal and professional growth and success
- Students in learning communities may also live together in residential halls
- Learning communities often integrate academic components and co-curricular experiences
- Students working together in interdisciplinary learning communities are able to make connections across disciplines and to take relevant ethical issues into consideration
- Learning communities are intended to be academically and socially supportive; to help students meet new people on campus; to help students connect in- and out-of-class experiences; to help make the transition to university and later to the workplace easier; and increase students’ involvement in the university community
- Academic staff involved in learning communities may also build mentoring relationships with each other
- Learning communities may allow students to relate their university learning to larger personal and global goals
- Some institutions have learning community dedicated spaces which may be open 24 hours and available for study and/or socialising

Richard Light’s research found that ‘a particular study habit shared by almost all students who are struggling academically [is that] they always study alone. Students point out that those who always study alone are isolating themselves from a key benefit of college – the opportunity to learn from fellow students’.  

Many universities are adopting learning community strategies in order to provide students with the chance to learn more effectively from each other. At Syracuse University (SU) a learning community is defined as a partnership between either Academic Affairs and Student Affairs (for residential learning communities) or between/among faculty (for non-residential learning communities) that ‘intentionally integrates academic components and co-curricular experiences to promote, enhance and support students’ academic, personal and professional growth and success’. One of the purposes of a learning community is to try and create smaller, more intimate, academically supportive communities within the bigger more anonymous university community.

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214 Light, p. 40.
215 http://lc.syr.edu/content/mission.aspx
Residential learning communities create a more academically supportive environment for students in the residence halls. Residence halls at Syracuse University range in size from 250-600 students, with eight out of the twelve North Campus residence halls housing over 400 students each. To enhance the residential experience, Syracuse University has developed several academic and interest specific learning communities where students live together in a residence hall and take one or more courses together. This creates smaller and more unifying communities in the residence halls.

Members of non-residential learning communities take two or more courses together and do not live together. Students in these communities meet students from across campus, have the opportunity to participate in some additional programming, and learn in an environment that is both supportive and social.

Both types of learning communities strive to achieve the following goals:

- Support student academic and social success.
- Help students meet new people on campus.
- Connect in-class and out-of-class experiences.
- Provide opportunities for students to interact with a diverse group of students, faculty and staff.
- Make the transition to college easier by making SU smaller.
- Increase student involvement in the SU community.

There are a number of benefits arising from participation in a learning community, which can help promote students’ academic and social success:

As with any endeavor you undertake, what you get out of it depends on what you put into it, but the potential benefits of living in a learning community include:

- enhanced academic and social opportunities,
- improved GPA,
- improved connection to faculty,
- greater involvement in learning,
- increased satisfaction with your SU experience, and
- increased persistence to graduation.

The advantages of being in a learning community include:

- Contact with students who have similar academic goals
- Common courses
- Common place of residence
- Career exploration
- Introduction to university resources
- Peer mentoring and/or tutoring
- Faculty mentoring and involvement
- Participation in department club or other organization
- Leadership development
- Exposure to international and/or diversity issues
- Special programs to acquaint students with campus life
- More collaborative learning environment

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216 [http://lc.syr.edu/content/definitions.aspx](http://lc.syr.edu/content/definitions.aspx)
217 GPA – grade point average
218 [http://lc.syr.edu/content/whyjoin.aspx](http://lc.syr.edu/content/whyjoin.aspx)
At Syracuse there are a range of residential and non-residential learning communities including, for example, the Drama Learning Community, the International Living Learning Community, the L.C. Smith College of Engineering and Computer Science Learning Community, the Language, Cultures and Arts Learning Community, the Quiet Lifestyle Learning Community and the Wellness Learning Community. The Women in Science and Engineering (WISE) Learning Community is designed to support women science and engineering students at SU … and to celebrate the achievements of women in science and engineering. The program focuses on developing mentoring and advising relationships with faculty and creating strong connections with peers. Activities within the WISE Learning Community include academic skill-building programs, field trips, dinner at faculty homes, career building workshops, and hosting visiting faculty as part of the campus-wide WISE lecture series.

The mission of WISE is to help women students:

- Learn about careers in engineering and technology from experienced people.
- Ease the transition into college and then into the workplace.
- Advance your excitement and skills through internship and research opportunities.
- Reach your potential in school and in the world by providing supportive programs.
- Network with other people in science and engineering at Syracuse University and in the field.

The Washington Center for Improving the Quality of Undergraduate Education has found that

In a variety of institutional settings and in a number of forms, learning communities have been shown to increase student retention and academic achievement, increase student involvement and motivation, improve students’ time to degree completion, and enhance student intellectual development. Students involved in learning communities become more intellectually mature and responsible for their own learning and develop the capacity to care about the learning of their peers. Faculty members involved in learning communities that facilitate cross-faculty collaboration are expanding their repertoire of teaching approaches, continually revising their course content, and acquiring new scholarly interests. Learning community faculty members are also building mentoring relationships with each other and are more frequently engaging with beginning students and general education offerings. Institutions use learning communities as sites for testing out new curricular approaches and strategies for strengthening teaching and learning. … Learning community programs also address a variety of societal issues such as the increasing fragmentation of information and student alienation toward participation and engagement. With an emphasis on interpersonal dialogue, collaboration, and experiential learning within the context of diversity, these programs address a decreasing sense of community and connection and allow students to relate their college-level learning to larger personal and global questions.
MIT runs a number of freshman learning community programs that offer alternatives to the traditional subject-by-subject method of completing degree requirements. All the programs 'offer electives and provide opportunities for lasting contact with faculty, staff, and upperclass students'.

The Experimental Study Group (ESG), for example, allows 50 freshmen to take core subjects through small, interactive classes and independent study in a close-knit community with accessible staff and faculty, and encourages educational innovation through its hands-on seminar series and participation of undergraduates in its teaching program.

ESG is a learning community that provides you with small classes, individual instruction, and independent study opportunities. You have the flexibility to move through classes at your own rate. Students who are highly motivated or who have unique academic backgrounds find the self-paced style of learning very challenging and rewarding. You may take all of your freshman courses within the ESG learning community, such as math, physics, chemistry, and biology, as well as several humanities and social science subjects and undergraduate seminars. Students are also welcome to take one or two subjects in the mainstream offerings. In addition to 55 freshmen, the community includes 15 sophomores, 10 faculty and staff, and 20 undergraduate and graduate student tutors. Above and beyond the academic program, ESG sponsors weekly luncheons with guest speakers; trips to museums, plays and movies; hiking and skiing outings; and informal gatherings to study and socialize with others. The ESG facility is open 24 hours a day, and this community space is a great place for you to study or socialize.

The University of Washington (UW) which ‘is a huge place, with over 36,000 students, and up to 50,000 people on campus on any given weekday’, also has special first-year programs which encourage students to form learning communities. Approximately 70 per cent of all entering freshmen at UW register for a Freshmen Interest Group (FIG). These are ‘pre-packaged cluster[s] of high-demand freshman courses’. Joining a FIG means that individuals take classes with the same 20-25 students who share similar interests and can form their own community. A range of FIGs is available including academic interest groups (Individuals and Societies; Visual, Literary and Performing Arts; Engineering and Computer Science; Business World etc.) and other themes (Multicultural; Service Learning; GBLT etc.)

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224 http://web.mit.edu/facts/undergraduate.html
226 http://depts.washington.edu/fyp/programs/
227 GBLT – gay, bisexual, lesbian, transgender
228 http://depts.washington.edu/fyp/programs/figs/
8. Teaching

| Highlights: |
|------------|-----------------|
| - The world’s leading universities employ very highly-qualified academic staff |
| - Many leading and aspiring institutions have teaching and learning centres or centres of teaching excellence that provide programs and ongoing training to new and existing teaching staff |
| - In many places initiatives are being undertaken to improve the status and quality of teaching in universities |
| - Top-ranking and aspiring institutions recognise the fundamental importance of undergraduate teaching and that it is at the heart of the role of the university |
| - Some universities invite excellent visiting teachers to their institutions not only to teach undergraduates but also for their capacity to bring new ideas about undergraduate teaching into the campus |
| - Some leading universities understand that it is important for their top academics and world-class scholars to teach first-year students |
| - Derek Bok believes that leading universities should be constantly and consistently searching for ways to improve teaching and the quality of education they are providing. |

In the most highly ranked universities in the world most academics work full time and are very highly qualified (see Table 2 above). Many institutions expect the academics they employ to be effective teachers, competent researchers and active participants in academic life (attending conferences in their discipline, contributing as committee members etc.) – often expressed as ‘service’.

In the US, in particular, institutions with a high percentage of students living in residential colleges and/or accommodation on campus may well encourage faculty members to take part in the daily life of the community and to live on or near the campus (with their families) to facilitate this. To a certain extent this is also still true of Oxford and Cambridge in the UK.

In 2003 the UK Government produced a White Paper, *The Future of Higher Education*, which argues that ‘teaching has for too long been the poor relation in higher education’:

Promotion for academics is based largely on research excellence, rather than teaching ability. There is no respected and defined separate professional career track for higher education teaching in its own right. Only around 12 per cent of academic staff in higher education are members of the Institute for Learning and Teaching in Higher Education, and not all of those necessarily have any formal teaching qualification. And here again there are recruitment difficulties. HEFCE’s annual survey reveals a recruitment situation that has steadily deteriorated since the survey was inaugurated in 1998. Over 60 per cent of institutions reported difficulties in recruiting lecturers. Recruitment difficulties were particularly concentrated in certain subjects,
notably computing/IT, business-related subjects, science, engineering, medicine-related subjects and education.

Students have insufficient information on how good the teaching is when applying for courses. And here again there is a story of decline: staff-student ratios have fallen from just over 1:10 in 1983 to 1:18 in 2000 and this tends to mean that students write fewer assignments and have less face-to-face contact with staff. There is too little collaboration between higher education institutions (HEIs), which can raise standards; support the development of modules and courses particularly at the introductory level; and promote the innovative use of ICT [Information and Communications Technology] and credit accumulation and transfer.229

The White Paper includes the following key points and proposals, which are intended to address these issues and to promote teaching excellence in higher education:

- We are rebalancing funding so that new resources come into the sector not only through research and student numbers, but through strength in teaching.
- Student choice will increasingly work to drive up quality, supported by much better information. A comprehensive survey of student views, as well as published external examiners’ reports and other information about teaching standards, will be pulled together in an easy-to-use Guide to Universities, overseen by the National Union of Students.
- To underpin reform, we will support improvements in teaching quality in all institutions.
- Additional money for pay will be conditional on higher education institutions having human resource strategies that explicitly value teaching and reward and promote good teachers.
- New national professional standards for teaching in higher education will be established as the basis of accredited training for all staff, and all new teaching staff will receive accredited training by 2006.
- The external examining system will be strengthened by improved training and induction, including a national programme for external examiners by 2004–05.
- We will also celebrate and reward teaching excellence. We are consulting on the establishment of a single national body – a teaching quality academy – which could be established by 2004 to develop and promote best practice in teaching. Centres of Excellence in teaching will be established to reward good teaching at departmental level and to promote best practice, with each Centre getting £500,000 a year for five years, and the chance to bid for capital funding.
- The National Teaching Fellowships Scheme will be increased in size to offer substantial rewards to twice as many outstanding teachers as at present.
- To recognise excellent teaching as a university mission in its own right, University title will be made dependent on teaching degree awarding powers – from 2004–05 it will no longer be necessary to have research degree awarding powers to become a university.230

Many universities, at all levels of achievement and aspiration, have or have recently created centres for teaching excellence.

In early 2007 following a report by a task force commissioned by Derek Bok, Harvard produced its ‘Compact to Enhance Teaching and Learning at Harvard’, which contains an ambitious set of reforms to raise the status and quality of teaching, including better preparation in classroom skills for graduate students and new junior faculty; improved student evaluations of courses; closer attention to teaching in making faculty appointments and setting salaries; added support for experimentation in methods of instruction; and greater publicity and recognition for exceptional teaching and for innovations in pedagogy.\(^{231}\)

Many of these strategies were already in place at numerous other universities. At New York University, for example, the Center for Teaching Excellence has five major goals within the broad ambition of promoting excellence in teaching:

- To promote a view of teaching that links it to student learning and that defines excellence in teaching in terms of encouraging and facilitating the most ambitious learning;
- To encourage and facilitate a research-base for teaching and learning decisions, while contributing to the ongoing research on teaching and learning;
- To increase good teaching, making it not only a strong tradition but a universal reality at New York University;
- To make excellent teaching easier, more systematic and less idiosyncratic – recognizing, nevertheless, that the best teaching will always be hard work; and
- To encourage a view of teaching as a serious form of scholarship, an important intellectual endeavor, and to win for teaching the respect and rewards such endeavors deserve.\(^{232}\)

Teaching and learning departments or centres for teaching excellence at many universities around the world have similar goals. Many institutions recognise the fundamental importance of undergraduate teaching in particular. For example:

> Yale is distinctive in its insistence that members of the Faculty of Arts and Sciences teach undergraduates regularly. We expect undergraduate teaching to be taken seriously, and the example set by respected scholars who excel at teaching creates an environment in which good teaching is valued.\(^{233}\)

Similarly, at the University of Toronto, it is considered important that the top academics teach first-year students:

> At the undergraduate level, a distinctive feature of our institution has been the opportunity for students to be exposed, early in their programs, to world-class scholars. This in turn underpins the principle that all full-time faculty members should be engaged in undergraduate teaching.\(^{234}\)

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\(^{231}\) [http://www.president.harvard.edu/speeches/bok/070607_annualreport.html](http://www.president.harvard.edu/speeches/bok/070607_annualreport.html)

\(^{232}\) [http://www.nyu.edu/cte/centerhistory.html](http://www.nyu.edu/cte/centerhistory.html)

\(^{233}\) Levin, ‘Yale’s Fourth Century’, ibid.

\(^{234}\) ‘The University’s Future Role’, Toward 2030, University of Toronto [http://www.towards2030.utoronto.ca/full.html#1](http://www.towards2030.utoronto.ca/full.html#1)
Lee Bollinger, President of Columbia, believes that,

the general health of a university — and I mean by that the character of the scholarship that is being done, the nature of the interactions among faculty, staff and students, the very heart of the place — is dependent on whether there is a strong, vibrant desire, natural and instinctive, to educate and help the youngest members of the community. We know this as parents: You cannot live a healthy life, in all respects, if you ignore your children. The same is true with respect to a university and undergraduates.235

At Princeton recently much was made of the imminent visit of five ‘distinguished teachers’ from around the US who were invited specifically because of their ‘demonstrated excellence in teaching and their capacity to bring new ideas in undergraduate teaching to the campus:

Each will teach an undergraduate course and engage in other activities aimed at improving teaching at Princeton, such as workshops for faculty and graduate students, demonstration lectures and classroom visits.236

But, even the most prestigious higher education institutions may not be fully committed to teaching excellence and innovation. Derek Bok believes that,

academic leaders need to strengthen their capacity to inform the discussion [about improving teaching and learning.] At present [2007], there is no office at Harvard that is specifically charged with searching for interesting possibilities to improve the quality of education – no individual who goes to conferences and scans the literature for evidence of intriguing new research on student learning, innovative methods of teaching, or new ways of assessing educational programs. While the [Derek Bok] Center [for Teaching and Learning at Harvard] has plenty of expertise in critiquing budgets, reviewing building plans, and evaluating other initiatives proposed throughout the University, it contains no reliable source of creative ideas and interesting educational opportunities that deserve consideration. As a result, it is far better at stopping questionable initiatives than it is at stimulating the growth of creative educational reforms. Any effort to strengthen the Central Administration might well begin by remedying this deficiency.235

8.1. Teaching-only academics

Given the importance accorded to teaching, it is interesting to consider how many of the most-highly ranked universities in the world employ teaching-only academics.

A recent (2007) research paper claims that in the UK there has been

rapid growth in the number of teaching-only posts, up from 12,000 to 40,000 in a decade. They now account for a quarter of all academic staff positions. The biggest teaching-only employers are found across the sector, including the research-intensive

237 http://www.president.harvard.edu/speeches/bok/070607_annualreport.html
University College London, the University of East Anglia and post-92 institutions with less research activity. … The paper says the proportion of academics classified as doing teaching and research that were counted as research-active for the purposes of the RAE [Research Assessment Exercise] fell from about 66 per cent in 1995-96 to 58 per cent in 2001-02, and appears to be in further decline as 2008 RAE entries were finalised last month.\footnote{http://www.theaustralian.news.com.au/story/0,25197,22940721-12332,00.html}

There is considerable debate about the issue of teaching-only academics which seems to centre around (a) the lesser status and value accorded to teaching-only academics as opposed to academics who are research-active or in research-only positions; (b) the research-teaching nexus (discussed below).

One in four UK academics is now classed as ‘teaching-only’ and the numbers of teaching-only academics is rising faster than increases in research-active or research-only academics. Newcastle, Birmingham, City, Southampton and Glasgow universities have all recorded a rise in teaching-only contracts. In some cases it appears that those in teaching-only positions are considered to be academics whose ‘research career is not blossoming’. In others, such as at Glasgow, ‘investment in staff whose role is to focus on driving forward innovation in teaching to enhance student learning has been a deliberate strategy’. While at Birmingham, although they ‘expect that our learning and teaching provision will continue to be met principally by staff who engage in both teaching and research’, they also accept that, ‘there is a place within a research-led institution for a limited cadre of staff who specialise in teaching, learner support, innovation in teaching methodologies and in emerging educational technologies’.

The strategies being adopted at both Glasgow and Birmingham may well be driven by the White Paper issued by the Government in 2003 (mentioned above), the need to increase student satisfaction and learning outcomes, and by recent criticism of some universities’ over-use of sessional tutors and a shortage of lecturers.\footnote{http://www.timeshighereducation.co.uk/story.asp?storyCode=400361&sectioncode=26}

8.2 The research-teaching nexus

The connection or nexus between research and teaching has been a matter of considerable debate for a long time. As Prince, Felder and Brent (2007) argue, justification for the rising importance of research (in funding, rankings, faculty appointments and promotions etc.) includes the idea that research supports teaching, keeping course content up-to-date and ‘modeling for students the intellectual curiosity and critical thinking that characterize good research’.\footnote{Michael J. Prince, Richard M. Felder, and Rebecca Brent, ‘Does Faculty Research Improve Undergraduate Teaching? An Analysis of Existing and Potential Synergies’, \textit{Journal of Engineering Education}, October 2007. http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Papers/Teaching-Research(JEE).pdf} Opponents of the idea, on the other hand, while conceding that teaching and research could be complementary, cite ‘numerous studies that have consistently shown negligible correlations between research productivity and teaching performance’.

As Rugarcia … and Felder … point out, research and teaching have different goals and require different skills and personal attributes. The primary goal of research is to
advance knowledge, while that of teaching is to develop and enhance abilities. Researchers are valued mainly for what they discover and for the problems they solve, and teachers for what they enable their students to discover and solve. Excellent researchers must be observant, objective, skilled at drawing inferences, and tolerant of ambiguity, and excellent teachers must be skilled communicators, familiar with the conditions that promote learning and expert at establishing them, and approachable and empathetic. Having both sets of traits is clearly possible and desirable but not necessary to be successful in one domain or the other. Moreover, first-class teaching and first-class research are each effectively full-time jobs, so that time spent on one activity is generally time taken away from the other. There should consequently be no surprise if studies reveal no significant correlation between faculty research and effective teaching.

Prince, Felder and Brent argue that ‘the “Myth of the Superhuman Professor” that underlies the current incentive and reward system is that there are enough people [who are] … world-class at both teaching and research … to populate all university faculties, while the reality is quite different’. They go on to say:

Given that expectations for faculty research have risen at the same time that higher education is facing demands for increased public accountability, the advantages of strengthening the … research-teaching nexus seem clear, and several studies encourage a stronger connection …. Students obviously can benefit from effective linkages between faculty research and undergraduate education; faculty can benefit from the efficiency and satisfaction of integrating their primary professional responsibilities; universities may benefit when their stakeholders perceive that they are not neglecting their educational missions, since a more positive public image may translate into greater financial support from legislative, industrial and philanthropic groups and more student applicants, resulting in a stronger and more selective student body. In short, there are numerous reasons to strengthen the research teaching nexus.

There are three strategies commonly proposed for strengthening the research-teaching nexus:

(a) integrating research into the classroom through discussion—Prince, Felder and Brent argue that:

integrating research into the classroom in the way integration is normally conceived—i.e., instructors discussing the content of their research—has not been shown to occur frequently or to improve learning. An alternative way to integrate research into the classroom, and one with much more empirical support in terms of improving students’ learning, is to teach in a manner that replicates the research process, e.g., by using an inductive teaching approach such as inquiry-based or problem-based learning.

(b) students can be provided with genuine research experience—many universities are providing students with the chance to gain authentic research experience. Stanford, MIT and the University of Toronto are doing so, as discussed in Section 7.1.1, Student learning – Participation in research.

(c) broadening the model for academic scholarship so that teachers research aspects of their own teaching—this is in part what the UK Government’s White Paper, Derek Bok’s ‘Compact to Enhance Teaching and Learning at Harvard’ and the goals set by New York University’s Center for Teaching Excellence are talking about in their
quest to raise the profile of teaching in higher education and to promote teaching itself as a form of scholarship.

8.3 Teacher development

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<td>• Universities committed to teaching excellence increasingly provide training for graduate students and teaching assistants, and progressively update the skills of existing teaching staff through ongoing support programs</td>
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Many universities run programs and provide mentors for graduate students working as tutors or teaching assistants. In addition they emphasise the importance of lifelong learning in teachers’ careers and provide ongoing support programs.

At Cornell, for example, graduate teaching assistants and experienced teachers attend a range of instructional support programs:

The Center for Learning and Teaching emphasizes the importance of life-long learning in the development of outstanding teachers. … [A range of] programs support graduate T[eaching] A[ssistant]s as they begin their careers as well as faculty members as they continually strive to achieve excellence in teaching. … Graduate Student Development Workshops … are designed to assist graduate students and teaching assistants in developing their teaching skills and to prepare them for professional academic positions. All workshops are free and open to all graduate students, postdoctoral associates and fellows throughout the university. The workshops are co-facilitated by staff from the Center for Learning and Teaching and experienced graduate students’.241

One of the initiatives implemented (belatedly, some would say) at Harvard, as part of Derek Bok’s ‘Compact on Teaching and Learning’, gives teaching assistants the chance to practice teaching each other before they begin teaching students:

Before they teach their first class, future teaching fellows practice by teaching one another in ‘microteaching sessions’. … Participants alternate between the role of teacher and student. Each ‘teacher’ gives a brief, prepared lesson and then hears comments from the group, mostly about the strengths of their teaching. Often this opens a general discussion of different approaches to effective teaching. Each example of teaching is also videotaped. The prospective teaching fellows subsequently view and discuss their section of the tape in a confidential, one-on-one session with a Bok Center staff member.242

241 http://www.clt.cornell.edu/campus/teach/grad/grad.html
242 http://isites.harvard.edu/icb/icb.do?keyword=k1985&pageid=icb.page29686
8.4 Women academics

As already mentioned, many leading universities correlate diversity in the university community directly with excellence. The statistics above show, however, that women are still underrepresented (see Table 2).

Reports from a number of Schools at MIT on the status of women faculty found that:

Generic issues that differentially impact the professional lives of female versus male faculty are: marginalization; isolation resulting from small numbers of women faculty; residual effects of past inequities, particularly around salary and access to resources; and greater family responsibilities. Marginalization accumulates from a series of repeated instances of disadvantage which compound over an academic career.  

MIT has put in place a number of initiatives to try and increase the number of women faculty and to improve their experiences.

Nan Keohane, then President of Duke University, commissioned a team of task forces to report on the status of women. When it was published in 2003 the report received a significant amount of attention in the US:

Rather than studying a single segment of the university community, a team of task forces considered the full set of women’s experiences within the university: the lives of women faculty, staff, graduate students, undergraduates, and alumnae as well. Through this breadth of focus, the report was able to highlight issues that link the experience of women across categories, such as the critical role of mentorship. At the same time, the study noted that the most salient issues for women in the university are often specific to their position, so that a women’s agenda needs to have many different parts. The relation of the tenure clock to family responsibilities is an issue for untenured women faculty members, but not for the tenured. Childcare is an issue for younger faculty, staff and some graduate students but not, with rare exceptions,

243 http://web.mit.edu/faculty/reports/overview.html
for undergraduates. And the pressures on undergraduate women have their own character, which the report is careful to detail.244

Following the report a ‘President’s Commission on the Status of Women’ was set up at Duke which oversees the progress the University is making on a detailed checklist of issues that need to be dealt with.

At Harvard the under-representation of women in faculty positions, particularly in the sciences, was recognised and strategies have since been developed in an attempt to recruit more women into the sciences. In 2005, Harvard established two University-wide task forces to address different dimensions of the problem:

the Task Force on Women Faculty will be charged with making recommendations for a series of specific institutional measures – including the creation of a new, senior position at the center of the University – to strengthen the recruitment, support, and advancement of outstanding women faculty in the University; the Task Force on Women in Science and Engineering will analyze and make recommendations concerning effective ways to build and sustain the ‘pipeline’ of women pursuing academic careers in science, from undergraduate studies to graduate and postdoctoral work to advancement through faculty ranks.245

In 2007 Harvard appointed Drew Faust its first woman president.246 They followed Princeton who appointed Shirley Tilghman, and Brown University who appointed Ruth J. Simmon, in 2001; Cambridge, whose Vice-Chancellor, Alison Richard, was appointed in 2003; and MIT who made Susan Hockfield their first woman president in 2004.

8.5 Teaching methods

Universities around the world do not all use the same methods to educate students.

8.5.1 Tutorials, precepts and seminars

The world’s leading universities place an emphasis on small class sizes, interactive group learning and ‘lively’ discussion, with students being encouraged to voice their opinions and challenge those of their peers and teachers.

The world’s leading universities place a strong emphasis on small group, interactive teaching. The tutorial system is the foundation of undergraduate teaching at both Oxford and Cambridge. At Cambridge the tutorial is referred to as a ‘supervision’ and, as at Oxford, it is usually organised by the College:

Whilst the University organises lectures and exams, the College has responsibility for the individual teaching of its undergraduates. Lectures, practicals and classes are held

244 http://www.duke.edu/womens_initiative/
245 http://www.hno.harvard.edu/gazette/daily/2005/02/03-women.html
in University lecture theatres and within Departments (or Faculties) and these are
attended by students from all Colleges studying that subject. The College arranges
individual tuition for its own undergraduate students. This usually takes the form of a
Supervision, a small group, typically two or three students, and their Supervisor.
Supervisors can be Fellows or Research Students of Queens’ or from other Colleges
depending on the subject and the expertise required.247

Leading American universities adhere to a preceptorial system, which is similar in
concept to the old-style Australian ‘tutorial’.

The precept is a defining component of a Princeton education. … [Precepts] are small
discussion groups that meet weekly to further explore the readings and topics of a
particular course. The precept provides an open forum in which students are
encouraged to voice their opinions and challenge those of their peers. … Precepts
may be led by the professor who teaches the course, by other faculty members or by
advanced graduate students. Students have the opportunity to meet with a professor
during regular office hours to bring up questions and ideas one-on-one.248

At Brown University precepts are referred to as ‘seminars’:

Seminars … ensure close interaction between … students and faculty members while
simultaneously offering a rigorous introduction to the approaches and analytical
methods for a particular subject area or department. … First-year seminars are limited
to 20 students and often enroll even fewer students. Such seminars are an ideal way
for students to get to know one of their professors well. The seminars’ small size and
therefore congenial setting encourage participation in lively discussion and provide
students with regular feedback from their instructor on the work they produce for the
class.249

8.5.2 Lecturing methods

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<td>• Both the Socratic and the Case Study methods of lecturing promote interaction between lecturer and students and among students</td>
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<tr>
<td>• Many universities recognise the necessity of making larger classes more interactive</td>
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<tr>
<td>• The use of clickers and active learning strategies can: lead to increased interaction between students and lecturers; provide lecturers with feedback; and encourage interaction between students</td>
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<tr>
<td>• Interaction between students and ‘peer instruction’ strategies can have significant results</td>
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There are also different kinds of lecturing methods employed around the world. One
of these, the ‘Socratic’ method, is used in many US law schools including, for
example, the University of Chicago’s Law School. The Socratic method involves

247 http://www.queens.cam.ac.uk/default.asp?MIS=9
248 http://www.princeton.edu/admission/whatsdistinctive/experience/the_preceptorial_system/
249 http://www.brown.edu/Administration/Dean_of_the_College/courses/lvs.php
participatory learning and discussions with a few students on whom [professors] call (in some classrooms, randomly) to explore very difficult legal concepts and principles. The effort is a cooperative one in which the teacher and students work to understand an issue more completely. The goal is to learn how to analyze legal problems, to reason by analogy, to think critically about one’s own arguments and those put forth by others, and to understand the effect of the law on those subject to it. Socratic discourse requires participants to articulate, develop and defend positions that may at first be imperfectly defined intuitions.250

Many Business Schools use the ‘Case Study’ approach, which was pioneered by the Harvard Business School (HBS) in the 1920s as a way of bringing management lessons to life in the classroom. More than 80 percent of HBS classes are built on the case method.251

To get the most out of cases, students read and reflect on the case and then often meet in small study groups before class to ‘warm up’ and discuss their findings with other classmates. In class—under the questioning and guidance of the professor—students probe underlying issues, compare different alternatives, and finally, suggest courses of action in light of the company's objectives. As a case study unfolds in class, students do 85% of the talking, as the professor steers the conversation by making occasional observations and asking questions. This classroom interaction is enriched by the 80-90 individuals from diverse industries, functions, countries, and experiences. During their time at Harvard Business School, students study and prepare over 500 cases—a transforming experience that helps them to recognize the unique aspects of different situations, define problems, suggest further avenues of analysis, and devise and implement action plans.252

Over the last decade or so, a number of studies have suggested that the lecture format in its traditional form may not be very effective in getting conceptual material across to students especially in the sciences.253

Various methods are increasingly being used to make lectures more interactive. The ‘one-minute paper’ is one method being used by teachers to get feedback from students. At the University of Maryland students may be asked to:

write responses to the questions, ‘What point(s) are most clear to you?’ and ‘What point(s) are still unclear to you?’ In a daily report, students are ask to complete the following sentences: ‘The point of today’s lecture is . . . ’ and ‘A question I have is . . . ’ These reports can be graded or ungraded and can provide a clear sense of which areas are presenting students with the greatest difficulties.254

According to Richard Light,

[an] important side benefit of the one-minute paper is that knowing they will be asked to fill out the paper at the end of class focuses students’ thinking. Students are constantly asking themselves, ‘What is the big idea here?’ and also, ‘What is unclear to me, and how can I write a few coherent sentences that convey what I don’t

250 http://www.law.uchicago.edu/socrates/soc_article.html
251 http://www.library.hbs.edu/hbs_cases.html
252 http://www.hbs.edu/research/case_method.htm
254 http://www.cte.umd.edu/library/teachingLargeClass/guide/ch8.html
At Harvard, Eric Mazur developed a teaching approach referred to as ‘Peer Instruction’, which attempts to make large classes interactive:

the lectures are broken in 12-minute long sections. Each section starts with about 7 minutes of lecturing on one of the fundamental concepts to be covered. This mini-lecture is then followed by a short multiple-choice question that tests the students’ understanding. After one minute the students record an answer and are then asked to turn to their neighbors to try and convince them of their answers. After another minute or so, the students are asked to reconsider their answer and record it again. A poll is taken so the instructor can decide whether to move on to the next concept, or to continue on the same. This process repeats until the end of the class. The polls are taken electronically, with the results instantaneously posted in histogram form visible to the entire class. Assessment data show a dramatic gain in student performance compared to that in the same course taught in the traditional lecture format.256

Many universities are now making use of keypad clickers with Mazur’s Peer Instruction technique.

At the University of Michigan clickers are not only understood to make it easier for the lecturer to find out what the students already know, or understand from the lecture content, but they also make it easier for students to see how well they’re doing in comparison to their peers:

Clicker technology makes it easy for faculty to check students’ mastery of lecture content. The immediate display of student responses enables faculty and students to see how well students understand the lecture. As a result, faculty can decide whether there is a need for further instruction or supplementary materials. By seeing peers’ responses, students can gauge how well they are doing in relation to others in the class and determine which topics they need to review or bring to office hours.

The University of Michigan also uses a range of other active learning strategies in conjunction with clickers to engage students. Research has shown that students’ understanding and performance can improve significantly using these techniques.

Peer Instruction (Mazur, 1997) [referred to above] and Think-Pair-Share (Lyman, 1981) are cooperative learning strategies that faculty often use to probe students’ understanding of lecture content and encourage them to discuss, debate, and defend their answers during lectures. The strategy entails posing a question to students, giving them time to think and discuss their responses with a partner, and then describing the results to the whole class.

Clicker technology makes the use of these strategies feasible and manageable, even for large classes. For example, the instructor will plan for each lecture several concept questions that focus more on the analysis and evaluation of information than simple recall, rote memorization, or calculation. Students are asked to share and discuss their responses with partners. Some faculty ask students to respond twice to difficult

255 Light, ibid, p. 67.
questions, once right after they read the question and then again after they talk to their partners. The faculty member then reviews and explains students’ different responses, helping them clear up their misconceptions.

Research in physics (Crouch & Mazur, 2001) shows that students’ cognitive gains from peer instruction are significant: students’ scores on tests measuring conceptual understanding improved dramatically; their performance on traditional quantitative problems improved as well.257

In his recent ‘think piece’ on the ‘optimized university’ Carl Wieman claims that classes of 200 or more can achieve ‘very good learning gains’ by:

utilizing technology and research based practices such as: clickers and peer instruction, good computer graded homework systems, encouragement of pedagogically effective student-student collaboration, extensive course webpages, and email and online communications and survey systems.

Learning gains in such classes, he argues, ‘can be as good as the best achieved in smaller classes’.258

8.6 Use of technology in teaching259

<table>
<thead>
<tr>
<th>Highlights:</th>
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<tbody>
<tr>
<td>• Some universities are experimenting with a range of new technologies and some are collaborating with staff, students and leading corporations in the field and also across disciplines to develop innovative technologies</td>
</tr>
<tr>
<td>• There is enormous potential for the use of games technologies in education</td>
</tr>
</tbody>
</table>

Universities around the world continue to grapple with the best ways in which rapidly evolving technologies can be used to enhance, even transform, student learning.

MIT, to take just one example, has collaborated with Microsoft Research aiming ‘to revolutionize the practice of higher education with the tools of information technology’. Big claims are being made about the success of the project:

At MIT, iCampus has already transformed the way teachers teach and students learn, reshaping 96 courses across the curriculum—and dramatically improving the learning experience of more than 5,000 students. Each new initiative also includes a rigorous assessment of its educational results. Ultimately these innovations can be used to improve education worldwide.260

257 http://www.crlt.umich.edu/inst/clickeractivities.html
259 See also Section 9, which covers a range of IT issues such as the quality of university websites, IT infrastructure, the wireless network etc.
One of the initiatives is the ‘Classroom Communicator’, which appears to be a rather more sophisticated version of the clicker keypad. The device uses computer technology (a cell phone equipped with a web browser) to increase the level of interaction between students and professors. … While the lecturer is presenting, students can enter their questions into the system (possibly anonymously). When the lecturer reaches a reasonable break in material, he or she may retrieve a frequently asked questions report generated by the Classroom Communicator software.

The software also gives lecturers a real-time quantitative measure of how well students understand the material presented. For example, a lecturer can incorporate ‘mini-quizzes’ into his/her lecture. The quizzes could be a series of multiple-choice questions loaded in the system before class … At the press of a button, [the lecturer can] display a question on the students’ units. … If most students answer incorrectly, the lecturer may want to spend more time on the current topic. In effect, the lecturer will be able to manage class time and address the needs of the students in real-time.261

Another iCampus initiative is the ‘Games To Teach’ project, an interdisciplinary collaboration of faculty, staff and students across the humanities, sciences and engineering disciplines. It ‘has developed a series of conceptual prototypes for “games-to-teach” science and engineering subjects at the advanced high school and introductory college level’. The project investigators’ report concludes:

> games … offer teachers enormous resources they can use to make their subject matter come alive for their students, motivating learning, offering rich and compelling problems, modeling the scientific process and the engineering context, and enabling more sophisticated assessment mechanisms.262

### 8.7 Monitoring new ideas about teaching, learning, and curriculum content and design

**Highlights:**

- Universities are setting up ‘Guidance Committees’ to overview and assist with the take-up of teaching and learning technologies
- According to Derek Bok universities should keep an eye on what’s going on in the world to improve the quality of higher education and should engage ‘an individual’ who is a ‘reliable source of creative ideas and interesting educational opportunities that deserve consideration’.

Given the speed with which technologies are evolving, many highly-ranked universities are beginning to set up ‘guidance’ committees to overview and assist the take-up of resources for teaching and learning.

At the Teaching and Learning Technology Center at the University of California, a Systemwide IT Guidance Committee (ITGC) has been set up:

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262 [http://icampus.mit.edu/projects/GamesToTeach.shtml](http://icampus.mit.edu/projects/GamesToTeach.shtml)
The ITGC will focus on several strategic areas, including teaching and learning, student use of technology, stewardship of digital assets, high performance research computing, and scholarly collaboration. The Committee is being assisted by campus experts in these areas and by OP [Office of the President] staff who will form work groups to explore these issues and draft recommendations for systemwide or cross-campus investment or action.

The TLTC is a virtual center to support the use of technology for teaching and learning throughout the University of California system. It provides examples of effective practices; appropriate uses of technology in instruction including information about how to evaluate the use of technology; information about online distance education and hybrid courses; hands-on information and links to resources including journal articles and papers; and information about campus resources and projects including resources and foundation grants.

There are many further examples of inventive teaching methods, the use of technology in teaching, and curriculum innovation that could have been cited in this paper. The problem of keeping track of and assessing new innovations and developing strategies for their adoption is presumably widespread among teaching and learning departments worldwide.

As Derek Bok has pointed out, at Harvard, where the Derek Bok Center for Teaching and Learning employs many experts in ‘critiquing budgets, reviewing building plans’ etc., there is ‘no office specifically charged with searching for interesting possibilities to improve the quality of education’ and they do not have ‘an individual’ who keeps abreast of ‘intriguing new research’ on student learning, innovative teaching methods or new ways of assessing educational programs. Bok obviously thinks that Harvard should have such an office and someone who becomes what he refers to as ‘a reliable source of creative ideas and interesting educational opportunities that deserve consideration’.

9. Technology

*PCMag* and *The Princeton Review* have jointly produced a ranking of US universities and colleges which relates to their use of technology.

**Table 11: The top 20 ‘wired’ US colleges and universities**

1. Villanova University
2. MIT
3. Indiana University, Bloomington
4. Swarthmore College
5. Creighton University
6. University of Illinois
7. Michigan Technical University
8. University of Southern California

264 [http://www.ucop.edu/tltc/toolbox/started/index.html](http://www.ucop.edu/tltc/toolbox/started/index.html)
265 See also Section 8.7, Use of technology in teaching
The methodology for the ranking included a number of questions in three categories: academics; student resources; and infrastructure.

The Academics section included questions about the percentage of professors who post course materials and lectures online, whether the school offers faculty computer training, and the method(s) of delivering those online offerings. This section also included questions about whether students can take tests online, whether the school offers 'distance learning,' and what other kinds of high-tech courses are offered. Questions in the Student Resource section [related to] what kinds of hardware, software, and technology services are included with tuition, whether the school allows peer-to-peer connections over the campus network, and whether students have free online storage. The section also asked whether students can download applications and music, and whether the school loans equipment such as digital cameras and LCD projectors free of charge. Questions on whether the school has its own online social network and whether the school streams media from the college radio or television station were also included.

For the Infrastructure section, we asked about the percentage of dorms that have computer labs or public-use computers, the average age of the majority of the public-use computers, the percentage of computer labs that are open 24/7, and the methods of 24/7 tech support that are available to students.266

Table 12: Computer facilities and wireless networks at leading universities267

<table>
<thead>
<tr>
<th>University</th>
<th>No. of computers available to all students</th>
<th>No. of users wireless network accommodates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>242</td>
<td>N/A</td>
</tr>
<tr>
<td>Cambridge</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Yale</td>
<td>450</td>
<td>10,000</td>
</tr>
<tr>
<td>Caltech</td>
<td>56</td>
<td>10,000</td>
</tr>
<tr>
<td>Oxford</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>MIT</td>
<td>1,100</td>
<td>20,000</td>
</tr>
<tr>
<td>Stanford</td>
<td>1,500</td>
<td>5,000</td>
</tr>
<tr>
<td>Columbia</td>
<td>N/A</td>
<td>20,000</td>
</tr>
<tr>
<td>Princeton</td>
<td>550</td>
<td>7,200</td>
</tr>
</tbody>
</table>

266 http://www.pcmag.com/article2/0,2817,2073625,00.asp
New technologies are transforming teaching and students’ experience of higher education around the world. As Harvard’s President Drew Faust told alumni:

The Internet has changed the logistics of learning, and enhanced classroom teaching in unexpected and marvelous ways — not replacing the essential exchange between teacher and student, but giving it new forms and rich variety. Just how different is the College classroom from the place you knew 25 or even five years ago? Different beyond imagining. Consider Shakespeare scholar Stephen Greenblatt’s course ‘Travel and Transformation on the High Seas: An Imaginary Journey in the Early 17th Century.’ The syllabus is organized around the fictional narrative of three ships that set sail from London and try to reach Africa and the New World. Students log on to Google Earth, zoom in to trace each journey across the globe, click onto the maps and visual arts of 17th-century cities, click again onto primary texts that might be two different translations of the Magna Carta, and watch an online performance of
‘Othello’ by a South African theater company. The course is not only multimedia, it is multi-disciplinary. Professor Greenblatt employs in-class guest lecturers and experts from many disciplines, including a meteorologist, an anthropologist, and a professor of Turkish studies, giving students a heretofore inconceivably vivid and thorough picture of the Atlantic world and beyond in 1636 — ending, no less, on virtual location at the founding of Harvard College. 268

According to Faust, ‘Ninety percent of Harvard courses, 5,000 a year, have web sites’. Rather than replace face-to-face communication between students and academics the technology can provide a forum for virtual interaction and discussion in cyberspace. Faust continues:

Discussion boards and blogs extend in-class discussion. Recorded online lectures free up class periods for greater learning time with professors. And in a stroke of genius, a Technology Fellows Program employs students, who grew up online, to help professors realize their web-related ideas. We are all teachers and we are all learners, indeed! Alumni can now participate, as well. Some of you have probably enrolled in the new pilot program that takes you inside a packed Sanders Theatre, where undergraduates wrestle with civic and ethical quandaries in Michael Sandel’s course on ‘Justice,’ discussions you can continue through blogs and monthly discussion groups in Harvard Clubs from Santa Barbara to Shanghai, or perhaps this afternoon.269

John Niland concedes that technologies present ‘endless’ valuable possibilities. The benefits can be institutional as well as educational. According to Niland, strategic partnerships between institutions nationally and internationally will become increasingly important, advantageous and mutually sustaining:

virtual attributes, managed carefully, can breathe life into strategic alliances, can help bring institutions otherwise isolated beyond the critical mass to compete in the larger league. Comparative classes in politics and law can be taught jointly by universities in different countries. Students can even be linked to scientific expeditions occurring far from the university campus and be involved in the collection and analysis of data as it happens. The possibilities are endless.270

Referring to the position at Manchester, Alan Gilbert writes that ‘for a large university unable to avoid increasingly depersonalised face-to-face interactions between teachers and taught, developing effective on-line solutions to the challenge of enriching student learning is ... a vital imperative’ (original emphasis).271 And, Gilbert speculates:

Whether, and, if so, how quickly and fully, virtual learning communities begin to rival the richly interactive learning opportunities found in face-to-face, and especially residential communities, is an important and intriguing question that will need to be asked and re-asked in the years ahead. What is already obvious, however, is the need for the best undergraduate teaching to recognise and accommodate the rise and rise of on-line and other highly interactive technologies, and to understand and respect the

269 Ibid.
271 Alan Gilbert, ‘Reviews of Teaching, Learning and the Student Experience’, ibid, p. 4.
transformational potency of the communications practices, social norms and personal information management preferences that are growing up around them. This digital revolution is having ever more far-reaching impacts on libraries, classrooms, private study practices and resources, student-to-student interactions and the role and function of the teacher in higher education.\textsuperscript{272}

9.1 Quality of website

<table>
<thead>
<tr>
<th>Highlights:</th>
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</thead>
<tbody>
<tr>
<td>• A university’s web presence is considered to be extremely and increasingly important in relation to marketing</td>
</tr>
<tr>
<td>• It is also a visual representation of the university’s mission and/or philosophy and identity</td>
</tr>
<tr>
<td>• Leading universities are using their website homepage to showcase student talent</td>
</tr>
<tr>
<td>• A range of departments within the institution contribute to website design and leading universities are investing heavily in resources to produce vibrant state-of-the-art multimedia home pages that, in some cases, are refreshed daily</td>
</tr>
<tr>
<td>• The needs of the hearing impaired are being taken into account</td>
</tr>
<tr>
<td>• Websites need to be updated and redesigned on a regular basis</td>
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</tbody>
</table>

Although a university’s web presence is now almost always its most important marketing tool, the quality of university websites around the world varies considerably.

The significance of its web presence is clearly understood at MIT. Their website, which receives over three million hits per day, is maintained by a team including web strategists and designers and managing editors and is overseen by the News Office. The site hosts over a million documents. The philosophy behind the design of the MIT homepage reflects the Institute’s mission. It is an interactive site that is intended to inform and engage the MIT community and visitors.\textsuperscript{273}

The significance of a university’s web site not only as a marketing tool, but as a visual representation of the university’s mission and identity is being realised and many leading universities are redesigning their websites accordingly.

Stanford is in the process of doing so. Its University Communications department is partnering on the project with the Office of Undergraduate Admission and Financial Aid, which will be launching new web sites of its own using the same design. The Stanford redesign project is set to take a fresh approach to its web presence and to introduce new features. Design, navigation, content and functionality will be improved.\textsuperscript{274}

\textsuperscript{272} Alan Gilbert, ‘Positioning the University of Manchester as a Premium Provider’, ibid, p. 14.
\textsuperscript{273} http://web.mit.edu/site/aboutsite.html
\textsuperscript{274} http://speaking.stanford.edu/highlights/SU_Home_Page_Redesign_Coming.html
In February this year Princeton updated its website; the last redesign was three years ago. The new home page and top 200 pages of the main website are intended ‘to be more user friendly and to feature multimedia technology showcasing the accomplishments of students, faculty and staff’.

The Princeton home page,

with its signature emphasis on frequently refreshed news content, now prominently features video and other multimedia tools to visually demonstrate the creative and intellectually stimulating nature of life on campus. … In addition, a new ‘student work’ feature gives students opportunities to submit their own materials to be posted on the home page and puts Princeton in a relatively unique place among its peers in terms of prominently showcasing student talent. The feature already has been met with excitement by some graduate and undergraduate students, who were among those invited to preview the new site. … Each video posted will include closed captioning or a transcript for the hearing impaired. Other new technologies accessed through links on the main site include blogs, podcasts and vodcasts.275

9.2 IT infrastructure

Highlights:

- A well-resourced, well-defined IT infrastructure or framework is required to encompass and manage a broad range of services, and to guide new directions and policy
- Part of the IT services function is to provide expertise in both technology and pedagogy
- Regular communication with users at all levels is vital; interactive sessions are also valuable

IT departments at many of the highly ranked universities and colleges aim to offer a broad range of ‘state-of-the-art’ services and expertise within a robust infrastructure or framework. The provision of computing ‘capacity on demand’ and associated IT support and services is a key enabler of excellence and innovation. Communication between IT services and the rest of the university at all levels is regarded as extremely important.

At the University of California, Davis, the IT Strategic Plan aims to: ‘provide a state-of-the-art information technology infrastructure; advance information and educational infrastructures and services across the university; foster collaboration, innovation, and the development of new technologies; and provide technical support and expertise to the campus community’.

275 Vodcast refers to the online delivery of video, whereas podcast is audio only.
technology in support of learning and discovery; and, support the development of simplified business processes and services for students, faculty and staff”. To achieve this the mission of Technology Infrastructure is to provide ‘a robust technical framework for user and enterprise computing, and to broaden the University's capabilities for applying information technology within the enterprise’.  

At Duke University the Center for Instructional Technology (which is a library department) supports the academic mission by helping instructors find innovative ways to use technology to achieve their teaching goals. Drawing on expertise in both technology and pedagogy, CIT staff assist instructors with projects, share information across the university about effective practices and examine the effect of technology on teaching and learning. The CIT supports instructional technologies that can contribute to Duke’s academic excellence by increasing student engagement with course materials, supporting active learning strategies, better matching teaching and learning styles, fostering communication and collaboration, streamlining course administration and developing students’ skills for future learning and work. CIT systematically monitors and evaluates the impact and effectiveness of instructional technologies on the teaching and learning experiences of faculty and students and shares these findings with the campus community.  

At Stanford, IT Services includes a Strategy and Architecture group. The Architecture Group is the focal point for the IT Services department’s strategic direction. Our group, which includes both direct reports and key technology leaders from across the organization, sets the path for data management, reporting, middleware, storage, networking, and telecommunications. The group’s primary goal is to establish and maintain a set of architectural tenets and standards that will allow IT Services to develop and deploy systems and, more importantly, services that are robust, secure, and scalable in order to meet the University’s mission.  

MIT’s Network and Infrastructure Services Team ‘provide day-to-day operations, management and development of the MIT network and enterprise-wide computing infrastructure’. They aim ‘to provide a functional and solid foundation of technology in a diverse, open and challenging network and computing environment. The team leaders are members of the IT Architecture Group [; they] guide technological directions, review projects that impact the infrastructure and help set policy’.  

The Information Service and Technology team at MIT publishes regular online user-friendly newsletters giving details about items of interest such as publishing interactive web pages, highlighting security issues and publicising relevant software.  

276 http://stuaff.ucdavis.edu/reports/ITinfrastructure_plan.html  
278 http://www.stanford.edu/dept/its/organization/stratarchitecture/  
279 http://web.mit.edu/network/  
280 http://web.mit.edu/ist/isnews/
Similarly Dartmouth College Computing Services produces a brochure giving staff and students an overview of the services they provide which include help with a range of technology issues; the purchase of software, technology and peripherals; online and specialised training for staff and students; and the creation and maintenance of websites and promotional videos. They also keep the Dartmouth community up-to-date at quarterly ‘open house’ sessions.  

9.3 Wireless network

**Highlights:**

- Many universities are rapidly introducing wireless technologies to allow constant, personal access to inter- and intranet and to email communications on or near the university campus

Wireless networks allow users to connect via laptop or PDA equipped with a Wi-Fi compliant device to surf the web, to send and receive email and to perform other network tasks. The extent of wireless networks and the numbers of users accommodated at top universities vary widely.

MIT’s network accommodates 20,000 users and covers ‘some public spaces, most classrooms and the libraries’. A campus map is available showing network coverage.

At Cornell the wireless network accommodates 35,000 users and there are 469 wireless access points on campus. Cornell’s network ‘is available in selected areas on campus, including the libraries, many campus dining facilities, and student common areas’.

At Columbia, the wireless network, which accommodates 20,000 users, is ‘available to students, faculty, and staff and offers fast and reliable data connection speeds of up to 54Mbps’. The network offers all the computing services that the wired network does. Once you are equipped with a special PC card for your portable computer the network will be completely

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281 [http://www.dartmouth.edu/comp/docs/overview-of-services.pdf](http://www.dartmouth.edu/comp/docs/overview-of-services.pdf)
282 A PDA is a personal digital assistant; its main function is to act as an electronic organiser.
283 Wi-Fi is a wireless technology brand. ‘Common applications for Wi-Fi include Internet and VoIP (Voice over Internet Protocol) phone access, gaming, and network connectivity for consumer electronics such as televisions, DVD players, and digital cameras’. [http://en.wikipedia.org/wiki/Wi-Fi](http://en.wikipedia.org/wiki/Wi-Fi)
290 [http://www.cit.cornell.edu/redrover/](http://www.cit.cornell.edu/redrover/)
accessible without the restraints of a network cable and jack. Wireless users can roam throughout the coverage zones and remain connected to the network. Network computing is no longer restricted to the dorm room or office. Grab your laptop and head outside.

9.4. e-learning

<table>
<thead>
<tr>
<th>Highlights:</th>
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<tbody>
<tr>
<td>• Interactive and social networking technologies such as Facebook are being utilised to support learning and courses are being developed that reflect the way students want to learn</td>
</tr>
<tr>
<td>• Blogs and social networking can be used to extend discussion time with academics</td>
</tr>
<tr>
<td>• e-learning is being combined with outreach to gifted students</td>
</tr>
<tr>
<td>• Open access to course materials may promote the university’s reputation</td>
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</table>

E-Learning can be defined as ‘learning facilitated and supported through the use of information and communications technology. It can cover a spectrum of activities from the use of technology to support learning as part of a “blended” approach (a combination of traditional and e-learning approaches), to learning that is delivered entirely online.’

In the UK the Joint Information Systems Committee (JISC) has developed a range of e-learning programs, which aim ‘to identify how e-learning can benefit learners, practitioners and educational institutions, and advise on its implementation’.

JISC sponsored the ‘Outstanding ICT Initiative of the Year’ Award 2007 – part of the Times Higher Awards. The award was won by the e-course team at the University of Birmingham’s School of Dentistry for its development of an e-course that allows learners to create and contribute their own materials and to interact with a full range of social technologies. The e-course developed by the team at Birmingham is wiki-based, with a full range of social networking … features, including podcasts, videos, wish lists, and anonymous feedback options, amongst others. The initiative has also created interactive captioned videos of procedures to help students prepare for unexpected clinical situations at short notice, as well as an ‘intelligent’ virtual microscope developed to run on any platform.

Giles Perryer, the e-course developer, borrowed ideas from Facebook, Google Maps and so on. Interactive resources allow students to watch clinicians on video and to put their own work on a wiki for comment and use. The virtual microscope allows...

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293 [http://www.jisc.ac.uk/whatwedo/themes/elearning.aspx](http://www.jisc.ac.uk/whatwedo/themes/elearning.aspx)
294 ‘A wiki is software that allows users to easily create, edit, and link pages together. Wikis are often used to create collaborative websites and to power community websites’. [http://en.wikipedia.org/wiki/Wiki](http://en.wikipedia.org/wiki/Wiki)
students to enlarge images and to see more than would be available in their histology books. They can also ask questions of a lecturer via the e-course message centre.\textsuperscript{295}

MIT started to develop its OpenCourseWare (OCW) website in 2000. Since then over 90\% of the MIT faculty have voluntarily contributed their teaching materials for free and open publishing on OCW.\textsuperscript{296}

An estimated 35 million individuals have accessed OCW materials since its launch, 60\% of them from outside the United States. Nearly 600 courses have been translated into languages including Chinese, Spanish, Portuguese and Thai. MIT has also provided more than 120 local copies of the site to universities in bandwidth-constrained regions such as Sub-Saharan Africa. OpenCourseWare also sparked a global movement that now includes more than 160 universities from around the world that together have published an estimated 5,000 courses. Along with leading universities from the United States, China, Japan and Spain, the OpenCourseWare Consortium now includes schools from Africa, Australia, Europe, Latin America and Southeast Asia.

MIT President Susan Hockfield said ‘OCW demonstrates MIT’s commitment to openness and to improving education on a global level. …The site embodies the generosity and dedication of our faculty.’

9.5 Feedback via teleconference

Many of the technological innovations discussed so far in this report involve enabling interaction between teachers and students or between students and their peers. At Duke University one teacher is exploring the notion of using teleconferencing to connect students with professionals who may be anywhere in the US:

Cary Moskovitz has been using the concept of ‘think aloud’ responses in his writing courses, getting professionals in various fields at Duke to record comments and feedback on student papers. Students gain valuable insight from a reader familiar with the subject area of the paper and gain a better sense of ownership of their writing in a ‘real world’ situation. To build on the success of this approach in his own courses, Moskovitz is now cooperating with the Duke Alumni Association to introduce this method into Writing in the Disciplines courses, by locating Duke alumni residing around the United States to serve as readers in three classes in Economics, History and Chemistry in Spring 2008. During Fall 2007, Moskovitz will use CIT [Center for Instructional Technology] funding to explore the technologies which will be used to implement the full project in Spring 2008. Readers will use a webcam-assisted teleconference to virtually ‘meet’ with their student partners, and web-based audio recording software to record a ‘think aloud’ response on a student paper in the course. Students will be able to use the readers’ feedback to edit and improve their writing based on this professional input. The CIT is consulting on technology approaches, documentation for the volunteer readers and students, and evaluation of the project.\textsuperscript{297}

\textsuperscript{295} http://www.jisc.ac.uk/publications/publications/inform20.aspx#andthewinneris
\textsuperscript{296} http://ocw.mit.edu/OcwWeb/web/about/president/index.htm
\textsuperscript{297} http://library.duke.edu/blogs/citprofiles/
10. Indigenous education

While even the most highly ranked universities in the world cannot claim to have been particularly successful in attracting Indigenous students to their campuses, many universities have centres, schools or programs set up to support Indigenous students.

The Harvard University Native American Program (HUNAP) has been running since 1970 ‘as a program to train Native American leaders in the field of education’. It has recently been ‘designated as one of Harvard’s twelve Interfaculty Initiatives’:

Consistent with the Harvard University charter of 1650 calling for the ‘education of English and Indian youth,’ HUNAP has developed partnerships with established faculties at Harvard to build viable programs of research, teaching, and outreach on issues affecting the lives of indigenous peoples. While these scholarly activities are central to the mission of the program and of a great university, HUNAP maintains a strong emphasis on student support and development.

HUNAP’s main interests include student enrichment:

To enhance the academic experience and to ensure the success of Native American students, we aim to create a supportive environment by offering educational, social and cultural programs. HUNAP provides a Student Office and Library; we gather as a community for dinners, town meetings, and social events; we host the Annual HUNAP Pow Wow and invite elders from our home communities to visit with us. Through the office of the Assistant Director for Student Development and Recruitment, HUNAP collaborates with Harvard's various recruitment and

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**Highlights:**

- Many leading and aspiring universities in countries with Indigenous communities have centres or schools for/of Indigenous studies
- These centres provide a range of support services for Indigenous students, including outreach, and they are active in trying to recruit students
- Distance education and the use of technology to enable Indigenous students to complete a tertiary education are recognised as valuable strategies
- The world’s highest-ranked universities are not, in general, much involved in distance education
- There has been some success in Canada with the provision of distance education to people living in remote areas
- Online learning is most effective if there are opportunities for experiential learning and collaborative interactive learning
- Open Learning Australia offer the only completely online Indigenous Studies degree course in Australia
- The use of technologies to reinvigorate Indigenous cultures is being studied in Canada
admissions offices to increase the number of Native Americans applying to and enrolling at the University.

Teaching and curriculum and outreach are also part of the program:

HUNAP supports a growing number of outreach efforts that address vital needs of Native American and First Nations communities. The Nation Building II course enables students from all parts of the University to engage in field-based research on problems identified by tribes and other Native organizations – with resulting projects contributing directly to the requesting organizations' decision-making capacities. Through Honoring Contributions in the Governance of American Indian Nations, a nationally prominent program of HUNAP’s Harvard Project on American Indian Economic Development, tribal organizations are recognized for innovative and exemplary contributions to Indian Country. The Harvard Project plays the critical role of researching and disseminating lessons drawn from Honoring Nations honorees.

Many Australian universities, of course, have centres or schools of/for Indigenous studies. ANU’s National Centre for Indigenous Studies (NCIS), for example, aims to be recognised as a leading academic institute for inter-disciplinary research in fields of relevance to Indigenous Australians, especially in relation to the enrichment of scholarly and public understandings of Australian Indigenous cultures and histories. NCIS works collaboratively with the nine main research and teaching areas of relevance to Indigenous Australians within the ANU.298

NCIS’s main interests include research, policy engagement, Indigenous studies, student support (although the website is still ‘under construction’) and a visiting scholars program.

10.1 Distance education for Indigenous students

The potential for internet and teleconferencing technologies to provide educational opportunities for Indigenous peoples in remote or rural communities or for those whose work, family or community commitments make attending classes difficult, has been recognised, but it appears that, in general, the most highly-ranked universities in the world have not been much involved in distance education initiatives.

There has been some use of technology to provide online distance education for First Nations peoples in Canada. These are well documented by McMullen and Rohrbach, who give examples of ‘successful radio, videoconferencing, text-based correspondence and internet delivery of courses to remote Aboriginal communities’ and claim that ‘computer-mediated communication can be effective if opportunities for experiential learning and relationship building are incorporated into the course design and delivery’.299

298 http://law.anu.edu.au/ncis/about.html
299 Bill McMullen and Andreas Rohrbach, 2003, Distance Education in Remote Aboriginal Communities: Barriers, Learning Styles and Best Practice, College of New Caledonia Press, Prince George, BC. http://www.cnc.bc.ca/__shared/assets/Distance_Education_in_Remote_Aboriginal_Communities7675.pdf See also Cora J. Voyageur, 2001, ‘Ready, Willing, And Able: Prospects For Distance Learning In
In the Australian context, Open Learning Australia (OLA) offers ‘the only completely online Indigenous Studies program in Australia’ leading to a Bachelor of Arts (Indigenous Studies). In collaboration with Indigenous involvement, OLA have contributed to setting up the Warrit Ngulu program – a range of flexible learning courses specifically for Aboriginal and Torres Strait Islander students. The flexibility of online study allows students to work collaboratively on projects; to discuss the study materials and assist each other with problems; and to interact with tutors and lecturers without leaving their communities, their families, and their peer groups.

The use of technology to reinvigorate Indigenous cultures is the subject of a course being run at the University of British Columbia. The Faculty of Education offers ‘Indigeneity, Technology, and Education’ as part of an ‘Educational Technology’ Masters degree. The course ‘explores central concerns of globalization and Indigenous people related to educational policy and practice’ and surveys ‘the sites where Indigenous people have employed computer and distance learning technologies to reinvigorate languages, oral traditions, and art forms that were in decline previously’. The course description refers to both theoretical and practical issues relating ‘to the protection of cultural property, Indigenous epistemology, the dilemmas of “place based” education, and the Native resistance to corporate hegemony’.


300 https://www.open.edu.au/wps/portal/!ut/p/kxml/VYvNDkNAGACfxRN8hLQetzShi_pZm-UuUqQ0bAC2qdvHdq0t8IMBgjRoRiuWurqEnj9QAGxa5USwdtZSPbhfzfoB-R79-UBECAqUaZ9iafSSzDdRVC3q2TIlqibgDjLIVNMyOyLEbfy4gPnQjP7Q-P61hxL-051WxZc587vYWmr3SvoltFnsEksqGx7r7g6kzrNKlqRrR29KJYUSABDBM88kY5lmomQ8gKAKK- Jdelta/base64xml/L3dJdyEvdOZNQUFzQUcvNEIVRS82XzBRITI?!WCW_GLOBAL_CONTEXT=OUA2/What%20to%20study/Qualifications/Qualification_Data/USA_IND_DEG

301 http://www.unisanet.unisa.edu.au/cccc/papers/non_refereed/bourke.htm#Learning%20from%20the%20Project

302 http://met.ubc.ca/met_courses/descriptions/etec521.htm
11. Learning spaces

Highlights:

- Pedagogy, learning styles and technology should drive the design of learning spaces
- The whole campus should be an integrated learning environment
- Learning spaces should be flexible and networked, bringing together formal and informal activities
- Some leading universities are following these principles in the conversion of existing classrooms to provide interactive flexible learning spaces that make use of relevant technologies
- Some highly ranked universities are adapting spaces to provide ‘hubs’ which encompass multi-purpose spaces that allow for working, studying and socialising
- Some institutions are inviting student collaboration in projects to provide new learning spaces
- The needs of the alumni association have been taken into account at UC San Diego, providing a model of integrating current-student and alumni engagement

Many universities, in seeking to improve the student learning experience, are giving increasing attention to the physical spaces in which learning takes place inside and outside the classroom. In Australia, a Carrick Institute project on learning spaces is leading to increased discussion of this topic, including important aspects such as pedagogy and student learning experience, and the interaction of the spaces and technologies that will best facilitate and support these.

In relation to adapting existing spaces or designing new ones, Diana Oblinger argues that learner expectations, the principles and activities that facilitate learning, and the role of technology should be drivers of learning space design. A central theme of Oblinger’s e-book is how to think about learning spaces to facilitate active, social and experiential learning. Oblinger asks vital questions such as ‘How do we turn the entire campus – and many places off campus – into an integrated learning environment?’ She argues that learning spaces should be ‘flexible and networked, bringing together formal and informal activities in a seamless environment that acknowledges that learning can occur anyplace, at any time, in either physical or virtual space’.

To give an example of current developments, Stanford University’s Wallenberg Hall has a number of classrooms and a lecture theatre that have been adapted for use as more flexible interactive learning spaces. Facilities now include ‘networked laptops;

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flexible furniture; collaboration stations; iSpace software; video conference
capability; huddleboards; and breakout spaces.  

Opened in 2000, Princeton’s Frist Campus Center – a student centre at the heart of the
campus – has a range of learning spaces:

Six small classrooms seating 20 are located on the 200 level. Four classrooms seating
20, one classroom seating 28 and one large classroom seating 48 are located on the
300 level. All tables in classrooms are provided with wireless internet for each
student. All small classrooms are provided with portable ‘media module’ equipment,
(including slide, overhead and video /data projectors, VCR and boom box), two
projection screens, room darkening shades and chalkboards.

All large classrooms are provided with installed media equipment (including a
video/data projector, slide projector, overhead projector, audio playback system and
remote controls), a motorized projection screen, a manual projection screen, room
darkening shades and a chalkboard.

The Lecture Hall provides fixed seating for 192 people. It offers a projection booth
with installed data/video projection, dual slide projection and document camera
projection along with a speech and playback audio system, remote control and an
assistive listening system.

As well as learning spaces the Frist Center has a games room, a lounge area, cafes and
a food gallery, a reading room, a film/performance theatre, a number of multi-purpose
rooms and an outside ‘patio’ area.

The University of California, San Diego, is currently in the middle of the expansion of
an existing building to provide a new ‘hub’ of student life on campus, which includes
spaces for interactive learning outside of a classroom environment. The hub will
encompass studying, working and socialising spaces and space for student and alumni
association offices.

The expansion will offer about 10,000 square feet of lounge space on several floors.
Students also will be able to bask in the sun on the Triton Stairs, a series of tall
concrete steps that will double as seating space. Group meeting rooms and study
lounges equipped with computers will make it easier to study.

Planning for the hub began when ‘students approved a referendum to increase fees
and build additional facilities’.

A committee, which included many students, helped determine which services would
be available in the new structure. The students asked for a permeable building that
would be inviting from many different angles … So, the building has many different
entrances. …

The hub will include a night-club, restaurant and performance lounge. ‘Performances
for an audience of 150 to 175 will include everything from rock and roll, to hip-hop,
to spoken word, to film festivals’.

304 http://wallenberg.stanford.edu/classresources/technologies.html
305 http://www.princeton.edu/frist/services.shtml#game
306 http://www.princeton.edu/frist/vtour.shtml
The new multi-functional building will also house student organisations and the Alumni Association.

‘I think that is a real turning point for alumni relations here,’ said Johnson, the Alumni Association assistant director. ‘For the first time since the association was established in 1964, we’re going to be in the hub where student activity takes place; we’re going to be visible’.

The Alumni Association has expanded the services it offers to current students, such as mentoring and scholarships. Significantly, Johnson believes ‘happy students make happy alumni’.  

It seems likely that making the alumni association more visible to current students and encouraging as much interaction as possible between alumni and students would create and perpetuate allegiances to the university community.

12. Environmental stewardship

<table>
<thead>
<tr>
<th>Highlights:</th>
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<tbody>
<tr>
<td>• Many world-class universities are taking environmental sustainability very seriously and some are taking the lead by teaching environmental stewardship by example</td>
</tr>
<tr>
<td>• Many universities now run courses related to issues around environmental sustainability</td>
</tr>
<tr>
<td>• Some universities include environmental awareness themes in the core curricula</td>
</tr>
<tr>
<td>• Many universities are setting up departments and employing professionals to oversee initiatives relating to environmental sustainability</td>
</tr>
<tr>
<td>• Some universities are setting up websites showcasing their commitment to environmental sustainability through a range of green campus initiatives and students are often heavily involved in these initiatives</td>
</tr>
<tr>
<td>• Environmental sustainability is an organisational change challenge</td>
</tr>
<tr>
<td>• Environmental initiatives can save money</td>
</tr>
</tbody>
</table>

Tim Flannery recently suggested that universities should be ranked according to the efforts they were making to achieve environmental sustainability. Environmentally

307 http://ucsdnews.ucsd.edu/thisweek/2008/02/11_price_center.asp
aware potential students could then choose where to complete their tertiary education accordingly.  

Certainly, many of the world’s highest-ranking institutions are aware of their environmental impact and of students’ interest in environmental issues, sustainability and climate change, and they are making commitments, introducing improvement initiatives and running courses and programs relating to environmental sustainability. According to Chancellor Marye Anne Fox’s letter to the community, the University of California San Diego is not only going green, we’re leading the pack in environment and sustainability issues. We’re using the diversity of our academic programs to show the relevance of climate change in all aspects of our lives. Our campus recently took part in a nationwide program to focus educational institutions on climate change solutions.

… We’ve already accomplished so much in our sustainability efforts. We’re replacing our vehicle fleet with hybrid, bio-diesel and electric vehicles; we’re designing all future buildings on campus to meet the standards of the nationally recognized green building rating system called Leadership in Energy and Environmental Design; we’ve hired a new Sustainability Coordinator to lead our first-ever, comprehensive, campus-wide sustainability assessment; we’ve decreased our energy consumption on campus through facility retrofits, saving the university $12 million annually; and we’re working to secure diverse sources of renewable energy. For these efforts, we’ve received five Best Practice Awards, three Excellence in Energy Efficiency Awards, and two Energy Education and Leadership Awards.

Harvard’s Green Campus Initiative (HGCI) began in 2000 with a one-year grant: This grant was used to employ Harvard’s first full time campus sustainability professional with a dual academic and administrative reporting requirement.

… The HGCI team works across a population of over 40,000 individuals in 600 buildings to ensure continuous improvement in campus design and operations in support of campus sustainability. We are working with a particular focus on reducing Harvard University’s greenhouse gas emissions which, like most large research universities, have been increasing at a steady rate of around 4% per year since 1990. In the last 2 years a number of schools at Harvard University have finally started to reverse this upward trend and are now reducing their emissions each year.

At Brown University the department charged with improving the University’s position with regard to environmental sustainability is naturally called ‘Brown is Green’. The University recently announced several new initiatives designed to cut back on its carbon emissions and committed itself to environmentally responsible expansion. Measures will include emissions and energy efficiency stipulations that will apply to existing University facilities as well as to acquisitions and new developments.

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309 Letter from Marye Anne Fox, Chancellor http://www-chancellor.ucsd.edu/letter2008_0204.html  
310 http://www.greencampus.harvard.edu/about/index.php
The plan includes a commitment to reduce the carbon emissions of existing University buildings by 42 percent from present levels by 2020, and students, administrators and faculty members see it as a key step in committing Brown to aggressive yet achievable environmental goals in the long term. … The University plans to curb its emissions in a variety of ways, such as switching to cleaner natural gas at its central heating plant, improving the generation of electricity on campus and revamping buildings with more energy-efficient technologies, said Chris Powell, director of sustainable energy and environmental initiatives.311

Environmental sustainability is, as the Harvard Green Campus Initiative website states, ‘a moving target that requires a rapid and wide reaching escalation in the pace of organizational change across every university. At its heart, the challenge posed by the environmental imperative is an organizational change challenge’.312

In some cases students are heavily involved in sustainable campus initiatives. The Association for the Advancement of Sustainability in Higher Education recently presented a Student Sustainability Leadership Award to a student from the University of Arizona who

worked with faculty to create a course focused on rainwater harvesting, a technique to address water scarcity – a major concern in Tucson. Under Emilie [Brill-Duisberg]’s leadership, students in the class designed and installed a working rainwater harvesting system on the UA campus. As a result of the success of Emilie’s efforts, the class will be held annually and development of additional rainwater harvesting projects is already underway.313

As well as teaching and leading by example through the introduction of a variety of green campus initiatives many universities now have a range of courses related to environmental and sustainability issues. One such is the interdisciplinary PhD course in Sustainable Development that began in 2004 in the School of International and Public Affairs at Columbia University.

There is … substantial and growing demand for PhDs with a broad social science education, strong research skills, and knowledge of the natural sciences. The purpose of the PhD in Sustainable Development is to create a generation of scholars and professionals equipped to deal with some of the most crucial problems in the world today. By combining elements of a traditional graduate education in social science, particularly economics, with a significant component of training in the natural sciences, the program’s graduates will be uniquely situated to undertake serious research and policy assessments to further the goal of sustainable development.314

The University of New England, Maine has a core curriculum for undergraduate students that includes a specific emphasis on environmental awareness. The first year theme is ‘Environmental Awareness’; the second, ‘Social and Global Awareness’; third, ‘Critical Thinking: Human Responses to Problems and Challenges’; and fourth,

312 http://www.greencampus.harvard.edu/about/index.php
313 http://www.aashe.org/highlights/awards06.php
314 http://sipa.columbia.edu//academics/degree_programs/phd/index.html
‘Citizenship’. Skills of communications, mathematics, and critical thinking are taught throughout the core. Designed to provide a foundation in the liberal arts, the core reflects the values of the college and is designed to prepare students for living informed, thoughtful, and active lives in a complex and changing society.315

13. Internationalisation

<table>
<thead>
<tr>
<th>Highlights:</th>
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<tbody>
<tr>
<td>The internationalisation of universities is in the nation’s interest</td>
</tr>
<tr>
<td>Educating international students produces geopolitical, cultural and economic benefits for Australia and can broaden the experience of local students</td>
</tr>
<tr>
<td>The effectiveness of a university’s international profile and reach must be constantly and consistently measured against what the world’s leading and aspiring institutions are able to achieve</td>
</tr>
<tr>
<td>Research that has an international perspective consists of not only international connectivity but using the university’s resources to address global problems and issues</td>
</tr>
<tr>
<td>Crucial factors in the effectiveness of a university’s contribution to global issues include the size and centrality of the issues they tackle, the scale of the projects undertaken, and the multiplicity of the partners with whom they work</td>
</tr>
<tr>
<td>Many institutions have foundations, institutes or centres of international studies that conduct research and teach not only the political, commercial and military aspects of globalisation but also the social, cultural and religious factors</td>
</tr>
<tr>
<td>Princeton has set up a governing body to oversee the internationalisation process</td>
</tr>
<tr>
<td>Being an internationalised university does not necessarily mean having satellite campuses overseas</td>
</tr>
<tr>
<td>Most, if not all, departments/schools in a university have the potential to incorporate a global perspective into their courses and research</td>
</tr>
<tr>
<td>There is growing demand for instruction in a range of languages such as Mandarin, Arabic, Persian and Turkish; in the contemporary politics of the Middle East, and of South and East Asia, especially China and India; and in the teachings of Islam</td>
</tr>
<tr>
<td>Many universities are forming strategic alliances with carefully selected overseas universities; partnerships may include exchange of staff, students, programs, and courseware; intellectual property alliances; joint-badged degrees; and informed benchmarking</td>
</tr>
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</table>

Internationalisation of the university can be defined as ‘the process of integrating an international, intercultural, or global dimension into the purpose, functions, or

315 http://www.une.edu/registrar/catalog/0708/undergrad/core.asp
delivery of post secondary education’.\textsuperscript{316} As will become evident, it can include many elements and take many forms. The key elements include:

- Supporting research which contributes to solving global problems
- Promoting understanding and the adoption of global values in the education of local and international students
- Encouraging international, intercultural and interfaith awareness throughout the whole university community and a culture in which people of all backgrounds and faiths feel equally welcome
- Seeking the best students and academic staff from around the world
- Encouraging language studies
- Developing a curriculum that reflects international experience and issues
- Encouraging staff and students to pursue international study, internships and/or community service opportunities
- Engaging with alumni wherever they are in the world
- Producing graduates for a competitive international marketplace\textsuperscript{317}

Internationalisation is vital to individual universities and, having a range of universities with international perspectives also benefits the nation. In the UK context Professor Alison Richard, Vice-Chancellor of the University of Cambridge, has argued that

Speaking locally, parochially, for Cambridge it [the process of internationalisation] is absolutely a matter of keeping the university among the handful of universities recognised as the best in the world. For the nation, universities extend the UK’s influence around the world, in addition to being a foreign currency earner, through the students we educate and through the impact of our research. Finally, I believe it is healthy, helpful and actually critical for there to be several centres of excellence in the world. The UK is one and it is of global importance, not just of national importance, that we remain one.\textsuperscript{318}

Many leading universities are taking proactive measures to internationalise their research, their teaching, their communities and their cultures.

13.1 International students

The advantages of educating international students – for a university, its students and the nation – are not just financial. Universities UK claims:

UK universities and the UK as a whole benefit greatly from international activities and, particularly, from the opportunity to educate citizens of other countries. This provides the UK with significant geopolitical and cultural benefits as well as broadening the educational experience of UK students and ensuring the diversity of the student body. The international activities of UK universities make an important

\textsuperscript{316} J. Knight, 2003, ‘Updated internationalization definition’, \textit{International Higher Education}.

\textsuperscript{317} Adapted from: \url{http://www.lfhe.ac.uk/publications/leadershipsummit2006.pdf} and Markwell, ibid, p. 22.

and growing contribution to their income and to export earnings for the UK economy.319

13.2 Solving global problems

Many leading universities recognise that they have a leadership responsibility in solving global problems. Eric Thomas, Vice-Chancellor at Bristol University argues that ‘the pursuit of innovative global research is the absolutely prime characteristic’ of a truly global university, but,

Clearly, global research consists of more than just greater ‘connectivity’, i.e. putting people together in different ways, maximising effective use of logistics, video seminar series and summer institutes. All of these are good in themselves and may lead to new ways of thinking and collaborating, but they are not ‘global’ characteristics. The global part of this comes in the marshalling of these universities’ huge intellectual and logistical resources to address global problems and questions in new ways. The scale of the endeavour, the size and centrality of the questions and the multiplicity of partners are the crucial factors here.320

One interesting example is a research project being run at Columbia University’s Center for Children’s Environmental Health. The project uses molecular epidemiology ‘to determine the health risks to children from environmental pollutants generated by burning of coal and other fossil fuels’. The Center is collaborating with the Columbia University Center for International Earth Science Information, the Natural Resources Defense Council, and representatives of the Chongqing Municipal Government to launch a project in China.

The China project will determine the health benefits to newborns of reducing in utero exposure to toxic air pollutants generated by coal burning. Through this collaboration, the research in China will be closely linked with ongoing projects in the United States and Poland.321

13.3 Research and teaching with a global perspective

Many of the world’s highest-ranking institutions proactively integrate international, national and local issues into research and teaching programs. Many universities have created institutes or foundations that promote research and teaching on a range of global issues.

In 1996 Princeton revised its unofficial motto, from ‘Princeton in the Nation’s Service’ to ‘Princeton in the Nation’s Service and in the Service of All Nations’. ‘It did so to recognize that … in order to be a great American university, Princeton must integrate the national and international domains into a cohesive educational


enterprise’. Following a review in 2003 the Princeton Institute for International and Regional Studies was founded. Its mission is ‘to conduct collaborative, interdisciplinary research and teaching projects that help to integrate international relations and regional studies approaches’. 322

Similarly,

For the past seventeen years, the Harvard Foundation has sponsored a variety of programs which have informed the subject of American and global cultural pluralism, ranging from a student/faculty panel discussion on international peace initiatives lead by U.N. Secretary General Boutros Boutros Ghali to a presidential commission hearing on wartime relocation and internment of Japanese American citizens to a science conference on advancing minorities and women in science, engineering and mathematics featuring Dr. Shirley Ann Jackson, Chairman of the Nuclear Regulatory Commission. 323

At the Centre of International Studies at Cambridge University, social, cultural and religious factors relating to globalisation are considered to be as important as political, commercial and military ones:

Globalisation has resulted in an increasingly integrated world, creating new opportunities for economic, political and military collaboration across borders and continents. As continuing tragic events demonstrate, any breakdown in such relationships has global repercussions, threatening the livelihoods and lives of millions of people across the world. Social, cultural and religious factors are as important as political, commercial and military ones in the current world climate. 324

Following September 11, 2001, America’s educational institutions have been called upon to help foster a greater understanding of the Middle East and the Muslim world. Colleges and universities have apparently struggled to respond to a growing demand for instruction in Arabic, Persian and Turkish and for courses relating to the history and contemporary politics of the Middle East, as well as in the teachings of Islam. 325

Many universities have Asian and/or Middle East Studies centres. Oxford’s St Antony’s College, for example, (which has a number of regional studies centres) has the Middle East Centre, which was established in 1957 to promote interdisciplinary scholarship on the modern Middle East. Centre fellows teach and conduct research in the humanities and social sciences with direct reference to the Arab world, Iran, Israel and Turkey. 326 At Brown University the Center for Language Studies provides tuition in Japanese, Korean, Chinese and Hindi/Urdu among other languages. 327

According to Shirley Tilghman and Christopher Eisgruber at Princeton:

To flourish in this [increasingly globalised] environment, Princeton—and, indeed, America’s universities and colleges more generally—will have to find ways to meet 322 http://www.princeton.edu/pr/reports/int/home/index.htm
323 http://www.fas.harvard.edu/~harvfoun/about_1.html
324 http://www.intstudies.cam.ac.uk/centre/importance.html
325 http://www.watsoninstitute.org/news_detail.cfm?id=620
326 http://www.admin.ox.ac.uk/postgraduate/caz/cent.shtml
327 http://www.brown.edu/Departments/CLS/lang_instruction.shtml
the challenges of internationalization. Students will have to be knowledgeable about, and comfortable interacting with, cultures different from their own. Researchers will have to become more attentive to international issues and more sensitive to the international dimensions of domestic problems. Faculty will have to recognize that their potential collaborators and rivals will come from not only familiar institutions in the United States and Europe, but also a host of new, and newly vigorous, universities throughout the world.

Tilghman and Eisgruber also point out that the ‘accelerating speed of change in the world means that we must continually assess and enhance our effectiveness in the ways we engage the world’.328

At many of the leading and aspiring universities there is recognition that it is not just the centre or institute of international studies that should be specifically concerned with international topics. Most, if not all, departments/schools in a university have the potential to incorporate a global perspective into their courses and research.

At Princeton, following a review, there is an initiative to encourage and facilitate ‘faculty-driven proposals to internationalize Princeton’s research and teaching agenda’. Princeton will not be investing in satellite campuses but will foster exchanges and research involving academics and students. The University has been called upon to raise ‘substantial’ funds to support these initiatives and to provide ‘effective governance mechanisms and administrative leadership’. A governing body with a status comparable to the Council on Science and Technology or the Council of the Humanities is to be set up to oversee international initiatives.329 Subjects on offer for the Fall 2008-09 semester at Princeton include: ‘Japanese Popular Culture in the Age of Globalization’, ‘Space and Place in Modern Hebrew and Arabic Literature’ and ‘Turkish Politics in the 1990s: Restoration and Implosion’.330

13.4 Significant partnerships and exchange programs with leading institutions331

Many world-class universities are recognising the necessity of forming alliances and setting up a range of exchange programs and collaborations with significant overseas institutions. These include, for example, Universitas 21, the World Universities Network (WUN) and the Association of Pacific Rim Universities (APRU).

Established in 1997, Universitas 21 is an international network comprising twenty-one leading research-intensive universities in thirteen countries.

Collectively, its members enrol over 650,000 students, employ over 130,000 staff and have over 2 million alumni. Their collective budgets amount to over US$13bn and has an annual research grant income of over US$3bn. The network’s purpose is to facilitate collaboration and cooperation between the member universities and to

329 http://www.princeton.edu/pr/reports/int/home/index.htm In February 2008 Princeton appointed the inaugural Director of this new body – the Council on International Teaching and Research, see http://www.princeton.edu/pr/pwb/08/0204/citr/
330 http://registrar1.princeton.edu/course/upcome/RaceEthnicityCourses.pdf
331 See also Section 7.1.2 Study Abroad opportunities
create opportunities for them on a scale that none of them would be able to achieve operating independently or through traditional bilateral alliances.

The network’s core underlying principles are:

- a global focus and perspective
- a commitment to excellence in all we do
- a commitment of those involved to collaborative and co-operative work and spirit while ensuring there are clear outcomes
- a determination to achieve added value
- a constant striving for innovation and the creation of multilateral opportunities for members
- sustainability of activity

The Worldwide Universities Network is a partnership of sixteen research-led universities from Europe, North America, South East Asia and Australia.

The … alliance exists to make significant advances in knowledge and understanding in areas of current global concern. By fostering and encouraging collaboration between members, WUN brings together the experience, equipment and expertise necessary to tackle the big issues currently facing societies, governments, corporations and education.

The network supports its mission by

- providing support for building and sustaining research communities through the provision of funding, through an international network of contacts and through support for the development and use of communication aids such as websites, videoconferencing and access grid technology
- providing support for personal and academic growth through the Research Mobility Programme which allows postgraduate students and staff at WUN member universities to spend time at other institutions within the network
- enhancing the learning experience and internationalises curricula through the development of e-learning theory, practice and programs
- organising regular online seminars which are available to staff and students at member universities. Seminars are delivered by leading academics from the membership with themes and topics ranging across the research spectrum.

The Association of Pacific Rim Universities was formed in 1997. Its objectives are:

- to promote scientific, educational and cultural collaboration among Pacific Rim economies. In both its objectives and guiding principles, APRU embodies a commitment to global academic and research standards. APRU recognizes that its activities can be powerful catalysts for expanding educational, economic, and technological cooperation among the Pacific Rim economies. In this regard, the association seeks to promote dialogue and collaboration between academic institutions in Pacific Rim economies so that they can become effective players in the global knowledge economy.

332 http://www.universitas21.com/about.html
333 http://www.wun.ac.uk/aboutus.php
334 http://www.apru.org/about/
According to Niland, ‘with a new internationalism at hand and with a new competitiveness afoot, a new strategy on alliances is needed for universities pursuing the world-class goal’. He argues that membership of an alliances should indicate:

- mutual recognition of each member’s programs for degree progression requirements;
- fully-integrated academic programs in pilot areas, possibly leading to joint-badged degrees;
- extensive staff exchanges for areas such as student administration, facilities management and financial services;
- open access to each member’s courseware, and internet program delivery as well as intellectual property alliances; and, informed benchmarking across an array of performance areas.

## 14. Resources

The cost of providing students with a first-class learning experience in a world-class university is high. One of the outstanding attributes of the world’s leading universities is the scale of resources available to them. Although the proportions from each source will vary greatly depending on the country, kind, and wealth of institution, the resources come from such sources as the following:

- student fees
- government grants
- research grants from government agencies
- research grants from private sources
- endowments and philanthropic gifts
- commercialisation of research

While it’s not possible to discuss all of these here, a comparison of the endowment funds and the income available to some universities may prove helpful.

In 2003 the Sutton Trust in the UK produced an interesting discussion paper in response to a higher education White Paper in which the Government had suggested that ‘the way forward is through endowment. This will make the sector less dependent on any single source of funding’. The Sutton Trust points out that ‘one of the major differences between higher education in the UK and the US is the substantial endowments many American universities have established, the returns from which give them a much greater degree of financial autonomy than their British counterparts’. The Trust produced a table comparing the endowments of a range of UK and US universities in 2002.

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### Table 13: A comparison of the endowment funds of a range of UK and US universities (2002)

<table>
<thead>
<tr>
<th>United Kingdom</th>
<th>£m</th>
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<tbody>
<tr>
<td>1= Cambridge</td>
<td>2,000</td>
</tr>
<tr>
<td>1= Oxford</td>
<td>2,000</td>
</tr>
<tr>
<td>3  Edinburgh</td>
<td>160</td>
</tr>
<tr>
<td>4  Glasgow</td>
<td>120</td>
</tr>
<tr>
<td>5  King’s</td>
<td>100</td>
</tr>
<tr>
<td>6  Liverpool</td>
<td>93</td>
</tr>
<tr>
<td>7  Manchester</td>
<td>90</td>
</tr>
<tr>
<td>8  UCL</td>
<td>81</td>
</tr>
<tr>
<td>9  Birmingham</td>
<td>65</td>
</tr>
<tr>
<td>2  Surrey</td>
<td>59</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>United States</th>
<th>£m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Harvard</td>
<td>10,700</td>
</tr>
<tr>
<td>2  Yale</td>
<td>6,600</td>
</tr>
<tr>
<td>3  University of Texas</td>
<td>5,400</td>
</tr>
<tr>
<td>4  Princeton</td>
<td>5,200</td>
</tr>
<tr>
<td>5  Stanford</td>
<td>4,800</td>
</tr>
<tr>
<td>6  MIT</td>
<td>3,400</td>
</tr>
<tr>
<td>7  Emory</td>
<td>2,800</td>
</tr>
<tr>
<td>8  Columbia</td>
<td>2,600</td>
</tr>
<tr>
<td>9  University of California</td>
<td>2,600</td>
</tr>
<tr>
<td>10 Texas A&amp;M</td>
<td>2,300</td>
</tr>
</tbody>
</table>

The Trust point out that ‘either Oxford or Cambridge would come 15th in the US list, and no other UK university would come in the top 150. Surrey (10th in the UK), would come just 305th in the US’.  

The following table is intended to provide only a very basic comparison of some of the resources available to a small range of universities in the UK and US.

---

337 Bristol: [http://www.bristol.ac.uk/finance/statements/current/fs0506.pdf](http://www.bristol.ac.uk/finance/statements/current/fs0506.pdf)
Nottingham-Trent: [http://www.ntu.ac.uk/about_nt/financialstatement/55679.pdf](http://www.ntu.ac.uk/about_nt/financialstatement/55679.pdf)
Table 14: A comparison of the resources available to a range of UK and US universities (2006)

<table>
<thead>
<tr>
<th></th>
<th>Bristol</th>
<th>Nottingham-Trent</th>
<th>City, London</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total number of all students</strong></td>
<td>17,132</td>
<td>26,101</td>
<td>23,835</td>
</tr>
<tr>
<td><strong>Income (US dollars)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding council grants</td>
<td>222,717,797</td>
<td>146,560,496</td>
<td>59,009,743</td>
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<tr>
<td>Tuition fees &amp; education contracts</td>
<td>83,533,658</td>
<td>85,149,406</td>
<td>161,272,523</td>
</tr>
<tr>
<td>Research grants &amp; contracts</td>
<td>150,611,914</td>
<td>9,407,137</td>
<td>14,208,192</td>
</tr>
<tr>
<td>Other income</td>
<td>104,330,250</td>
<td>33,409,693</td>
<td>30,273,767</td>
</tr>
<tr>
<td>Endowment income &amp; interest</td>
<td>5,195,400</td>
<td>1,774,598</td>
<td>5,373,313</td>
</tr>
<tr>
<td><strong>Total income</strong></td>
<td>567,386,176</td>
<td>276,089,150</td>
<td>269,988,664</td>
</tr>
<tr>
<td>Net assets</td>
<td>N/A</td>
<td>272,739,258</td>
<td>225,541,041</td>
</tr>
<tr>
<td><strong>Chicago</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total number of all students</strong></td>
<td>14,721</td>
<td>208,000</td>
<td>11,847</td>
</tr>
<tr>
<td><strong>Income (US dollars)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government grants &amp; contracts</td>
<td>317,773,000</td>
<td>4,144,576,000</td>
<td>275,530,000</td>
</tr>
<tr>
<td>State educational financing &amp; capital appropriations</td>
<td>N/A</td>
<td>2,939,539,000</td>
<td>N/A</td>
</tr>
<tr>
<td>Tuition &amp; fees (net)</td>
<td>259,305,000</td>
<td>1,662,948,000</td>
<td>188,166,000</td>
</tr>
<tr>
<td>Capital &amp; private gifts, grants &amp; contracts</td>
<td>105,807,000</td>
<td>790,554,000</td>
<td>66,504,000</td>
</tr>
<tr>
<td>Dept of Energy laboratories</td>
<td>N/A</td>
<td>4,234,922,000</td>
<td>N/A</td>
</tr>
<tr>
<td>Other income</td>
<td>122,521,000</td>
<td>6,221,648,000</td>
<td>146,830,000</td>
</tr>
<tr>
<td>Endowment payout</td>
<td>176,648,000</td>
<td>N/A</td>
<td>109,270,000</td>
</tr>
<tr>
<td><strong>Total operating revenue</strong></td>
<td>1,378,360,000</td>
<td>16,769,633,000</td>
<td>2,482,063,000</td>
</tr>
<tr>
<td>Net assets</td>
<td>N/A</td>
<td>20,400,023,000</td>
<td>4,325,745,000</td>
</tr>
</tbody>
</table>
The University of Western Australia is a leading Australian research-intensive university with an international reputation for excellence, innovation and enterprise. The University has typically the highest (or second-highest) quality undergraduates of any university in Australia, and has been ranked second in the country for the quality of its undergraduate programs. Awards to its staff, including Nobel laureate and Australian of the Year, reflect the high quality of its research and community service. With its sandstone and terracotta buildings sited on the banks of the Swan River, amidst heritage-listed gardens, the University campus is regarded by many as the most beautiful in Australia. This is an enviable base from which to work towards becoming one of the top 50 universities in the world in 50 years and one of the top 100 by the time of the University’s centenary (2011-13).

There are very many things that UWA is doing extremely well, but the University must continue to make changes if it is to achieve its goal. As stated in the introduction, this paper is intended to be a conversation starter. While it provides some answer to the question ‘what are the attributes of some of the world’s “top 50” universities?’ it is also intended to raise many further questions and to provide fuel for conversations about what future directions UWA might take. Some of these questions might be:

1. Which aspects of the ‘attributes’ are especially relevant to the University’s current strengths and are worthy of further exploration, policy-making and action?

2. Which aspects of the attributes are particularly interesting in relation to new directions for the University and are worthy of further research, policy-making and action?

3. What might easily be done in the short-term?

4. What might be worth planning toward for the long-term?

Consideration of the educational attributes of the ‘top 50’ universities leads to many further detailed questions. Many, if not all, of these are already the subject of extensive work and discussion at UWA. Examples may include:

1. Which particular strategies relating to access and equity might we investigate further? Could UWA benefit from admitting students assessed on their potential rather than on a single TER score? How could this be done?
2. How will we keep up-to-date with information and communications technologies and how shall we decide which technologies will best enhance teaching and learning and the student experience?

3. How can we make teaching at UWA more efficient and more effective?

4. What can we do to enhance the student experience?

5. What can we do to improve interaction between students and academic staff and between students and their peers?

6. What can we learn about improving interactivity in larger classes from the strategies used in other universities and how can we implement similar strategies at UWA?

7. How do the attributes described in this paper affect issues relating to the review of course structures?

8. How can we best increase and improve the student accommodation available at UWA?

9. How can the colleges expand their contribution to improving the student learning experience?

10. Which strategies, described in this paper, might UWA adopt in order to enhance students’ and staff members’ engagement in and connectedness to the University community? How could we extend that to the local neighbourhood?

11. What can we do to equip our students with the awareness, skills and competences they will need to compete in an international marketplace and to contribute as global citizens?

12. What can we do to equip our students with the essential awareness and knowledge of Indigenous issues they will need to operate within Australian society and internationally?

13. Could we develop strategies that would give undergraduates real research experience?

14. Given the strategies being adopted at many leading universities around the world in relation to attracting and retaining world-class teachers and researchers, what should UWA do?

15. What should UWA do about enhancing the out-of-classroom experiences of its students? Is community service learning worth further investigation?
16. What is UWA’s responsibility to the local community? And what is the local community’s responsibility to the University?

17. What can be learned from what is being done at other universities to enhance the experience of international students? Could any of the strategies described in this paper be adopted by UWA?

18. How can we enhance alumni relationships with the UWA community and make better use of their expertise and experiences?

19. Notwithstanding resource constraints, how should UWA obtain the resources it needs to finance the achievement of its ‘top 50’ goal?

**Key Recommendations – next steps**

Because this is a discussion paper and only one stage in an ongoing process, there are relatively few recommendations at this stage. These relate specifically to this paper and the attributes of some of the ‘top 50’ universities described in it, and to the next steps in the process of moving UWA toward its goal of becoming one of the top 50 universities in the world.

The recommendations are:

1. That, aiming to offer the finest education it can and to develop its own unique qualities, the University of Western Australia should consider which particular educational attributes will help it achieve recognition as one of the ‘top 50’ universities in the world.

2. That those attributes should be built into its planning processes together with relevant goals, implementation strategies and target timelines. This should be reflected in the Operational Priorities Plan 2009-13, and in other planning documents.

3. That progress toward ‘top 50’ status should be monitored through regular reporting and accountability targets.

4. That, as a learning organisation, UWA should (both centrally and throughout the University) monitor developments, trends, and innovations in the ‘top 50’ institutions and in other aspiring universities internationally.

5. That the University should, as opportunity allows, continue to increase its focus on partnership and benchmarking arrangements with universities that are recognised as being internationally excellent.

6. That, with a number of alternative and highly influential rankings systems being developed around the world, UWA should pay close attention to the development of global ranking systems and should consider taking an active role in an Australian global ranking consortium, should one emerge.
7. That the Achieving International Excellence Working Party should continue its work throughout 2008 on which educational attributes UWA should particularly seek to develop.

What happens next?

This discussion paper is one step in an ongoing process. The Achieving International Excellence Working Party will continue to discuss the attributes of the world’s leading universities and invites comments from the University community, from friends of the University and others interested in higher education issues in WA, in Australia and internationally.

These comments will assist the Working Party to recommend priorities and strategies for the University for its Operational Priorities Plan 2009-2013, and also for longer-term University planning.

Comments received by **Friday 1 August 2008** will be especially helpful. Further comments will be welcome until Friday 31 October 2008.

Comments may be addressed to:

The Executive Officer (M465)  
Achieving International Excellence Working Party  
Office of the Deputy Vice-Chancellor (Education)  
The University of Western Australia

**Email:** top50-feedback@uwa.edu.au
SELECTED REFERENCES

(Other references are available in the footnotes.)


Gilbert, Alan, ‘Reviews of Teaching, Learning and the Student Experience: Pursuing Step Change for Improvement for Students’, 27 October 2007, University of Manchester. [http://www.manchester.ac.uk/medialibrary/staffnet/teaching_and_learning_review.pdf](http://www.manchester.ac.uk/medialibrary/staffnet/teaching_and_learning_review.pdf)


APPENDIX: tables of rankings

A. Shanghai Jiao Tong ranking
The sole focus of the SJTU ranking system is research; it takes essentially no account of issues around teaching and learning. The ranking is calculated using this data:

- Alumni winning Nobel prizes and Fields Medals
- Staff winning Nobel prizes and Fields Medals
- Highly-cited researchers in 21 broad subject categories
- Articles published in *Nature* and *Science*
- Articles indexed in the Science Citation Index, Social Sciences Citation Index, and Arts and Humanities Citation Index.

Table 1: SJTU rankings 2003-2007

<table>
<thead>
<tr>
<th>University</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard University</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Stanford University</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>University of California, Berkeley</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>University of Cambridge</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Massachusetts Institute of Technology</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>California Institute of Technology</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Columbia University</td>
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<td>9</td>
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<td>7</td>
</tr>
<tr>
<td>Princeton University</td>
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<tr>
<td>University of Chicago</td>
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<td>10</td>
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<tr>
<td>Yale University</td>
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<td>Cornell University</td>
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<tr>
<td>University of California, San Francisco</td>
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<td>17</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Johns Hopkins University</td>
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<td>22</td>
<td>22</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
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<td>14</td>
<td>14</td>
<td>20</td>
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<tr>
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</tr>
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<td>Imperial College London</td>
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</tr>
<tr>
<td>University of Illinois at Urbana Champaign</td>
<td>45</td>
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<td>25</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>ETH Zurich</td>
<td>25</td>
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<table>
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<tr>
<th>University</th>
<th>THES Ranking</th>
</tr>
</thead>
<tbody>
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<td>Washington University in St. Louis</td>
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<tr>
<td>Northwestern University</td>
<td>29 30 30 33 29</td>
</tr>
<tr>
<td>New York University</td>
<td>55 32 32 29 30</td>
</tr>
<tr>
<td>Rockefeller University</td>
<td>28 29 29 30 30</td>
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<tr>
<td>Duke University</td>
<td>32 31 31 31 32</td>
</tr>
<tr>
<td>University of Minnesota - Twin Cities</td>
<td>37 33 33 32 33</td>
</tr>
<tr>
<td>University of Colorado, Boulder</td>
<td>31 34 34 34 34</td>
</tr>
<tr>
<td>University of California, Santa Barbara</td>
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<tr>
<td>University of British Columbia</td>
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</tr>
<tr>
<td>University of Maryland at College Park</td>
<td>75 57 57 37 37</td>
</tr>
<tr>
<td>University of Texas - Austin</td>
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</tr>
<tr>
<td>University of Paris 6</td>
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</tr>
<tr>
<td>University of Texas Southwestern Medical Center at Dallas</td>
<td>34 36 36 38 39</td>
</tr>
<tr>
<td>Vanderbilt University</td>
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<tr>
<td>University of Utrecht</td>
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</tr>
<tr>
<td>Pennsylvania State University</td>
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</tr>
<tr>
<td>University of California, Davis</td>
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<tr>
<td>University of California, Irvine</td>
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<td>University of Copenhagen</td>
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<td>Rutgers University</td>
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<td>University of Southern California</td>
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<td>University of Paris 11</td>
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<td>Karolinska Institutet</td>
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<td>University of Edinburgh</td>
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<td>University of Munich</td>
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<tr>
<td>Technical University of Munich</td>
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<td>Australian National University</td>
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<td>University of Zurich</td>
<td>45 57 57 58 58</td>
</tr>
<tr>
<td>Brown University</td>
<td>49 82 82 85 70</td>
</tr>
</tbody>
</table>

**B. The Times Higher Education Supplement ranking**

In contrast to the SJTU methodology, the THES system explicitly aims to produce a ranking that covers both the research *and* teaching functions of universities. The THES ranking assesses universities according to the following criteria:

- Peer review (40%)
- Survey of major (mainly international) graduate recruiters (10%)
- The proportion of international students (5%)
- The proportion of international staff (5%)
- Student/staff ratio (20%)
- Research citations per head of staff (20%)

Table 2: Times Higher Education Supplement World University Ranking 2007

1. Harvard University
2. University of Cambridge
1. Yale University
2. University of Oxford
5. Imperial College London
6. Princeton University
7. University of Chicago
7. California Institute of Technology
9. University College London
10. Massachusetts Institute of Technology
11. Columbia University
12. McGill University
13. Duke University
14. University of Pennsylvania
15. John Hopkins University
16. Australian National University
17. University of Tokyo
18. University of Hong Kong
19. Stanford University
20. Cornell University
20. Carnegie Mellon University
22. University of California, Berkeley
23. University of Edinburgh
24. King’s College, London
25. Kyoto University
26. Ecole Normale Superieure, Paris
27. University of Melbourne
28. Ecole Polytechnique
29. Northwestern University
30. University of Manchester
31. The University of Sydney
32. Brown University
33. University of Queensland
33. National University of Singapore
33. University of British Columbia
36. Peking University
37. University of Bristol
38. University of Michigan
38. The Chinese University of Hong Kong
40. Tsinghua University
41. University of California, Los Angeles
42. ETH Zurich (Swiss Federal Institute of Technology)

43. Monash University
44. University of New South Wales
45. University of Toronto
46. Osaka University
47. Boston University
48. University of Amsterdam
49. New York University
50. The University of Auckland

The volatility of the THES rankings is reflected in Table 3 below, which shows the rankings in 2004 to 2007 of the universities in the top 20 in 2007. This volatility is, not surprisingly, even greater for lower-ranked universities, and is one of the many problems critics identify in the THES rankings.

Table 3: THES rankings 2004-2007

<table>
<thead>
<tr>
<th>University</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>Average score</th>
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</thead>
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<td>01</td>
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<td>University of Oxford</td>
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<td>03</td>
<td>02=</td>
<td>04</td>
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<tr>
<td>Yale University</td>
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<td>07</td>
<td>04=</td>
<td>02=</td>
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<td>Imperial College, London</td>
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<td>Princeton University</td>
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<tr>
<td>California Institute of Technology</td>
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<td>07</td>
<td>07=</td>
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<tr>
<td>University of Chicago</td>
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<td>17</td>
<td>11</td>
<td>07=</td>
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<td>09</td>
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<tr>
<td>Massachusetts Institute of Technology</td>
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<td>02</td>
<td>04=</td>
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<td>Columbia University</td>
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<tr>
<td>Duke University</td>
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<td>Cornell University</td>
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<td>20=</td>
<td>18</td>
</tr>
</tbody>
</table>

340 Adapted from http://en.wikipedia.org/wiki/THES_-_QS_World_University_Rankings
C. Newsweek ranking

According to Newsweek, their ranking evaluated schools on some of the measures used in well-known rankings published by Shanghai Jiaotong University and the Times of London Higher Education Survey. Fifty percent of the score came from equal parts of three measures used by Shanghai Jiaotong: the number of highly-cited researchers in various academic fields, the number of articles published in Nature and Science, and the number of articles listed in the ISI Social Sciences and Arts & Humanities indices. Another 40 percent of the score came from equal parts of four measures used by the Times: the percentage of international faculty, the percentage of international students, citations per faculty member (using ISI data), and the ratio of faculty to students. The final 10 percent came from library holdings (number of volumes).341

Table 4: Newsweek Top 50 universities 2006 342

1. Harvard University
2. Stanford University
3. Yale University
4. California Institute of Technology
5. University of California at Berkeley
6. University of Cambridge
7. Massachusetts Institute of Technology
8. Oxford University
9. University of California at San Francisco
10. Columbia University
11. University of Michigan at Ann Arbor
12. University of California at Los Angeles
13. University of Pennsylvania
14. Duke University
15. Princeton University
16. Tokyo University
17. Imperial College London
18. University of Toronto
19. Cornell University
20. University of Chicago
21. Swiss Federal Institute of Technology in Zurich
22. University of Washington at Seattle
23. University of California at San Diego
24. Johns Hopkins University
25. University College London
26. Swiss Federal Institute of Technology in Lausanne
27. University of Texas at Austin
28. University of Wisconsin at Madison
29. Kyoto University
30. University of Minnesota Twin Cities
31. University of British Columbia

342 http://www.how2uk.com/English/top100nwk.html
D. US News and World Report rankings

The most prominent US ranking is the US News and World Report ranking. Its most important factors are:

- peer assessment: a survey of the institution’s reputation among presidents, provosts, and deans of admission of other institutions
- Retention: six-year graduation rate and first-year student retention rate
- Student selectivity: standardized test scores of admitted students, proportion of admitted students in upper percentiles of their high-school class, and proportion of applicants accepted
- Faculty resources: average class size, faculty salary, faculty degree level, student-faculty ratio, and proportion of full-time faculty
- Financial resources: per-student spending
- Graduation rate performance: difference between expected and actual graduation rate
- Alumni giving rate

Table 5: US News and World Report America’s Best Colleges 2008 – national universities

1. Princeton University
2. Harvard University
3. Yale University
4. Stanford University
5. University of Pennsylvania

343 http://en.wikipedia.org/wiki/College_and_university_rankings#Newsweek
344 Adapted from http://colleges.usnews.rankingsandreviews.com/usnews/edu/college/rankings/brief/t1natudoc_brief.php
In the US, an attractive option for many talented prospective undergraduate students is a liberal arts college:
Table 6: US News and World Report America’s Best Colleges 2008 – liberal arts colleges

1. Williams College
2. Amherst College
3. Swarthmore College
4. Wellesley College
5. Carleton College
6. Middlebury College
7. Pomona College
8. Bowdoin College
9. Davidson College
10. Haverford College
11. Claremont McKenna College
12. Wesleyan University
13. Grinnell College
14. Vassar College
15. Harvey Mudd College
16. Washington and Lee University
17. Smith College
18. Hamilton College
19. Colgate University
20. United States Naval Academy
21. Oberlin College

E. Washington Monthly rankings

In deliberate contrast to the US News rankings, the Washington Monthly rankings for national universities and liberal arts colleges are based upon three equally weighted categories:

- **Community Service score:**
  - The percentage of students enrolled in the Army and Navy Reserve Officer Training Corps
  - The percentage of alumni who are currently serving in the Peace Corps
  - The percentage of its federal work-study grants devoted to community service projects

- **Research score:**
  - The total amount of an institution’s research spending
  - The number of PhDs awarded by the university in the sciences and engineering
  - The percentage of undergraduate alumni who have gone on to receive a PhD in any subject.

- **Social Mobility score:**
  - The percentage of students on Pell Grants, which is thought to be a good measure of a school’s commitment to educating lower-income students.

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345 Adapted from http://colleges.usnews.rankingsandreviews.com/usnews/edu/college/rankings/brief/t1libartco_brief.php
Table 7: Washington Monthly College Rankings of National Universities 2006

<table>
<thead>
<tr>
<th>Rank</th>
<th>University Name</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Massachusetts Institute of Technology</td>
</tr>
<tr>
<td>2</td>
<td>University of California, Berkeley</td>
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<tr>
<td>3</td>
<td>Pennsylvania State University, University Park</td>
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<tr>
<td>4</td>
<td>University of California, Los Angeles</td>
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<tr>
<td>5</td>
<td>Texas A&amp;M University</td>
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<tr>
<td>6</td>
<td>University of California, San Diego</td>
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<td>7</td>
<td>Stanford University</td>
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<td>8</td>
<td>Cornell University</td>
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<td>9</td>
<td>South Carolina State University</td>
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<td>10</td>
<td>University of California, Davis</td>
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<td>11</td>
<td>University of Wisconsin, Madison</td>
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<td>12</td>
<td>Yale University</td>
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<td>University of Notre Dame</td>
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<td>University of Chicago</td>
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<td>University of Washington</td>
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<td>16</td>
<td>University of Illinois, Urbana-Champaign</td>
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<td>17</td>
<td>University of Texas, Austin</td>
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<td>18</td>
<td>University of Michigan, Ann Arbor</td>
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<td>19</td>
<td>College of William and Mary</td>
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<td>20</td>
<td>University of Virginia</td>
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<td>21</td>
<td>University of Rochester</td>
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<td>22</td>
<td>University of California, Riverside</td>
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<td>23</td>
<td>Duke University</td>
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<td>24</td>
<td>Alabama A&amp;M University</td>
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<td>25</td>
<td>Case Western Reserve University</td>
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<td>26</td>
<td>Rice University</td>
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<td>27</td>
<td>Ohio State University, Columbus</td>
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<td>28</td>
<td>Harvard University</td>
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<td>29</td>
<td>Johns Hopkins University</td>
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<td>University of Pennsylvania</td>
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<td>31</td>
<td>Georgetown University</td>
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<td>University of North Carolina, Chapel Hill</td>
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<td>University of Southern California</td>
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<td>34</td>
<td>Brown University</td>
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<td>Dartmouth College</td>
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<td>Columbia University</td>
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<td>Fordham University</td>
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<td>Northwestern University</td>
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<td>New Mexico State University</td>
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<td>45</td>
<td>Washington University in St. Louis</td>
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<thead>
<tr>
<th>Table 8: Washington Monthly Liberal Arts Colleges 2006</th>
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<tr>
<td>1. Bryn Mawr College</td>
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<td>2. Wellesley College</td>
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<td>3. Wesleyan University</td>
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<td>4. Haverford College</td>
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<td>5. Amherst College</td>
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<td>6. Mount Holyoke College</td>
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<td>7. Claremont McKenna College</td>
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<td>8. Williams College</td>
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<td>9. Whitman College</td>
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<td>10. Swarthmore College</td>
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<td>11. Wheaton College</td>
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<td>12. Carleton College</td>
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<td>13. Oberlin College</td>
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<td>15. Pomona College</td>
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<td>16. Smith College</td>
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<td>17. Harvey Mudd College</td>
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<td>18. Tougaloo College</td>
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<tr>
<td>19. Bowdoin College</td>
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<tr>
<td>20. Middlebury College</td>
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</tbody>
</table>

F. Melbourne Institute index

The Melbourne Institute index relies on the following criteria:

- Quality and international standing of academic staff as measured by criteria such as number and quality of publications, competitive grants obtained, and honours achieved (40%)
- Quality of graduate programs (16%)
- Quality of undergraduate intake (11%)
- Quality of undergraduate programs (14%)\(^{349}\)
- Resource levels (11%)
- Opinions gained from surveys of university CEOs and deans (8%)\(^{350}\)

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\(^{349}\) This is measured according to: the inverse of attrition rates for domestic and international students; the ratio of academic staff to students; the student evaluation of courses measured as mean response on a five-point scale to CEQ question ‘overall I was satisfied with the quality of this course’; and the percentage of students graduating with a pass or honours bachelors degree who in the next year are enrolled in a higher degree including masters by coursework, honours degree, masters by research and PhD. Ross William and Nina Van Dyke, 2005, *Melbourne Institute index of the international standing of Australian Universities 2005*, Melbourne Institute of Applied Economic and Social Research, University of Melbourne. [http://melbourneinstitute.com/publications/reports/MelbIndex.pdf](http://melbourneinstitute.com/publications/reports/MelbIndex.pdf)

\(^{350}\) Ibid.
Table 9: Melbourne Institute index of the international standing of Australian universities 2007

1. Australian National University
2. University of Melbourne
3. University of Sydney
4. University of Queensland
5. University of New South Wales
6. Monash University
7. University of Western Australia
8. University of Adelaide
9. Macquarie University
10. Queensland University of Technology
11. University of Wollongong
11. La Trobe University
13. University of Newcastle
14. University of Tasmania
14. Griffith University
16. University of Technology, Sydney
17. Curtin University of Technology
17. Flinders University
19. Murdoch University
20. RMIT University
20. University of South Australia
22. Deakin University
22. University of New England
24. University of Western Sydney
24. James Cook University
26. Swinburne University of Technology
27. Southern Cross University
27. University of Canberra
27. Victoria University
30. Australian Catholic University
30. Charles Sturt University
32. University of Southern Queensland
32. University of Ballarat
32. University of the Sunshine Coast
35. Edith Cowan University
36. Charles Darwin University
36. Central Queensland University

G. The Times Good University Guide

*The Times* Good University Guide ranks UK universities according to measures in eight key performance areas:

- Student satisfaction
- Research quality
- Entry standards
- Student/staff ratios
- Services and facilities spend
- Completion
- Good honours (first or upper second class)
- Graduate prospects.  

**Table 10: The Times Good University Guide 2008**

1. University of Oxford
2. University of Cambridge
3. Imperial College, London
4. London School of Economics
5. University of St Andrews
6. University College London
7. Warwick University
8. Bristol University
9. Durham University
10. King’s College, London
11. University of Bath
12. Loughborough University
13. University of Edinburgh
14. University of Southampton
15. Aston University
16. York University
17. Exeter University
18. School of Oriental and African Studies, University of London
19. University of Nottingham
20. University of East Anglia
21. University of Leicester
22. University of Sheffield
23. Newcastle University
24. Royal Holloway, University of London
25. University of Reading
26. University of Birmingham
27. Lancaster University
28. Cardiff University
29. University of Manchester
30. University of Leeds
31. University of Glasgow
32. University of Aberdeen
33. Queen’s University, Belfast
34. University of Liverpool
35. University of Sussex
36. University of Essex

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351 [http://www.timesonline.co.uk/tol/life_and_style/education/good_university_guide/article2235223.ece](http://www.timesonline.co.uk/tol/life_and_style/education/good_university_guide/article2235223.ece)
352 [http://extras.timesonline.co.uk/gug/gooduniversityguide.php](http://extras.timesonline.co.uk/gug/gooduniversityguide.php)
37. University of Stirling
38. University of Kent
39. Aberystwyth University
40. University of Surrey
41. City University, London
42. Queen Mary, University of London
42. University of Hull
44. University of Strathclyde
45. Heriot-Watt University, Edinburgh
46. Swansea University
47. Bangor University
48. University of Bradford
49. Oxford Brookes University
50. The University of Dundee