

# Blue Skies:

## **New thinking about the future of higher education in the Asia Pacific region**

A collection of short articles by leading commentators

Edited by Louis Coiffait and James Hill

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# ALWAYS LEARNING

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## About the Pearson Think Tank

The Pearson Think Tank is an independent education think tank focussed on the provision of, and access to, high-quality education for all. This includes practical research on best practice and education improvement, and on inequalities in educational access and outcomes; as well as consideration of philosophical questions around the nature of quality in education and the principles of social justice. Our thought-leadership draws on robust research to address pressing education policy issues and provide innovative, evidence-based advice to support policy-makers and practitioners.

## About Pearson Asia Pacific

At Pearson, we have built our organisation around a clear, defined goal; to help people make progress in their lives through learning. We recognise that a good education has the power to transform lives and help economies grow and prosper.

The Asia Pacific team works in over fourteen different countries and territories across the region. Connected by an enthusiasm for our shared goal, this passionate and dedicated team work together as one across the geographic and language barriers. We understand that everyone is unique and learns in their own way. To this end, Pearson Asia Pacific brings together the very best in content, curricula, assessment, training and information systems to make learning more effective and to support, motivate and inspire every educator and every learner.

## Acknowledgements

The Pearson Asia Pacific team would like to thank each of the contributors for giving their time and expertise to this project. We are delighted to be able to print a diverse range of material written by a very well-respected group of authors from locations across the region, including Hong Kong, Indonesia, Japan, and Australia. These articles offer a unique perspective of the higher education landscape in Asia Pacific.

The views expressed in this publication are those of the authors alone.

## Foreword

Dugie Cameron  
President, Pearson Asia Pacific

**‘Governments across the Asia Pacific region have a commonly held belief that generating a more highly skilled labour force will unleash greater innovation and boost economic growth rates.’**

Asian Development Bank, 2012, *Counting the Cost: Financing HE in Asia for inclusive growth*.



Demand for higher education is unprecedented. It is widely acknowledged that education is key and a better education will help you progress throughout your life. Governments are spending more time and money on education in the realisation that a better educated population will improve their competitiveness, development and growth. The OECD estimates that a country needs a participation rate of 40–50 per cent in higher education for economic growth.

Asian society sets a high premium on education. This is evident in the 2009 PISA results, with four out of the five top performing locations being in Asia (Hong Kong, South Korea, Singapore and Shanghai). We can also see the rapidly expanding middle classes in the Asian countries deemed ‘emerging markets’, with their increasing disposable incomes and desire to invest in overseas education for their children. China increased enrolments in universities from 2 million in 1999 to 30 million in 2010, and now Asian students represent 52 per cent of all students studying overseas worldwide.

The demand for higher education in the markets of Southeast Asia, East Asia and the Pacific accounts for 31 per cent of global higher education enrolments—if the estimates continue to be correct this will be approaching a minimum of 85 million HE students in Asia Pacific by 2025. Inevitably, with the size of these numbers alone, there is a rocky path ahead. It will be almost impossible for the significant growth in the demand for education in many developing markets to be met by local provision. In addition, there is growing dissatisfaction from parents and students in a number of these countries with local provision, leading them to increasingly seek a non-domestic solution.

At a time when the eyes of the world are focussed on the growth and potential of this region, the production of this publication is timely. Not only does it reflect a global perspective of higher education but also picks up on some key themes in the Asia Pacific region.

The idea behind this book is to inspire debate and discussion—I hope it will go some way to achieving this aim. Please let us know what you think about it and the issues it raises.

**Dugie Cameron** is the President of Pearson Asia Pacific and has been in the business of education for close to 30 years. He is a passionate believer in the transformational power of learning.

## The Blue Skies project

This book is intended to provide a non-partisan platform for debate, presenting a wide range of different opinions about the issues and priorities that matter to the future of higher education in Asia Pacific and beyond.

There is at times disagreement about priorities and methods, but common themes do seem evident. Most of our contributors are people and organisations you might expect to think wisely on the future of higher education—some are less well-known, but equally well-placed to comment.

Blue Skies is a deliberate attempt to broaden the conversation fundamentally, completely re-framing some issues, and to propose a few bold and innovative solutions. By focussing on the future this book forces attention upon the crucial ‘so what’ questions.

Above all, this book aims to paint a positive picture for the future of higher education. It draws out the many strengths within the sector, showcases some of the best thinking available, demonstrates the breadth, passion and expertise of the authors, and hopefully provides some hope for the future.

### Approach

This publication involves a targeted call for contributions, working with leading thinkers in the field to invite short, focussed articles under the ‘big-tent’ idea of ‘new thinking about the future of higher education’. Editorial influence has been kept to the bare minimum. Views from a few key individuals within Pearson are included but have been given no special emphasis over others.

### How to read Blue Skies

Blue Skies can be read in a number of ways. Cover-to-cover it provides a diverse and thought-provoking tour around all of the major challenges and opportunities facing the sector. Alternatively the reader can focus on the individual authors and article topics of interest. The sections attempt to group the articles in line with their main focus. However cross-cutting themes such as globalisation, technology and access run through many of the articles.

The hard copy of the book is also accompanied by a website (<http://blueskies.pearson.com>) which features summary videos from the authors as well as all of the book content in an online format, including downloadable PDFs. Readers are encouraged to visit the site, view the videos, share the content and add their own comments. Although this publication is very much ‘of the moment’ it is intended to provide lasting value in the future as a reference point at a time of major change.

## Overview of articles

The book begins with an introduction that sets the scene and explores the context that higher education institutions in Asia Pacific currently operate in. Common issues and trends across the region are highlighted, along with some of the key challenges that confront higher education systems and policymakers today.

The first section of articles deals with the question of how we can broaden the debate around higher education. Gavin Moodie's piece begins by identifying the key features that distinguish higher education from those of vocational or school education, most specifically by context and the level of students' independence. Martin Hughes tackles the subject of contradiction in higher education and explains why it, and the uncertainty and diversity that it creates, should be seen as a strength and positive influence in the future. At a time when many employers in APAC are complaining of a lack of suitably skilled graduates, Stefan Stern's article provides a refreshing perspective by advocating higher education as a good thing in itself and not necessarily just a stepping stone on the way to employment.

The way in which higher education should be delivered is the focus of the next section of the book. Glyn Davis kicks things off by discussing the rise of international students and the challenges and benefits this poses for institutions. Denise Bradley then looks at the issue of social inclusion in Australian universities and what the likelihood of change towards a fairer, less stratified higher education system is. This theme is continued by Matt Grist and Julia Margo who discuss diversity and practical reforms that could open higher education up to those from economically disadvantaged backgrounds and promote greater social mobility. Annie Gosling and Owen Gower then go on to consider how institutional changes in higher education systems (such as increased privatisation) might impact on student experiences and urge caution about keeping in mind the inextricable link between the two areas.

Section three of the book examines how higher education systems should make the most of technology and data. Chung-ming Leung explores the link between increasing connectivity and next-generation learning generally, then more specifically within the context of the current situation in Hong Kong. Rikiichi Koizumi continues the discussion with a case study from Japan, looking at the challenge of educating digital natives and analysing the effectiveness of some specific technology-related policies that the Japanese Government has implemented. Derek McAuley, Hanif Rahemtulla, James Goulding and Catherine Souch focus on data in their article about how Open/Linked Data have the potential to revolutionise higher education, although data literacy will be key in making this a reality. Data is also at the heart of Phil Baty's article on the future of university rankings, outlining the benefits they are able to offer and some modern developments in the way they are compiled, delivered and consumed by the end user.

The fourth section of the book is concerned with how teaching, learning and assessment should evolve. Sunaryo Kartadinata begins by addressing the subjects of accessibility and autonomy, both of which are key issues for higher education institutions across the Asia Pacific region. Brian Mooney advocates taking a step back to consider three fundamental stages that all education involves—know-that, know-how and know-why—and argues that the latter deserves a privileged position in our curricula as a way of ensuring self-transcendence for students. In his article, ‘Learning for the future’, Phil Race posits that educators aren’t keeping up with the key questions in students’ minds, and identifies seven factors that underpin successful learning, with academics now being facilitators of that learning in a challenging state of rapid evolution. Ezri Carlebach focusses on the importance of lifelong learning and its link to employability, but cautions that care is needed to ensure that the economic imperative doesn’t totally erode a spirit of play which is integral to our ability to overcome challenges in life. Lastly in this section, Sally Brown’s piece on how assessment can enhance student learning argues that assessment can be a powerful force in enhancing learning experiences, but must be done for the right purposes and in the correct way, including making full use of technology.

The final section of the book looks at what the role of enterprise and business should be. Isa Wong writes on the subject of education for employment in China and how the Government plans to make higher education more geared to towards meeting the needs of business. Geoff Mulgan and Mary Abdo discuss the role of innovation in helping institutions adapt to being both more global and more local, make the most of technology, cut costs and widen participation. Wendy Purcell and Caroline Chipperfield continue the innovation theme by examining how universities can drive an enterprise revolution by embracing a culture of enterprise embedded in an entrepreneurship ecosystem. The last article by David Docherty concludes the book by looking at how relations between higher education institutions and business can lead to success in knowledge-based economies, also encompassing the manufacturing and service sectors.

## Context: Higher education in Asia Pacific

At a time when the eyes of the world are focussed on the emergence of Asia (and China in particular) as global economic powers, higher education in the region is more important than ever. Developed economies rely on a flow of highly skilled labour to drive productivity, create more confident and affluent middle classes, and to increase business efficiency. Having a vibrant and high quality higher education system is widely accepted as being a necessary condition of economic growth and national competitiveness. This introduction seeks to provide some background information on the key themes and challenges that higher education is currently going through in the Asia Pacific region.<sup>1</sup>

Growing affluence in the region means that demand for higher education is rising nearly everywhere, with increasing numbers of 18 to 23-year-olds also fuelling this demand (with the exception of Australia, Korea and Japan, because of the lower birth rates in those countries). During the last two decades there has been a vast expansion in higher education across Asia Pacific. In China, the gross enrolment ratio of higher education increased from nine per cent in 1998 to 23 per cent in 2007, with total enrolment rising from 6.23 million to 27 million during that period.<sup>2</sup>

Inevitably, with the number of students increasing and governments no longer being willing and/or able to fully absorb the costs, the issue of funding sustainable tertiary education systems has arisen. Various methods have been used to tackle the funding shortfall but the most popular solution has been to move some of the cost of higher education onto students and their families by either introducing fees in public universities or encouraging private higher education institutions.

Tuition fees have been introduced across the region, and some countries, like Australia, Japan and New Zealand have subsequently increased them further.<sup>3</sup> Some universities reserve a portion of places for applicants who do not qualify for government scholarships but are willing to pay private tuition, and in other cases, universities impose special fees on students enrolling in high-demand programmes of study. In Indonesia for example, some major public universities quadrupled the

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<sup>1</sup> Please see 'A note on language' (p.19) for a definition of 'Asia Pacific' in this publication. It is important to mention that in such a demographically, geographically, politically and economically diverse region generalisations must be treated with caution: the purpose of this introduction is merely to highlight some of the key trends and issues that are common to many of the countries in the region.

<sup>2</sup> Hye-Rim Kim, Higher education sees rapid change, Bangkok Post/UNESCO, 12 March 2009, accessed April 2012, <http://www.unescobkk.org/education/news/article/higher-education-sees-rapid-change/>.

<sup>3</sup> OECD, Education at a Glance 2011: Highlights, OECD Publishing, 2011, accessed April 2012, <http://www.oecd.org/dataoecd/61/5/48631550.pdf>, p.62.

income that accrued from fees within a matter of years. Similarly, in Vietnam it is now common for public higher education institutions, or parts of them, to earn 40–45 per cent of their budgets from the collection of fees of various kinds.<sup>4</sup>

Overall, there are significant differences among Asia Pacific countries in the average tuition fees charged for tertiary education, but the fees are only one part of the picture. It is also important to look at broader support that may be available to students, most notably in the form of loans and scholarships. In this context, there are examples of countries that have high tuition fees and well-developed student support systems, such as Australia and New Zealand, whereas others, including Japan and Korea, have high tuition fees but less-developed student support systems.<sup>5</sup> Generally-speaking, financial constraints have meant that scholarships have given way to loans and there has been considerable experimentation with various kinds of loan schemes across the region.

The demand pressure on public universities has been eased and access to higher education further expanded by loosening restrictions on the private sector, allowing provision to be opened up. In Indonesia, Japan, Korea, and the Philippines, private universities enroll the majority of students (in some cases up to 80 per cent), and in Malaysia private colleges and universities have increased in number from about 100 to 690 over the past five years.<sup>6</sup>

The expansion of higher education into the private sector has created new concerns about the quality of education being provided, in addition to issues already present in the public sector as explosive enrolment increases put pressure on systems, resources, facilities and teacher/student ratios. A dearth of qualified and experienced instructional staff poses a serious challenge to the continued expansion of higher education institutions, the quality of service that they provide to students, and the quality of research that is undertaken, itself critical to the development of knowledge-based economies and the innovation upon which they depend.

Furthermore, corruption is a major problem within higher education institutions in Asia, evidenced by instances of plagiarism, falsification of data, and cheating on examinations. Cases of corruption and academic dishonesty seriously threaten educational quality and the international reputations of institutions where they occur.<sup>7</sup>

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<sup>4</sup> Asian Development Bank, *Higher Education Across Asia: An Overview of Issues and Strategies*, Asian Development Bank, November 2011, p.18.

<sup>5</sup> OECD (2011), *op. cit.*, p.62.

<sup>6</sup> Asian Development Bank, *op. cit.*, p.19.

<sup>7</sup> *Ibid.*, p.11.

Students (increasingly spending their own money to study) need to be protected as consumers through the assurance of good quality higher education. Existing regional initiatives aimed at ensuring quality education include the Asia-Pacific Quality Network (APQN), ASEAN Quality Assurance Network and the Chiba Principle of Quality Assurance. There are also regional initiatives geared towards recognition of qualifications, such as the Brisbane Communique, and the ASEAN Common Higher Education Area.<sup>8</sup>

The way in which higher education is administered and governed also has an important impact on the quality of service across the region. There have been moves to consolidate national oversight and responsibility for higher education in central or provincial ministries of education, and greater administrative autonomy has been given to individual colleges and universities in return for them covering more of their own costs. Autonomy continues to be one of the most pressing and controversial issues in the higher education sector of most countries across the region, including debates about academic freedom and political concerns.<sup>9</sup>

The higher education that's being provided must also be relevant to the needs of the labour market. Across much of Asia there are problems with graduates not being suitably trained and lacking the skills sought by employers, resulting in high graduate unemployment rates. Vietnam, for example, has few graduates in the areas of health and welfare, humanities and arts, and service industries. Cambodia has an unbalanced disciplinary structure, with 66 per cent of students graduating in social science, business or law. 80 per cent of Thai firms have said that they experience difficulty in filling job vacancies due to graduates who lack basic and technical skills, and in China graduate unemployment in 2008 rose to 13 per cent—high compared with the official national unemployment rate of 4 per cent.<sup>10</sup>

It could be argued that this issue stems from incoming students lacking the skills to handle the demands of university work due to low quality secondary level instruction and misalignment of secondary curricula with the kind of knowledge that is required for academic success at university level. A key issue is that across Asia admission to higher education is still heavily test based, and so countries (including Vietnam, Thailand, Indonesia and China) have increasingly been reviewing and diversifying their university entrance criteria and processes.<sup>11</sup>

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<sup>8</sup> Tshupo Gwatiwa, Trends of higher education in the Asia Pacific, UNESCO Bangkok, 22 March 2012, accessed April 2012, <http://www.unescobkk.org/education/higher-and-distance-education/news/article/trends-of-higher-education-in-the-asia-pacific>.

<sup>9</sup> Asian Development Bank, *op. cit.*, pp.24–26.

<sup>10</sup> *Ibid.*, pp.14–15.

<sup>11</sup> *Ibid.*, pp.13–14.

Whilst overall access to higher education has been expanded, issues of equity to access remain across much of the region. There is concern that the kind of financial issues mentioned above have impacted the ability of students from poorer backgrounds to continue their studies into higher education and also affected the kind of institutions they are able to enroll at. An issue of gender imbalance is also apparent, with the Asian region registering a 26 per cent rate in terms of gender balance enrolment—a larger gap compared to Europe's 70 per cent.<sup>12</sup>

Nevertheless, as economists speak of a shift in economic power from countries in the West to the East, the same is also starting to be said regarding their higher education systems. The Times Higher Education 2012 World Reputation Rankings suggest that universities traditionally considered to be the global leaders, such as those in the US and UK, are starting to slip in esteem, whilst those in Asia Pacific are on the rise. Universities in Japan, China, Singapore, Australia, Hong Kong and Taiwan have all moved up in the 2012 reputation rankings, consolidating their positions in the top 100 list.<sup>13</sup>

Higher education institutions now operate in a global market and trends in the globalisation of higher education are readily apparent in Asia Pacific, characterised by a degree of intra, inter and extra-regional mobility of tertiary students. Globally, the number of students attending institutions outside their country of origin tripled between 1985 and 2008,<sup>14</sup> with Asians accounting for 52 per cent of all students studying abroad worldwide.<sup>15</sup>

In 2009, China and Korea accounted for the most mobile students from among Asia Pacific countries, at 421,000 and 105,000 students respectively, with most of them heading for North America and Western Europe as well as within East Asia. There is also a unique flow of students between China, Japan and Korea plus a peripheral ASEAN flow into those three major economies.<sup>16</sup> The presence of Asian students is particularly strong in Australia, Japan and Korea, where they account for more than 75 per cent of all international students.<sup>17</sup>

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<sup>12</sup> Gwatiwa, *op. cit.*.

<sup>13</sup> David Jobbins, Reputation of UK universities slips as East catches up, *University World News*, 15 March 2012, accessed April 2012, <http://www.universityworldnews.com/article.php?story=20120313204541137#.T2aAjl2X5sk.twitter>.

<sup>14</sup> Richard Yelland, The globalisation of higher education, *OECD Observer*, No 287, Q4 2011, accessed April 2012, [http://oecdobserver.org/news/fullstory.php/aid/3731/The\\_globalisation\\_of\\_higher\\_education.html](http://oecdobserver.org/news/fullstory.php/aid/3731/The_globalisation_of_higher_education.html).

<sup>15</sup> OECD (2011), *op. cit.*, p.30.

<sup>16</sup> Gwatiwa, *op. cit.*.

<sup>17</sup> OECD (2011), *op. cit.*, p.30.

International mobility in higher education still operates within a very asymmetrical market, dominated by some strong providers, mostly in English-speaking countries. Globally, the United States hosts the largest number of international tertiary students, while the proportion of such students is highest in Australia.<sup>18</sup> Western institutions are also increasingly engaging Asian universities for franchises, twinning programs, joint or double-degrees and e-learning or distance learning—of which Malaysia and Singapore are notable examples.<sup>19</sup>

Having this international dimension to higher education is important in order to maintain international competitiveness through awareness of, and exposure to other cultures and languages. This has been recognised recently by the Japanese Government who have begun offering substantial grants to universities for study abroad programmes in response to the number of Japanese college students going to foreign universities declining by 28 per cent, from 82,000 in 2004 to 59,000 in 2009.<sup>20</sup>

At the same time as maintaining the flow and mobility of their domestic students to study abroad, the challenge for Asia Pacific economies and their higher education institutions is also to attract and cater for international students at home. As shown above, some countries within the region are already successfully doing this, such as Australia, where education is one of the country's largest exports. (Some estimates have put the value as high as Aus\$17.2 billion in 2008–09, or about 1.4 per cent of GDP, with growth of over 20 per cent from the previous financial year.<sup>21</sup>) The dominance of Australia—or the US, Canada and UK globally—reflects the fact that English is still the global business language of choice, but as Asian economies and trading links to them continue to develop there may be scope for this to change. Many companies in the region now consider Chinese Mandarin language skills, for example, to be extremely important when recruiting new employees.

A further way of attracting international students is to ease immigration policies to encourage the temporary or permanent immigration of students from abroad. Australia and New Zealand, for example, make it easier for foreign students who have studied in their universities to settle by granting them additional points in their immigration point system.<sup>22</sup>

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<sup>18</sup> Yelland, *op. cit.*.

<sup>19</sup> Gwatiwa, *op. cit.*.

<sup>20</sup> Editorial: The Japan Times, Money to study abroad, The Japan Times Online, 1 April 2012, accessed April 2012, <http://www.japantimes.co.jp/text/ed20120401a1.html#.T3hfRHgLQx4.twitter>.

<sup>21</sup> Yelland, *op. cit.*.

<sup>22</sup> OECD (2011), *op. cit.*, p.34.

One final element necessary to mention in any discussion about the current state of higher education is the role of technology. Technology is reshaping teaching and learning across the education sectors and no less so than in higher education. Improved technology is able to further widen access to higher education through the implementation of Open and Distance Learning (ODL). ODL continues to make up an increasing share of the market, particularly in China, Indonesia and Thailand where there is considerable government subsidy for this type of learning.<sup>23</sup> (In China, the government gives grants of around \$10,000 to professors at dozens of universities to help them improve their undergraduate teaching materials and then put them online—more than 10,000 courses from Chinese universities are now available online as a result.<sup>24</sup>) Most of the largest open universities in the world can now be found in the region, including the Central Radio and Television University of China, with over 2.6 million students.<sup>25</sup> Within China as a whole, more than 10 per cent of university students are engaged in online learning.<sup>26</sup>

Be that as it may, the scope to which improved technology is able to impact higher education is always going to be dependent on the wider technological infrastructure of a country and digital readiness of its population. Asia Pacific countries differ greatly in these terms, some being amongst the most technologically advanced in the world, whilst others still exhibit major weakness in terms of Internet penetration rates and personal computer ownership. The Internet penetration rate in Cambodia, for example, is just 0.5 per cent of the population, and in Indonesia it is only 10.5 per cent.<sup>27</sup> This needs to be developed in order for distance learning to flourish, although ‘M-learning’, whereby course materials are made accessible through Wi-Fi and mobile phones, is an alternative being experimented with by some universities (including City University of Hong Kong, Shanghai Jiaotong University, and the University of the Philippines Open University). Taking the example of Cambodia above, the country has the lowest Internet penetration rate in Southeast Asia and few landlines, but it also has the highest call rates and the world’s highest ratio of telephone users using wireless.<sup>28</sup>

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<sup>23</sup> Gwatiwa, *op. cit.*.

<sup>24</sup> Rebecca Clothey, *Current Trends in Higher Education: Expanding access in Asia Pacific through technology*, Higher Education Special Interest Group, 2010, accessed April 2012, <http://www.higheredsig.org/cihe/Number02-02.pdf>, p.3.

<sup>25</sup> Asian Development Bank, *op. cit.*, p.31.

<sup>26</sup> Clothey, *op. cit.*, p.3.

<sup>27</sup> Asian Development Bank, *op. cit.*, p.35.

<sup>28</sup> Clothey, *op. cit.*, pp.4–6.

It is clear, therefore, that higher education in Asia Pacific has gone through a period of substantial change over the last twenty years or so. This looks set to continue as economic development carries on, with increased affluence creating demand for further expansion, itself a prerequisite for healthy knowledge-based economies through the skills taught as well as the research and innovation generated. Serious challenges remain concerning funding, quality assurance—related to the availability and experience of teaching staff, corruption and issues of autonomy and monitoring—the suitability of graduates to labour market needs, equity of access, international competitiveness and technological readiness. The extent to which governments and higher education systems are able to deal with these issues will be key to Asia Pacific's overall economic development in the coming years.

## A note on language

In terms of remit and definition of Asia Pacific, this study focusses on those places that are covered within Pearson Asia Pacific's sphere of activity in East/Southeast Asia and Australasia, most notably: Australia, Cambodia, China, Hong Kong, Indonesia, Japan, Korea, Laos, Macau, Malaysia, New Zealand, Philippines, Singapore, Taiwan, Thailand and Vietnam. India isn't included, and neither is Russia, the US or any other country with an Eastern Pacific Ocean coastline (sometimes included in definitions of Asia Pacific as Asia-Pacific Economic Cooperation members).

Higher education, HE, HEIs, universities, college, the academy, tertiary education, academia, higher-level learning, Level Five/Six—call it what you will, in most non-technical uses, these words mean the same thing to the majority of people (courses with durations of usually three to four years, preceded by 13 years of education, including the completion of upper secondary or post-secondary non-tertiary education). Often those using them don't even appreciate the subtle differences between the different words. The etymology of the word 'university' reveals its heritage in the classical Greek concept of a 'universal' education, covering a broad array of what we would now call subjects, and often including different types of learning. The word then became more formalised as a type of organisational structure; a corporation, community or association of students, teachers and researchers. More recently, the concept has been broadened further beyond what is studied where, to who is studying, as demonstrated by modern preoccupations of moving higher education from an elite to a universal service, widening access and driving social mobility. However the issue of language is not a trivial one, for as many of the articles within this collection show, the sometimes simplistic and anachronistic concepts and assumptions used when considering higher education deserve to be challenged at times because they can limit both our understanding and the future opportunities available.

## Section one – How can we broaden the debate?

### I.1 What is ‘higher’ about higher education?

Gavin Moodie

This short article answers Cleveland’s question “What is ‘higher’ about higher education?”<sup>29</sup> by distinguishing higher education from vocational education on the one hand and school education on the other. It argues that education varies by the extent to which its context is academic disciplines and the extent to which its context is outside education, most often work. Higher education is distinguished from vocational education by being more academic and less externally contextualised than vocational education. School education is also academic and less externally contextualised than vocational education; higher education is distinguished from school education by being of a different and higher level but also by its focus on developing independent learners.

#### Introduction

Identifying what is ‘higher’ about higher education is a live issue now because higher education has been informally identified although not defined as the education offered by archetypal higher education institutions—universities, just as vocational education has been identified as education offered by vocational colleges. This identification is made problematic by the great diversity of institutions that offer higher education—from small community or higher education colleges whose only higher education awards are associate or foundation degrees of 2 years’ duration, to big research intensive universities which have a high proportion of their students enrolled in doctoral programs and research. The identification of higher education with universities has been undermined more recently by the vertical integration of tertiary education—the increasing tendency of universities to offer foundation, pathways and vocational programmes leading to their core programme the baccalaureate, and of vocational colleges offering baccalaureates leading from their core programmes, certificates and diplomas.

I suggest that two criteria are needed to identify higher education: context and level.

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<sup>29</sup> Cleveland, Harlan (1981) What is ‘higher’ about higher education? *Vital speeches of the day*, 6/1/81, volume 47 issue 16 pages 509–512.

## Context

Some higher education is in the liberal arts and sciences—in academic or ‘pure’ subjects or disciplines such as chemistry, literature, mathematics, philosophy and physics. Each of these disciplines is defined by a method for generating knowledge and the knowledge generated by that method. There is a continuum of academic disciplines from the natural sciences such as biology and physics which are primarily empirical, to the social sciences such as economics and psychology which are less heavily empirical, to the humanities such as literature and philosophy which are largely hermeneutic or interpretative.<sup>30</sup>

Some higher education takes place within the professions—subjects such as engineering, law and medicine. Professional subjects are fields of productive practice in which academic knowledge has been applied or recontextualised.<sup>31</sup> Each professional subject is oriented towards its field of practice and also towards one or more disciplines which it applies. Education in each profession develops students’ skill in practice and also their understanding of the recontextualised academic knowledge that the profession uses to solve new problems. Professional subjects are thus moderately contextualised by academic disciplines and moderately contextualised by their field of practice.

Professional education is vocational in the sense that it prepares graduates to practise an occupation. However, vocational education is more heavily contextualised by its field of practice and less contextualised by applied disciplinary knowledge than professional education. Most vocations therefore need less formal education than the professions. Vocations rely more on explicit work procedures, tacit work practices, processes for monitoring the amount and quality of work, supervisors and other aspects of the employment context.

## Level

Academic subjects are taught in primary and secondary education as well as in higher education, so higher education needs to be distinguished from school education. Some guidance may be gained from UNESCO’s *International standard classification of education* which classifies education by level and field to facilitate the collection and comparison of international statistics on education. UNESCO understands level of education to reflect the degree of complexity of knowledge, skills and capabilities that

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<sup>30</sup> Bhaskar, Roy (1998) [1979] *The possibility of naturalism: a philosophical critique of the contemporary human sciences*, 3rd edition, Routledge, London and New York.

<sup>31</sup> Bernstein, Basil (2000) [1996] *Pedagogy, symbolic control, and identity: theory, research and critique*, revised edition, Rowman & Littlefield Publishers, Inc, Lanham, p.9.

a program imparts.<sup>32</sup> UNESCO's International standard classification of education is adequate for distinguishing education by level since it is used extensively for educational statistics and description, for example, for the OECD's **Education at a glance**.<sup>33</sup> However, perhaps educational level may be distinguished more richly.

We observe that a person's education progresses by levels of independence. Children start learning by imitation, depending heavily on their carer and on other models. At primary school pupils are given tasks which the teacher monitors closely to ensure that pupils do the task correctly. Secondary school pupils are more independent—they are set homework which they are expected to complete in their own time—but within a highly structured framework. In higher education, students are given much more freedom to manage their own learning, but are still prescribed a curriculum. By the end of the baccalaureate one hopes that graduates are independent learners. On this understanding the baccalaureate is the process of developing independent learners, at least in a broad field, and the doctorate is the process of developing autonomous learners—ones who can write their own rules.

### Conclusion

This paper has argued that education differs by the extent to which it prepares students for productive practice which is based heavily on a context external to academic disciplines and by the extent to which it conveys disciplines which are based heavily in an academic context. It has also argued that education differs by level and particularly by the level of the students' independence. From this I conclude that higher education is education which develops graduates as independent learners of knowledge which is weakly or moderately contextualised by productive practice, such as in the workplace.

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<sup>32</sup> UNESCO (United Nations Educational, Scientific and Cultural Organisation) (1997) International standard classification of education, p.10, retrieved 23 December 2007 from [http://www.unesco.org/education/docs/iscled\\_1997.htm](http://www.unesco.org/education/docs/iscled_1997.htm)

<sup>33</sup> OECD (Organisation for Economic Co-operation and Development) (2011) *Education at a glance 2011: OECD indicators*.

## 1.2 Why contradiction is (and always will be) higher education's great strength

Martin Hughes

Higher education (HE) is full of contradiction. Contradiction conjures up images of uncertainty. And that makes me hopeful for the future.

Universities thrive on exploration and multiple perspectives. Every institution is rife with healthy argument. The pursuit of learning often conflicts with the pursuit of a better career. In short, one person's potion is another's poison.

No single purpose for HE can be defined. Yet this is precisely why I am optimistic. Far from a lack of purpose, we should celebrate an abundance of purposes.

However, in such uncertain times, focus can get lost amongst the contradiction. Ferdinand von Prondzynski says:

'... students sometimes [see HE] solely as the route to a formal qualification to establish their careers, industry as a way of providing specialist and sometimes quite narrow skills, and governments as a way of keeping people off the dole queues. The educational character of education is sometimes lost in all this and needs to be re-discovered.'<sup>34</sup>

As a diverse community, we cannot all face the same direction, but we should aim to work as a collective nonetheless. The sector faces many challenges that fuel uncertainty, but contradiction can offer a lifeline:

'Contradiction ... reminds us that resolution is fragile, temporary and, very often, incomplete – that disorder always looms. But perhaps these are the very qualities that fuel an inquiring mind. Perhaps we need contradiction to keep us alert to the responsibility of acting on our imaginations.'<sup>35</sup>

Our responsibility as individuals and as a collective should still offer flexibility. A broad brush approach to policy should be replaced by arrangements that can focus more specifically on different types of engagement within HE. It is necessary for a sector that has been given too many roles; otherwise focus is increasingly replaced by dilution.

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<sup>34</sup> "Do students learn anything much at college?", Ferdinand von Prondzynski - <http://bit.ly/fOxafN>

<sup>35</sup> "Working imaginatively with/in contradiction", *Journal of Higher Education Policy and Management*, 33:2, p. 1

There is no doubt that individuals within the sector assume many different identities. This should be applauded, so long as there is scope to work in a capacity that highlights the many, sometimes opposing, strengths of the sector. HE should benefit society as a whole.<sup>36</sup> To do this, focus must rest more on achievement, and less on competition.

However, as public funding is replaced by loans, universities (and students) are entering a time of commodification and marketisation. Should institutions seek continued success by covering a growing number of bases, or by choosing to concentrate from a more specialist viewpoint?

In true contradictory terms, I say both. The student landscape is changing and the future of funding is unlikely to be clear any time soon. It is crucial to open doors to an ever-diverse population and to provide accordingly. The trouble is making sense of how to 'provide accordingly'.

Policymakers are in danger of rushing into inappropriate action at the very time when measured leadership<sup>37</sup> will surely pay the greatest dividends.<sup>38</sup> Those offering creative leadership will seek to capitalise on continuous change, rather than attempting to maintain a rigid set of goals. Change requires agility, not a mad dash.

Until we fully acknowledge the wide remit HE covers, we cannot clearly identify the major (sometimes uniquely defining) differences within. Education as a concept is subjective and covers such varied purposes that universities cannot help but compete 'on status rather than educational effectiveness'.<sup>39</sup> The future of HE should allow status to be less about false or misleading hierarchies and more about Who, What, Why, When, Where and How it can boost the needs and desires of society and its members.<sup>40</sup>

Therefore, rushed decisions to save money are short-sighted. Stasis needs to be challenged, but so does change. The nature of HE suggests it should keep on questioning, giving and developing in line with our own inquisitiveness as human beings. We objectivise and restrict/limit at our peril!

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<sup>36</sup> "System members at odds: managing divergent perspectives in the higher education change process", Kathy Barnett, *Journal of Higher Education Policy and Management*, 33:2, p.138

<sup>37</sup> "Maximising the effectiveness of a scenario planning process", Nicola Sayers, *Perspectives* 15:1, p.14

<sup>38</sup> "Serve the servants, or leadership by degrees", Finbarr Livesey, *Times Higher Education*, 31 March 2011

<sup>39</sup> "Policy Watch", Roger Brown, *Perspectives* 14:4, p.128

<sup>40</sup> "Towards a pedagogy for a public university", Campaign for the Public University - <http://bit.ly/i9KpLD>

In the UK, several institutions have attempted to diversify. I am especially impressed by the University of Lincoln's 'Student as Producer',<sup>41</sup> which aims to reconnect research and teaching 'in a way that consolidates and substantiates the values of academic life'. Students actively engage in research and learning, rather than consuming knowledge. The unique elements at Lincoln are the students, the active research, and the ethos. Focus moves from subjects and qualifications to a way of being. Difference and contradiction are welcomed and—better still—can benefit everyone.

Alternative institutions which aspire to make education completely free and available to everyone, such as the University of Leicester's Third University<sup>42</sup> and the Really Open University,<sup>43</sup> should not be seen as competition to other centres of learning. The future of HE will likely include open institutions, just as it will include private providers and corporate-sponsored courses. Alternatives may not currently hand out recognised qualifications or feature in league tables, yet their development may impact wider society just as much as the established universities of today.

It is, therefore, clear that nobody should have a monopoly on education; neither on its purpose, nor on its uses. Removing contradiction only serves to close doors on those who could benefit. Doors need opening, both metaphorically and geographically:

'[Study locations] are not fixed, static, or unchanging. We create the locations we study, and this recognition ought to encourage us to continue to remap the geographies of literacy and cultural forms.'<sup>44</sup>

Global diversity is certain to impact students as much as universities. Applicants will make greater personal choices. Traditional school leavers will not treat university as a 'matter of course'. Considerations will go far beyond<sup>45</sup> gaining a 'good degree'.<sup>46</sup>

At the same time, some countries are about to see a steady decline in numbers of 18 to 21 year olds from 2012 onwards. In the UK, for example, even in 2010, 35 per cent of students entering HE had no UCAS points.<sup>47</sup> Institutions will be forced to cater to a wider base of people than even today. Many will be unable to study within current frameworks. This is an opportunity for further income, not just extra spending.

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<sup>41</sup> <http://studentasproducer.lincoln.ac.uk/>

<sup>42</sup> <http://thirduniversity.wordpress.com/>

<sup>43</sup> <http://reallyopenuniversity.wordpress.com/>

<sup>44</sup> "Global Matters: The Transnational Turn in Literary Studies", Paul Jay, Cornell University Press, 2010, pp.3-4

<sup>45</sup> "English degrees for £27k – who's buying?", John Sutherland, The Guardian, 30 November 2010

<sup>46</sup> "Vocational to Higher Education: An International Perspective", Gavin Moodie, Open University Press, 2008, p.6

<sup>47</sup> "Higher Education Supply and Demand to 2020", HEPI, 2011 - <http://bit.ly/hGYrtn>

Preparation is crucial to allow that income, however. Governments are working to make more information available and accessible to prospective students. That work must continue, ongoing, to find ways in which that information can be:

1. Translated into something meaningful so as to allow reasoned choice, rather than increase confusion;
2. Distributed effectively to all groups with the express aim that they will actively engage with the detail.

Reay et al highlight the importance of this:

**‘We found little evidence of the consumer rationalism that predominates in official texts. There were some students who could be described as active researchers... but many relied on serendipity and intuition.’<sup>48</sup>**

Choice will go way beyond the matter of cost. This might involve tuition fees and the levels at which they are charged, but debate of good and poor value should not start or end with fees. Value will continue to manifest itself in many other ways: institutions will look increasingly different; outcomes will be more specific to the individual; vocation and employability will form just one aspect of HE.

Therefore, as HE funding goes through change in many places, so do perceptions of HE. For some, education should be a right at every level of learning. For some, education is for training a future workforce. For some, education is about improving society for the better. For some, education makes sure we all have a future.

If we can successfully embrace contradiction and use it to our advantage, I am confident that the future will be worlds apart, and yet remain both startlingly and reassuringly familiar.

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<sup>48</sup> “Degrees of Choice: Social Class, Race & Gender in Higher Education”, Diane Reay, Miriam E. David & Stephen Ball, Trentham Books, 2005, p.159

## 1.3 A worried parent writes from the UK

Stefan Stern

‘Plumbing college.’ This was my wife’s not entirely satirical answer to the question about where she hoped our children might end up studying. Plumbing college clearly has a lot to recommend it. You learn useful and relevant skills there. You become eminently employable. And you probably don’t find yourself having £30,000 of tuition fees to pay back when you finally complete the course.

But all this talk of fees and employability takes us down an avenue I would prefer the debate on higher education could avoid, at least in the first instance. This anxious parent was an undergraduate in the 1980s, a time when certain truths about student life remained self-evident, in spite of the serious economic transformation the UK was going through at the time.

A humanities student in the 1980s, pursuing a non-vocational course, could still feel confident that the degree he or she was studying was worthwhile in itself. University was supposed to be about a broadening and deepening of the individual. The clue was in the name: one hoped to leave having developed a richer understanding of the universe and one’s own place in it.

Over the last three decades this notion of higher education as an unquestioned good has begun to slip. It wasn’t just Margaret Thatcher but also a Labour Secretary of State for education—a *Labour* Secretary of State—who ruminated out loud on the usefulness of studying medieval history.<sup>49</sup> During this period the fashionable concept of employability became accepted as a key goal—perhaps the key goal—of education. I don’t think I am imagining having once heard the then Prime Minister, Tony Blair (a graduate of St. John’s College, Oxford), declare, apparently without irony, that:

‘The more you learn the more you earn.’

But should I now suppress what some might consider to be self-indulgent instincts? Must higher education be seen primarily as a sensible and pragmatic down-payment towards the creation of future earning potential? What advice should the conscientious parent give to his or her children as far as higher education is concerned?

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<sup>49</sup> The Guardian (2003) ‘Clarke dismisses medieval historians’  
[www.guardian.co.uk/uk/2003/may/09/highereducation.politics](http://www.guardian.co.uk/uk/2003/may/09/highereducation.politics)

The question of cash cannot be avoided. The great and necessary expansion of university places had to be paid for somehow. Tuition fees—a kind of delayed graduate tax—are here to stay, in one form or another. And once the political row and outrage (real and synthetic) have died down, all of us will have to think calmly about how we will help our children cope with the burden of debt they will inevitably incur.

Not unlike the original student loans which came in to replace grants, borrowing to pay back the cost of tuition fees over time will probably turn out to be one of the best and most affordable loans any young person ever takes out. The parents of future students will have to assume the role of financial educators, explaining and reassuring that these debts will prove manageable and will be paid off, in time. It may well also be the case, however, that with the growing downward mobility of much of the ‘squeezed middle’ in this country, parental (financial) help of the kind I and many others enjoyed as recently as 20-odd years ago will become a much rarer phenomenon.

And that realisation drags me back to a more defiant and uncompromising thought about higher education. Forget future earning potential. Three or more years at university, however they are financed, are an immense privilege. This is not a time to waste, frankly, pursuing a subject or discipline you have no interest in purely because you have an idea that great riches may lie at the other end of that degree. Future doctors must study medicine and future geologists must study geology—that is clear. But what I shall tell my children in due course is that university is there for them to deepen their love of a subject and to develop as individuals. Job prospects, employability skills and building networks of ‘contacts’, must be a secondary or even tertiary concern. Study something that fascinates you, and worry about the future later on.

Irresponsible advice? I hope not. Education for education’s sake? Why not? Medieval history must be endlessly stimulating, and not nearly as useless as the former Secretary of State suggested. Classicists would be able to tell us that Aristotle’s concept of ‘flourishing’ as an individual—*eudaimonia*—does not imply great material success at all. Living and doing well is what matters. One probably needs to be well educated to achieve this, but not necessarily paid an investment banker’s salary (or bonus).

Perhaps I will be condemning my children to decades of penury and miserable rented accommodation—or guaranteeing that they never leave home. But if some school teachers are too nervous to speak up for education as a good thing in itself, and academics are too scared or too busy, then someone will have to. It may as well be the parents who take on this lonely but important task. To graduate in the university of life—I mean as a human being, and not merely as an employee or consumer—it may be necessary to do some serious study at a real university first.

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## Section two – How should higher education be delivered?

### 2.1 The international student and the challenge for universities

Glyn Davis

‘The time that my journey takes is long and the way of it long.’ – Rabindranath Tagore

The great Bengali poet Rabindranath Tagore writes powerfully on the excitement and pain of ‘the journey home’. Tagore’s journey home takes in many distant shores and worlds towards an understanding of his best potential self. For more than three million international students, the challenges of the journey are experienced every day. Living in an unfamiliar culture. Missing the sights and sounds of home. And working hard to develop skills and knowledge and develop their own potential—potential which may ultimately transform lives and communities.

The rise of international students has been one of the great stories of modern times. Since the days of Erasmus in the sixteenth century, scholars have been famous travellers. As bordered nation-states emerged in the sixteenth century, Erasmus and his fellow European scholars adopted a contrary aspiration: they sought to be citizens of the world—*ego mundi civis esse cupio*, as Erasmus wrote to a friend in 1522. The humanist scholars of that period founded the first learned academies—freely exchanging knowledge across borders, and helping give rise to the modern university.

Today, that ambition is shared by students all around us. A handful of humanists in the time of Erasmus has grown to more than 150 million education students and staff worldwide. Small flocks of adventurous scholars making intellectual pilgrimages around Europe have become a population of millions of international students today. Their numbers seem destined to grow.

For students, increasing global mobility in higher education represents great opportunities—and significant challenges. Opportunities lie in professional training across many fields, usually beyond a level available in their homeland. Commerce and business studies, engineering, law, education, health and medicine are popular choices. Yet more significant than any one discipline is the human capacity this training enables. Nobel Prize-winning economist Amartya Sen speaks of human freedom in terms of the capability of individuals to do or be the things that they desire. Education is a great enabler of this ideal, of freedom as a form of self-determination. International education, in particular, presents the opportunity for developing capacities to a spectacular degree and on a global scale.

Yet many international students find the going tough. None, perhaps, expects life and study in a foreign country to be easy. But some struggle daily with language difficulties, feelings of isolation and 'culture shock'. In a recent book, *Ideas for Intercultural Education*<sup>50</sup> the voices of international students are heard. One Chinese international student in Australia, 'Li-Lin', told researchers that she had trouble making friends and that 'Everything is so shocking.' Her frustration at the inflexibility of her teachers' styles has been echoed by other students, including in a UK study which found that many teachers made no adjustments to their curriculum and methods, despite a large variety of cultures being represented in their classroom.

On the other hand, intensive work is happening within the sector to boost interaction between domestic and international students. *Finding Common Ground*, a research project supported by the Australian Learning and Teaching Council through 2008–10, found a range of teaching and learning practices that realise the benefits of diversity within classrooms. These benefits are substantial, for all concerned.<sup>51</sup>

Increasingly, this is or should be a direct concern for a large number of universities. Perhaps universities in every country are affected, but none more so than Australia. Proportionally, Australia has welcomed international students into its system in larger numbers than any nation. 21 per cent of all tertiary students enrolled in Australia are foreign students. On this count, Australia is followed by the United Kingdom, Switzerland and New Zealand with 14–16 per cent. All other nations have smaller percentages again.

In many respects, for Australians, this should be a matter for pride. On the surface, today's Australia seems a nation strongly engaged with the dynamic world of student mobility. But in at least one important respect, we could be doing much better. Recent figures suggest a disturbing feature of our international student engagement. The traffic is largely one way. For every Australian higher education student leaving for study overseas, 24 foreign students arrive here. Australians may congratulate themselves on the cosmopolitan sophistication of their higher education outlook, but are they fully seizing the opportunity offered by higher education's greatest ever global moment?

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<sup>50</sup> Simon Marginson and Erlenawati Sawir, Palgrave Macmillan 2012

<sup>51</sup> [http://www.cshe.unimelb.edu.au/research/experience/enhancing\\_interact.html](http://www.cshe.unimelb.edu.au/research/experience/enhancing_interact.html)

Every nation is challenged by the stunning rise in global student mobility. There has been a huge increase in ‘internationally mobile’ tertiary students in recent decades. UNESCO has predicted the number of international students might almost double to seven million by 2020. We should not lose sight of what a transformational opportunity these numbers represent—not only for individual students, but for every participating university as well.

University leaders in Australia and other countries are increasingly conscious of the need for action. Universities rightly can and do advocate on behalf of international students, who are guests in their institutions and their country. But perhaps more important is doing everything possible to make university campuses places where every student, from home or abroad, can feel at home. A concrete example of such efforts is the ‘Global Lounge’ at the University of British Columbia—a university with a substantial international student population. UBC is seeking to break down barriers in the classroom and provide informal spaces for students to build a community through various initiatives. Its Global Lounge is a gathering space, home to over 1,000 staff and domestic and international students who mingle and work in globally focussed clubs, to explore global issues and raise intercultural awareness. Many other universities are finding new ways of meeting this emerging change. As the global mobility of students’ increases, these initiatives are steps towards Erasmus’ aspirations for scholars and their communities.

The poet Tagore described the end of the journey home with a cry “My eyes strayed far and wide before I shut them and said ‘Here art thou!’” This new understanding and transformation is the core purpose of education: and never more so than in a global age.

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## 2.2 Building a fairer system in Australia

Denise Bradley

Recent changes to higher education in Australia are the most significant in twenty years and are shaped by a vision for higher education as an agent of social transformation. The initiatives to increase participation from underrepresented groups start from a basic assumption that:

**‘Social inclusion must be a core responsibility for all institutions in receipt of public funding, irrespective of history and circumstances.’<sup>52</sup>**

But will they advance this aim?

### Implementing change

Universities are now responsible for establishing coherent programmes to change patterns of social disadvantage, no matter how entrenched these are. They can no longer wait for other education sectors to address the socially skewed outcomes of schooling which result in some social groups without tertiary qualifications or having qualifications clustered in the lower levels of Vocational Education and Training. Universities must play their part in a national effort to improve school completions and increase the numbers of people from disadvantaged backgrounds gaining higher level qualifications.<sup>53</sup>

Targets of 40 per cent of 25–34 year olds completing a degree and participation of the bottom SES quartile of the population moving from 15 to 20 per cent have been set. The commitment by government is very public and specific and moves this aspect of higher education policy to a new level of seriousness. In particular, by

- requiring action from all institutions in receipt of public funds to address low SES disadvantage;
- increasing the funds available for equity initiatives;

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<sup>52</sup> Review of Australian Higher Education: Final Report (December 2008), [www.deewr.gov.au/he\\_review\\_finalreport](http://www.deewr.gov.au/he_review_finalreport), p.33.

<sup>53</sup> Australia maintains one of the most accessible higher education sectors internationally. Clancy and Goastellec demonstrate that, in Australia, the chance of someone from a low SES background participating in higher education is greater than in other comparable countries. However, there has been no change in this likelihood of participation for two decades. See: Clancy, Patrick & Goastellec, Gaële (2007) ‘Exploring access and equity in higher education: policy and performance in a comparative perspective’, *Higher Education Quarterly*, v.61, no 2, April.

- supporting a more interventionist approach through the use of targets and performance monitoring; and
- adopting an approach to outreach which involves the schooling and VET sectors,

these reforms require higher education to change significantly. They also address many of the criticisms of the effectiveness of past equity policies and programmes in Australia.<sup>54</sup>

### Will we see change in patterns of participation?

Can we learn anything from past success? There has been substantial improvement in the last twenty years in the participation and success of three groups: women in non-traditional fields of study, people with disabilities and people from non-English speaking backgrounds. But low SES students and those from rural and remote areas have seen little change in participation patterns and while Indigenous access has improved, completions remain poor.

The three groups—women, people with a disability and people from non-English speaking backgrounds—where participation has markedly improved in the last two decades, share some characteristics: (1) a reasonable spread of members across all income groups, (2) group members are not clustered in particular localities and (3) in most cases, they meet conventional entry requirements. This combination of circumstances, pressures and programmes appears to be responsible for an increase in their participation and success within individual higher education institutions (not that they have always been accepted with grace or embraced with enthusiasm) and this has changed national patterns.

The combination of

- government policy commitment
- targets and performance monitoring of institutions
- modest funds for programmes
- institutional adaption

appears to have been successful for these groups. Nevertheless, James and McInnis question whether higher education equity policy and programmes have been critical to these changes.<sup>55</sup>

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<sup>54</sup> The best and most comprehensive analysis of equity policy is James, R. & McInnis, C. (2005) 'Equity policy in Australian higher education: A case of policy stasis', in Gornitzka, A., Kogan, M. & Amaral, A. & (eds.) *Reform and Change in Higher Education: Analysing policy implementation*, Springer: Dordrecht, The Netherlands.

<sup>55</sup> *Ibid.*, p.8–9.

For the other three groups there is strong evidence that locality is a major factor and work on the distribution of disadvantage in Australia by Vinson suggests the situation may be getting worse as we see consolidation of poverty in particular localities. Such consolidation has serious implications for those who live in these localities. Vinson argues that

'... when social disadvantage becomes entrenched within a limited number of localities, the restorative potential of standard services in spheres like education and health can diminish. A disabling social climate can develop that is more than the sum of individual and household disadvantages and the prospect is increased of disadvantage being passed from one generation to the next.'<sup>56</sup>

Young people who live in such areas—where there are poor transport and health services, little access to secure or well remunerated employment and schools struggling to deal with the cumulative disadvantages of their students—do not complete school or do not complete with great success. Consequently, they fail to enter higher education and are denied access to the benefits it brings. This increasing concentration of poverty in particular localities has a major impact upon the possibility of improving participation in higher education and is reflected in the SES profile of Australian universities as it is in other mass higher education systems

'... within the most expanded higher education systems there is evidence of a polarisation of the socioeconomic profile of the student body across different universities ... [and] growth in overall participation in higher education almost invariably leads to institutional stratification'.<sup>57</sup>

Low SES student participation in Australia's universities ranged from 4 per cent to over 50 per cent in 2007.<sup>58</sup> These poorer students are concentrated in outer metropolitan and regional campuses and in the more recently established universities.

### The issue of institutional stratification

A programme solution to address the underrepresentation of groups for whom locality is, broadly, an issue can be addressed by two policy options. The first is to make action on participation of underrepresented groups a core responsibility of all higher education institutions in receipt of public funding and ensure that even the most

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<sup>56</sup> Vinson, Tony, with assistance of Rawsthorne, Margot and Cooper, Brian (2007) *Dropping off the edge: the distribution of disadvantage in Australia*. Richmond, Victoria, Jesuit Social Services/ Catholic Social Services, p.ix.

<sup>57</sup> Centre for the Study of Higher Education, University of Melbourne (2008) *Participation and equity, a review of the participation in higher education of people from low socio-economic backgrounds and indigenous people*. Prepared for Universities Australia, p.72.

<sup>58</sup> *Review of Australian Higher Education: Final Report* (December 2008), [www.deewr.gov.au/he\\_review\\_finalreport](http://www.deewr.gov.au/he_review_finalreport), p.34.

socially elite institutions are obliged by policy to address social disadvantage. The second is to designate some institutions as ones which will concentrate effort on the education of those groups currently underrepresented while, inevitably, allowing the rest to concentrate on provision of education for an elite that, while identified as an intellectual elite, would, given prevailing patterns here and internationally, be one defined by SES background. Government has chosen the first and, while matters of the adequacy of funding remain contentious, Australia's universities, whatever their SES profile, have embraced this direction.

### Conclusion

While the reforms announced to equity programmes address many of the weaknesses of past policies and may well, given experience elsewhere,<sup>59</sup> increase higher education participation from low SES populations, it seems unlikely that the social stratification already apparent in student bodies across existing universities will show immediate or drastic change or that the implicit status of particular universities will change rapidly. The weight of tradition, the financial safety net of reserves from centuries of endowments and the status associated with high research performance will continue to ensure that those institutions which are currently seen as prestigious will continue to attract high SES students and will have to make very serious efforts to enroll more students from low SES backgrounds.

However, the public policy commitment to action by all institutions on this issue has already seen serious engagement by such institutions on diversifying their SES base and the chance of a student from a disadvantaged locality enrolling in such institutions does seem to have improved.

In summary, then, the reforms in Australia are likely to improve the patterns of participation by the most socially and economically disadvantaged in higher education through the mix of incentives and performance measures now in place. However, the impact of other imperatives, driven by international trends in research policy and the power of tradition suggest that change in the patterns of institutional stratification will be slow.

**Emeritus Professor Denise Bradley AC** was Chair of the Australian Government's Higher Education Review Expert Panel in 2008. She is a former Vice-Chancellor and President of the University of South Australia (UniSA), the largest university in South Australia, and has been extensively involved in national education policy groups for more than two decades.

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<sup>59</sup> Ibid., p.35.

## 2.3 Diversity in higher education and social mobility

Matt Grist and Julia Margo

Let us introduce you to Asa (not her real name). We met Asa at a Community College in London, England. Asa was a 'learning advocate', someone who represents the college to external visitors like us, and who observes lessons, carries out research and advocates on behalf of students to the college's senior staff. Asa was a bright, focussed young woman. And she wanted to go to university.

What she wanted to study was radiography. She told us how her mother had died of cancer when she was nine years old, and how her best friend had died of leukaemia two years ago. She wanted to study radiography to help people like her mother and her friend. And she wanted to study near to her home so that she could continue to live with her family. She also wanted to get her degree as quickly as possible so she could enter the workplace.

As debates take place around tuition fees and the role of universities in promoting social mobility, we might ask ourselves whether higher education serves people like Asa well? The answer seems to be an overwhelming no. Not only have university places—as is well documented now—been captured on the whole by the middle classes,<sup>60</sup> but the very idea of what it means to participate in higher education has become a middle class shibboleth. The idea goes something like this: leave home and explore yourself through study, extra-curricular activities and revelry; meet a circle of friends with whom you'll make the transition into stable, well-rewarded and connected professional careers; get drunk with those university friends and possibly marry one of them.

This vision is not one that appealed to Asa, and it does not appeal to many other young people, especially those forced to grow up a little faster than their more affluent peers. Asa does not need to make the transition to adulthood through an elongated finishing school with occasional bouts of studying in between, nor does she need to explore herself. She knows who she is and she knows what she wants to do. She simply needs a higher education system and a labour market that enables her to do it.

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<sup>60</sup>In 1960 the percentage of first year undergraduates from middle-class backgrounds was 74%, it was exactly the same in 1999 even though the size of the yearly cohort had increased massively. See Wolf, Alison: *Does Education Matter*, Penguin, 2002.

There are three policy ideas that would make the higher education system better serve young people like Asa in the future: the liberalisation of degree-awarding institutions; more variety in the length of university degrees; and employment regulations that outlaw unnecessary discrimination on the basis of levels of educational attainment. Now, briefly, to each of these in turn.

At the moment in the UK, it takes an act of Parliament or a Royal Charter to visit degree-awarding powers on a new institution. This level of oversight might at first seem unnecessarily draconian, but there is reason to it. Universities are guardians of learning and culture, and their 'brand' should not be damaged by too many unwarranted entrants into the market. However, some more flexibility could be introduced into the system such that Further Education (FE) colleges could be allowed to carry out teaching and assessment towards degrees under patronage from a local university. This already happens to some extent with foundation degrees through franchising and accreditation arrangements, and there is no reason in principle why it should not be extended to full degrees, as long as standards are maintained through all the usual channels, most notably the use of external examiners. The marker of higher education is not physical location in a university, but studying something to a certain level of depth and breadth, and under one's own steam, so that a degree signals a particular standard of education.

As for more variety in the length of degrees, in the USA and Canada it is common for students to finish degrees a year or so quicker than is standard by taking summer classes (often taught by PhD students or visiting academics). In the UK, the University of Buckingham (a private university), offers degrees that can be finished in two years. These are not just 'vocational' degrees like the one Asa wants to take, but arts and humanities degrees too. The brevity of study is achieved through studying all year round, with shorter holidays. No less material need be covered since the average university 'year' in the UK is one hundred days, leaving plenty of scope for gains in efficiency.

The main stumbling block to expanding the offer of shorter degrees is the culture of universities—long holidays and sabbaticals for academics to carry out research. But this culture is itself damaging since it homogenises academics into researcher/teacher hybrids. Some are suited to this role but not all. The result is not just the bog-standard length of a degree, but also many researchers who teach badly and many teachers who carry out questionable research. All this produces a massive inefficiency in the system. With liberalised degree-awarding institutions, based on a partnership model, there would be jobs for those academics better suited to teaching (and doing it all year round), as well as for those better at research, who would be freed up to do just that, giving less frequent lectures. This division of labour would have to be based on academic merit and would meet with some resistance from the academic community. But it would only be recognising differences in talent that already exist and it would increase the quality of universities (better teaching, better research), as well as creating efficiency gains.

Finally, to the supply-side issue of legislating against unnecessary demands for possession of qualifications. It seems odd to claim more regulation could free up people's ability to gain wages for their labour. But there is a wealth of evidence now that the UK is over-educating for many jobs (estimates range between a quarter and a third of the workforce being over-educated).<sup>61</sup> All that we suggest here is that it be possible for an applicant to question at tribunal the legitimacy of making demands for qualifications when advertising jobs. If, for example, an applicant challenged a chartered accountancy firm for demanding chartered accountant exams, then this would cut little ice at a tribunal. But if a local council is advertising a clerical post and demands a university degree (which does happen), then applicants should be able to go to tribunal to demand the employer display evidence of why such a qualification is necessary. In this case, the employer would be on much shakier ground. For people like Asa, who might consider a foundation degree plus a real willingness to learn on the job plenty good enough to become a radiographer, an employer might find it difficult to justify *demanding* a full degree. In reality, of course, regulations of this kind would lead to lots of job applications simply being reworded with phrases like 'a degree is desirable' but this shift in tone would be no small victory against pointless over-education.

With these policy reforms in place, Asa would have much more choice of local providers of a full degree; could get her degree in a shorter time, saving considerable costs and satisfying her desire to enter the labour market as soon as possible; and would be less likely to be forced to over-educate herself to pursue her chosen career.

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<sup>61</sup> See Chevalier, A. and Lindley, J. (2009) Over-education and the Skills of UK graduates *Journal of the Royal Statistical Society* 172.2

What we need to ask ourselves is why higher education systems and labour markets don't serve people like Asa as well as they could? The argument that by taking a shorter more local degree Asa is entering the lesser part of a 'two-tier' system doesn't hold water. If Asa wanted to take a longer degree or leave home she could; the point is she doesn't. Are we to ascribe, patronisingly, false consciousness to her? Or admit that we have suffused our idea of a university education with notions of the rites of passage of the middle classes? With more diversity in the university sector and a labour market less insistent on over-education, more people would have more options for social mobility than they currently have. That's liberal politics spreading opportunity, not regressive elitism.

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**Demos** is a think-tank focussed on power and politics. Our unique approach challenges the traditional, 'ivory tower' model of policymaking by giving a voice to people and communities. We work together with the groups and individuals who are the focus of our research, including them in citizens' juries, deliberative workshops, focus groups and ethnographic research.

## 2.4 Institutional values and the student experience

Annie Gosling and Owen Gower

Who cares what the institutional structures of a university are, provided that the best student educational opportunities are preserved? Well, it may be that bureaucratic and financial structures are not isolable from the intellectual development of students. Will students have a different (worse?) educational experience if their university is privately run, or if they get a degree in two years rather than three, or if the delivery of their degree is out-sourced to further education (FE) colleges? In what follows we discuss these three institutional developments and consider their potential impact on the educational experience of students.

### Alternative private providers

Government will widen opportunities for private institutions to take over some of the educational role of universities. Students at private universities will have access to the same Government sponsored loans and grants. In addition Government will give more degree-awarding powers to private education institutions. There is nothing to stop these privately run institutions from having a research agenda. But if research council money is tied to public universities, then private research opportunities will be limited. If so, it is likely that private universities will focus on teaching, and not—in the main—on research. What implications might this have for the student experience?

If the pressure to research is lessened, it may follow that the quality of teaching will rise. The reputation for delivering a satisfactory learning environment will no doubt become a key market driver. So, private universities may be more attentive to teaching standards than universities have been—so much the better for the student experience.

Except, of course, that the learner may not be the best judge of whether their learning environment is satisfactory. Poor communication skills and late, indecipherable marking are clear indications of an unsatisfactory educational experience, but other indicators are vexed. Some subjects are painful to learn, but it would be a pity to exclude them from the syllabus because pain is usually unsatisfactory. Marks and results ought also to be somewhat insulated from the satisfaction of the learner.

Will an educational market driven by student-consumers find itself beholden to satisfaction ratings? Perhaps not, if—as some optimists suggest—students are discriminating enough consumers to recognise that grade inflation and syllabus distortions will bring the very status of being a graduate into disrepute.

### Outsourcing teaching

Another suggestion made has been to separate degree-awarding powers from teaching. Local institutions such as further education colleges would teach students locally but their degree would be awarded by a university. Potentially students could study at a local institution, be taught by local staff but achieve a degree from a prestigious university. This would enable people the opportunity to access higher education who may not be free to move due to community ties, caring responsibilities or financial constraints. Clearly though, the corporate life of the university would be absent under this arrangement. Does that affect the educational experience? Satellite learning may give the impression that active epistemic practices need not be internalised. The practices being taught may remain remote, not done by the tutors and therefore not to be attempted by the student.

### Shorter degrees

Rather than degree study taking the traditional three or four years, courses could be completed in two by increasing the length of terms. This is partly possible because those teaching them will not be required to conduct and publish research. Efficiency savings ensue: university campuses would no longer be unused for half the year. It also means savings for the students who will only need to find the money to pay for two years' worth of accommodation, living expenses and fees. They will also be able to enter the job market sooner and more conditioned to the intensity of a workplace routine.

Paradoxically, though graduates will be used to professional routines they will have had less opportunity to experience work. The majority of students devote at least part of their holidays to gaining work experience, knowledge of the 'real world' they are continually told is vital if they want to get a job after graduation. Will this opportunity exist within a packed two year programme? Does it offer different and valuable 'tasters' of work compared to a full career job?

Beside this is another more philosophical concern about compressed learning. Being so intensely immersed in the routine of the degree subject will entail the crowding out of wider issues. It may be for example that the academic pace discourages students from taking up optional courses out of intellectual curiosity. Active membership of a society or campaigning organisation might require more time than these students can afford to give.

### Institutional values and the individual

Three of the institutional values that have traditionally structured universities and are potentially threatened by these developments are: *disinterestedness*—that criticism of ideas, actions and judgements should be conducted selflessly; *communalism*—the idea that knowledge is a product of social collaboration and belongs to the community; and *organised scepticism*—meaning that all ideas, without exception, are subject to systematic analysis and testing. Do these values affect the student educational experience and do the proposed developments in higher education affect these institutional values?

As higher education becomes increasingly consumer driven, disinterested intellectual curiosity is made increasingly vulnerable to extrinsic biases such as student satisfaction or ‘employability’. So what? These outcomes are clearly vital but they must not diminish the opportunity for intellectual curiosity. If the marketplace is allowed to define the value of education predominantly by employability or even by student satisfaction, intellectual curiosity could be crowded out. This vulnerability is likely to be more pronounced among private providers who are more susceptible to the vicissitudes of consumer demand.

If satellite education providers lack the ‘corporate life’ of traditional universities then they lack the means by which to show that knowledge is a product of social collaboration with community ownership. The intellectual autonomy of the learner necessarily suffers if they are only engaged passively and without this sense of ownership. The result is a student without a sense of knowledge as being dynamic and collaborative. Instead knowledge becomes reified and if that happens, the student will be correspondingly disempowered.

Compressing three years of education into two might mean that the fundamental assumptions and implications of student’s studies would be unquestioned in the race to the final exam. The danger then becomes that instead of fostering unshackled thinking, universities will turn out overspecialised, gullible graduates unable to respond innovatively to the unforeseen challenges of work and life.

These are, of course, potential threats only. The underlying point is that institutional values—what universities stand for—do affect the student’s educational experience. So institutional changes must be made in full cognisance of the implications they will have for the individual student experience.

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[Cumberland Lodge](#) is an educational charity in Windsor Great Park. Since 1947 it has been a forum in which university students from a range of disciplines have come to stay for short periods of time. The Lodge provides a space where students can examine the fundamental assumptions and implications of their degree subject as well as how it relates to wider ethical issues.

## Section three – How should we make the most of technology and data?

### 3.1 From connectivity to next-generation learning

Chun-ming Leung

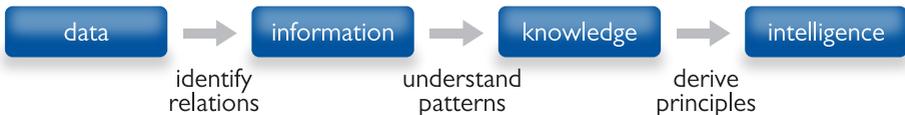
We can apply elements of network theory to identify increasing connectivity as a driving force behind recent developments in higher education. This will also help us to understand the different characteristics of next-generation learning.

#### Connectivity and Learning

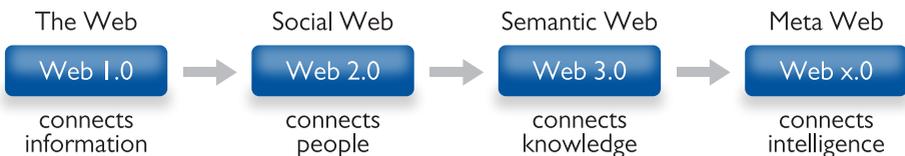
We define the connectivity of a network as a measure of the extent to which its components are linked to one another, and of the ease with which the individual components can interact with each other. Since learning generally involves thinking, communication, and human interactions, we may identify three types of network that are related to learning: a neural network, a communication network and a social network. The role of each is briefly described in the diagram below:

increasing connectivity →

#### A. neural network – learning progress



#### B. communication network – Web development



#### C. social network – cultural change



### A. Learning progress: from data to intelligence

*Data* provides descriptions and facts out of context while *information* is data put into a meaningful context. On the other hand, *knowledge* is the reasoning, experience and know-how that enables us to interpret data or information, while *intelligence* is the ability to draw rational and wise conclusions (and make decisions) on the basis of that knowledge. Information is a result of identifying relationships among data. Knowledge comes from understanding the patterns exhibited by information, while intelligence results when one derives the principles behind knowledge. Learning may be viewed as a process of developing *intelligence* based on *knowledge* acquired by applying reasoning to interpret *information* that is derived from putting *data* into a meaningful context.

Research in neural science suggests that the brain constantly reorganises itself differently based on the stimuli it receives (neuroplasticity). Different kinds of experiences lead to different brain structures. The brain maintains its plasticity for life and the supply of brain cells is replenished constantly. The capacity for learning and the learning proficiency of a person are related to how well-connected the neurons are in his/her brain, i.e. learning progress is governed by the level of connectivity in the *neural network* within a human brain.

### B. Web development: from Web 1.0 to Web x.0

The evolution of the Web can also be described as a result of introducing different kinds of connectivity into a *communication network*. The initial Web (*Web 1.0*) was just for dissemination of information, i.e. a platform that connects information. When tools were introduced on the Web to facilitate communication, interaction, and collaboration among people, it became a Social Web (*Web 2.0*), a platform that connects people. The next phase is to elevate the dissemination of information to sharing of knowledge so we will increasingly have a Semantic Web (*Web 3.0*), a platform that connects knowledge. Eventually with the convergence of people and knowledge connectivity, a platform that connects intelligence, the Meta Web (*Web x.0*), will emerge. Hence increasing connectivity in the communication network will transform the Web from a platform for disseminating information to one for sharing intelligence.

### C. Cultural change: from communication to innovation

In a free and open community or social group, increasing *communication* leads to more information sharing which drives the *integration* of communication channels, media and devices, thereby facilitating more interactions. Increasing interaction will create opportunities for people to work together to solve common problems, i.e. *collaboration*. Collaborative problem-solving often requires the creation and sharing of new ideas, i.e. *innovation*.

Facilitating communication in a **social network** will not only bring about better integration and more frequent collaborations, but will also help to develop a culture of innovation. The evolution of the Web from Web 1.0 to Web 2.0 is a good example, as it gradually becomes a cauldron of new innovations. An example of the consequences of integration is the convergence of the three sectors, Business, Education, and Technology, or the 'BET' triad: corporatisation of education when business and education converge; creation of e-commerce when business and technology converge; emergence of e-learning when education and technology converge.

The level of connectivity in a social network is often described by the **degree of separation**, i.e. the average number of social links required to connect two randomly chosen people. It is estimated that the present world population of 7 billion has 6 degrees of separation. A recent study suggests, based on data from 721 million Facebook users, that there are on average 3.74 degrees of separation between any two Facebook users. Social connectivity (or ever-smaller degrees of separation) is a driver for cultural change and an effective catalyst for moving toward a collaborative and innovative community.

### Next Generation Learning

The shift toward Web-centric teaching and learning has led to new educational structures that require new institutional processes, new support services, as well as new skills and pedagogy. The fundamental values of the Web—freedom, openness, transparency, participation, collaboration, meritocracy, and flexibility—have challenged many tradition-bound principles and practices in higher education. Examples of emerging trends are: democratisation of information and knowledge; development of open educational resources; globalisation and internationalisation of education; blurring of boundaries in teaching/learning/research, real/virtual learning environments, formal/informal modes of learning, communication, and publication. With social and participatory media enabling open and collaborative practices in higher education, democratisation of learning will emerge that will embody the fundamental values of the Web. A key driving force behind these phenomena is the increasing connectivity in communication and social networks.

Driven by the democratisation, internationalisation and globalisation of higher education, next-generation learning must focus on preparing students to acquire the basic skills of a responsible global citizen in an open and democratic community, i.e. to be a critical thinker, a problem solver, an innovator, an *effective communicator*, an *effective collaborator*, a self-directed learner, both information and media literate, *globally aware*, *civically engaged*, economically and financially literate. Note that four (shown in italics) out of the ten attributes are closely related to or arisen from social and communication connectivity.

## Connectivity in Hong Kong

Hong Kong is a densely populated cosmopolitan city with one of the best communication infrastructures in the world. Recent statistics indicate that there are over 13,000 public Wi-Fi access points and 83 per cent of households have broadband connectivity. Mobile subscriber penetration reaches 193 per cent (probably the highest in the world) and there are 3.65 million Facebook users (about half of the Hong Kong population; one of the highest proportions in the world). An average person spends 22 hours online per week; 63 per cent of young people do social networking while 87 per cent of young people own a mobile phone.

The continuing challenge for educators is twofold: (a) integrate technology and pedagogy for teaching and learning in a networked multimedia environment with keen local and global competitions for diversified learning and learners; and (b) create learning environments that promote active and collaborative learning, critical thinking and knowledge creation, to help students to develop the ten basic skills needed for survival in the 21st century. Despite the favourable infrastructure in communication in Hong Kong, it remains to be seen if the higher education system of the city can meet these challenges.

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## 3.2 The students of tomorrow

Rikiichi Koizumi

The growth of ICT such as the Internet has been accelerating the globalisation of societies in recent years. In cyberspace, there are no national, temporal or geographical borders. 'Digital natives', who were born at a time when the Internet was commonplace, live in two different societies: the 'real society' and the 'virtual society'. Living in such an environment is perfectly normal and natural for them. However, for 'digital immigrants' like those of my generation, this two-tiered society is unfamiliar, which often makes it hard for us to understand younger people's thoughts and behaviour.

It has been over twenty years since the Internet became accessible to society at large. In addition, we are going into an era in which digital natives are about to take their first steps into higher education. Most of the educators are digital immigrants, and the education system itself has been forced to go through significant changes. There are large gaps between learners and educators regarding the specific kinds of and amounts of knowledge to learn, preferred learning styles, and values.

Digital natives use ICT intuitively and with their senses. Mobile phones are a good example. They keep fiddling with this small device in their palms without thinking that it is a kind of computer. Quite a number of young people are good at using smart phones and the iPad but not so familiar with PCs. On the other hand, a lot of teachers are just getting used to managing PCs at the personal level and are just starting to think about how ICT can be utilised in education.

Although a variety of proposals in areas such as e-learning, multimedia contents, and LMS, have been made for using ICT in education, none of them have yet been implemented successfully. Considering the fact that the level of learners has changed dramatically and society has shifted more towards information and knowledge, the current educational methods need to be reviewed more thoroughly.

Under Japan's present education system, students in the K-12 grades are expected to learn how to utilise information and ICT. They are expected to know how to use a computer and navigate through the Internet, have basic communication and presentation skills, and know about ethics in cyberspace, etc. However, we cannot say that students are acquiring adequate skills and ethics for the following reasons. Firstly, not all schools have the proper infrastructure such as PCs and high-speed Internet connections. Secondly, many teachers do not have the knowledge and skills required to teach students effectively. And lastly, there is very little time allocated in the classroom for ICT education, as many schools are inclined to focus more on the core subjects for the students' academic advancement. In addition to the above three issues, there has been no collaboration among elementary, junior high and senior high schools to develop a seamless curriculum for ICT in the K-12 grades. Due to these realities, students are forced to start learning information and ICT utilisation skills in college.

In 2010, a government project called 'Future School' was launched in Japan. In this project, every student in a class will have a PC with an Internet connection via a wireless LAN, so that teachers can teach the class using an IWB or a visualiser. This is an initiative to change the present teaching and learning styles by enabling teachers and students to use ICT on a regular basis. The project involves experimental studies at ten elementary schools, eight junior high schools, and two special schools.

In the beginning, while the teachers felt some resistance to introducing ICT, children showed a great interest in the new 'toy', creating an invisible gap between them. However, about one year on, children are now fully used to using PCs every day, and teachers handle the new tool well in their own way for their classes. One of the important things we found in this study is that teachers do not necessarily need to teach students in a non-interactive manner. Teachers can facilitate students to learn by themselves and help and teach each other whenever necessary. ICT has created a completely new learning environment that allows teachers and students to find and share information. Students can make new attempts to express themselves and deliver information by taking advantage of the flexibility of digital data. Teachers and students can work collaboratively, learn by using the new communication tools, and study at their own pace. Such forward-looking projects have already been started in several Asia Pacific countries, such as Singapore and Korea. There are high hopes that these projects will help in the development of a new education system in Japan.

A new subject called 'Joho (Information Study)' was introduced to the Japanese high school curriculum nine years ago. The subject includes not only how to use computers and the Internet, but also aims to teach students how to use information to express their own ideas, how to deliver information, how to solve problems, and for them to be aware of information ethics. At first, the outcome of this new subject went against universities' expectations. However, high schools are producing better results, and more students are entering universities with basic ICT literacy. For several years, the number of students who can utilise ICT has been significantly increasing compared to past years.

The very fact that teachers conduct their classes by using ICT (even though the class is not about ICT) has had a large impact on students' ICT literacy. The reason is clear: students learn from what teachers do in the classroom. If a teacher is using ICT in the classroom, students will imitate the teacher and learn how to use these convenient tools naturally. Then when these students become teachers themselves, it is more likely that they will use ICT in the class, which would create even more ICT literate students. Though it might take time to see the effects of such an approach, we should maintain our effort of introducing ICT into the educational environment in order to initiate such a positive spiral.

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### 3.3 How Open Data, data literacy and Linked Data will revolutionise higher education

Derek McAuley, Hanif Rahemtulla, James Goulding and Catherine Souch

‘Open Data’ refers to the philosophical and methodological approach to democratising data, enabling individuals, communities and organisations to access and create value through the reuse of non-sensitive, publicly available information. This data is typically available online at no cost to citizen groups, non-governmental-organisations (NGOs) and businesses. Some view this as the logical conclusion to Freedom of Information (Fol) Acts in various countries—if citizens can ask for the data, why not simply publish it in the first place?

Today, Open Data is gathering momentum, and forms part of a global movement, linked to other movements such as Open Access and Open Source. The Open Data Initiatives will, it is envisaged, support greater transparency and accountability within government, as well as leading to economic development in commercial sectors and improved public sector service delivery. Integral to this vision is that information hitherto held in hidden databases is opened to the public and, furthermore, released in a form that facilitates easy reuse.

To date, the Open Data movement has created great excitement in developer communities. Social and commercial entrepreneurs are producing a seemingly endless stream of innovative applications that repurpose and enrich publicly available data, across multiple sectors, including health, transport, education and the environment. This new wave of creativity is characterised by Sir Tim Berners-Lee (creator of the World Wide Web) as the combination of information, creative vision and digital technology.

However, smart governments should not rely solely on the organic growth produced by entrepreneurs. Rather, as argued by Eaves:

‘Forward-looking governments – those that want an engaged citizenry, a 21st-century workforce and a creative, knowledge-based economy in their jurisdiction – will reach out to universities, colleges and schools and encourage them to get their students using, visualising, writing about and generally engaging with Open Data.’<sup>62</sup>

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<sup>62</sup> Eaves (2010) Learning from Libraries: The Literacy Challenge of Open Data. Available at: [www.eaves.ca](http://www.eaves.ca) [Accessed June 2010]

This will foster a sense of opportunity among this generation, to interact and participate in this wave of innovation and change, empowering citizens to improve services, reduce costs and boost productivity.

To illustrate with an example from the UK, consider [www.police.uk](http://www.police.uk) which had recently launched at the time of writing, amid a fanfare of publicity. It was immediately pilloried from various quarters for overloaded servers, sluggish service (indicating, at least, an intrigued public) and inaccurate data. If the latter is true, then surely this was a great opportunity to encourage the bottom-up correction of a large public database that police agencies work with on a daily basis. However, few voices pointed to such opportunities, or highlighted how combining this data with other information, for example economic data from ONS, could help geography, sociology and criminology researchers develop valuable insights into the relationship between employment and crime.

Such researchers within higher education establishments are at the vanguard of the Open Data movement, whether as evangelists, users or technologists. Higher education has pioneered the use of web technologies, with institutions making large amounts of information available to students, commercial partners, funding agencies and staff. Yet there is still much that can only be accessed through FoI requests, and most data resides on static web pages, rather than in common data formats that enable data reuse. In the UK, the Joint Information Systems Committee (JISC) has been developing such open data standards, with initiatives such as ePortfolios and course definitions, which if adopted by a sufficiently large proportion of the sector would enable a wave of innovation.

Integral to this growth in innovative data uses and repurposing is training in *data literacy* within higher education. Data literacy—defined here as the ability to identify, retrieve, evaluate and use information to both ask and answer meaningful questions—is an important civic skill that forms the foundation of an innovative knowledge economy and increasingly data-driven society. To demonstrate, one needs only to reflect on a recent statement by Richard Sterling (Former Head of [data.gov.uk](http://data.gov.uk)). In July 2010 he acknowledged that the public are already struggling to make sense of the huge volume of datasets published online, expressing concerns that individuals may be coming to conclusions that ‘weren’t quite valid’ after browsing the 5,850 data sets available on [data.gov.uk](http://data.gov.uk). Sterling attributes this to the format of the information (e.g. structure, configuration and pre-processing) impacting deleteriously on the capacity of end users to make use of the data. As Davis<sup>63</sup> states, much public sector

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<sup>63</sup> Davis, T., (2010) Open Data, Democracy and Public Sector Reform. Available at: <http://www.practicalparticipation.co.uk/> [Accessed July 2010]

information is ‘simply not collected in a usable form at present’<sup>64</sup> and the systematic organisation of information is not a neutral act, involving decisions that impact both on its interpretation and future use.<sup>65</sup> For example, with regard to the recent crime statistics data, the conclusions that can be drawn are very clearly a function of both how data is collected and the degree of aggregation granularity used to preserve privacy of individual households.

Further, addressing these challenges by providing online query and visualisation tools to ‘make it easier to analyse and visualise the data’ as proposed by Sterling, assumes that the public have sufficient knowledge and skills to interpret and use data, and know the sources of uncertainties generated in the conflation of different open datasets.<sup>66</sup> Even something as simple as *where something happens* is a complex problem; for example data recorded based on local government boundaries, which are subject to change, can only be interpreted rationally with access to a historical archive of such boundaries.

Herein lies an important distinction between the often-conflated memes (‘meme’ is a relatively newly coined term, attributed to Richard Dawkins, which describes a unit of social information, ideas or beliefs that is transmitted from one person or group to another, analogous to genes) of *Open Data* and *Linked Data*. While the former represents an unequivocal step forward in increased access to, and public ownership of large data sets, it is the latter that holds the potential to be a powerful, positive and disruptive force in higher education. Meltzoff et al. reported that:

‘Insights from many different fields are converging to create a new science of learning that may transform education practice.’<sup>67</sup>

It is Linked Data, with its facility to cross-correlate traditionally disparate, ring-fenced research resources, such as scientific, geographical, economic and sociological datasets, that will be a central tool in this transformation.

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<sup>64</sup> Allan, R., (2009). The Power of Government Information. In J. Gøtze & C. B. Pedersen, eds. *State of the eUnion: Government 2.0 and Onwards*. Author House. p.01

<sup>65</sup> Snowdon (2010), p.01 Its information to data we need, not DIKW. *Cognitive Edge*. Available at: [www.cognitive-edge.com/blogs/dave/2010/05/its\\_information\\_to\\_data\\_we\\_nee.php](http://www.cognitive-edge.com/blogs/dave/2010/05/its_information_to_data_we_nee.php) [Accessed May 2010].

<sup>66</sup> Sterling (2010, p.01) Open data hard to understand, says data.gov.uk chief. Available at: [www.information-age.com](http://www.information-age.com) [Accessed June 2010].

<sup>67</sup> Meltzoff, A. N., Kuhl, P. K., Movellan, J., and Sejnowski, T. J. (2009). Foundations for a new science of learning. *Science* 325, 284–288.

Linked Data, which uses familiar web-based URL addresses to provide links between Open Data sources, allows higher education to benefit from a 'network effect' as educational data is liberated from its traditional silos. Richer interconnected information environments will produce richer learning environments and a host of new opportunities: simplifying resource discovery and promoting personal exploration of material; supporting integration of distributed discourse while encouraging referencing skills; enhancing construction of both personal and group knowledge while promoting self-actuated learning; facilitating better argumentation and critical thinking skills through advanced reasoning over large volumes of resources; and because Linked Data represents a powerful tool for independent learning, it does all this with the added benefit of further disintermediating educators.

Realisation of this potential has not only begun, but continues apace. Hard sciences have paved the way through projects such as *Bio2RDF* and *Linked Life Data* which provide immense corpora of life-science information. Economists are harnessing Linked Data from public sector bodies such as the *World Bank* and the *Office of National Statistics*, as well as from a growing number of private sector producers (such as *Xignite* who provide access to live financial information). Geographers enjoy the facilities offered by geospatial Linked Data services such as *GeoNames* and *LinkedGeoData*, with its 350 million queryable geographical features, and sociologists now have unprecedented access to the European Union's statistical data, thanks to the *Reise* project, with its 3 billion queryable *Eurostat* derived facts.

The value of these resources to higher education lies not merely in openness and accessibility, but in their interconnectivity. The capability to query as well as browse, to benefit from *data fusion* mechanisms, generates both novel research discoveries and compelling educational experiences. Consider, for instance, the educational worth, research value and policy implications of being able to tie socio-economic data from *Reise*, with epidemiological patterns referenced by *Linked Life Data*, then joining this with the travel patterns indicated within *LinkedGeoData*.

Linked Data shows signs of achieving traction in higher education. However,

'despite undoubted progress, the green shoots of a Linked Data ecology remain delicate',<sup>68</sup>

and, as such, we must take great care to reinforce the progress of this revolution.

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<sup>68</sup> Miller, P., (2010) Commissioned Report: "Linked Data Horizon Scan", Joint Information Systems Committee (JISC), 2010.

Higher education technologies require scalable inter-disciplinary design, and although Linked Data affords us exactly that, policies surrounding it must be grounded in communication and sharing of expertise amongst research disciplines. A number of cross-cutting issues stand out, but of these *Information Literacy* is the most pressing. With the *DBPedia* project now exposing *Wikipedia* as linked data, and services such as *freebase* expanding rapidly, educating students to distinguish between good and bad resources is paramount. For our part we must not only provide methodologies for making this distinction, but actively ensure that such distinctions are achievable in the first place. Bechhofer argues that we must therefore bring our attention to bear on publishing requirements such as data *provenance*, *quality* and *attribution*—and that without addressing these considerations, simply publishing data into the cloud will not sufficiently meet the requirements of reuse.<sup>69</sup>

The Open Data revolution and emerging technologies such as Linked Data offer exciting opportunities for higher education, allowing substantial learning challenges to be met by interlinking resources across disciplines and institutions. However, policy must attempt to reinforce progress already made, encouraging institutions to openly release their data in a linkable form, to deploy applications that use these resources within their educational programmes and, importantly, to enhance emerging data vocabularies rather than engaging in top-down didactic creation of new ones. However, many challenges remain. There are fundamental epistemological differences in how different cultures, communities and disciplines (and even academics within a single discipline), view the same information and hence we need to be aware of and embrace different, even conflicting, vocabularies. New applications of data will revolutionise higher education, but it must take the lead in driving up data literacy amongst staff, students and the wider population.

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<sup>69</sup> Bechhofer et al. (2010) “Why Linked Data is Not Enough for Scientists”. 6th IEEE e-Science conference 2010.

**Dr. Hanif Rahemtulla** is Geospatial Scientist at the University of Nottingham and External Lecturer and Honorary Fellow at University College London. His research is principally focussed in the areas of geographic information policy focusing on Open and Linked Data, the handling and analysis of environmental information, and wider philosophical issues on the societal impacts of Information Communication Technologies.

**Dr. James Goulding** is an early career researcher with a rapidly growing list of international publications across the fields of data theory, location based services, information retrieval and ubiquitous computing. Extremely experienced software engineer with a passion for Open and Linked data and an extensive range of programming skills, specialising in mobile technologies, distributed databases and artificial intelligence techniques.

**Horizon Digital Economy Research** at the University of Nottingham represents an initial £40million investment by Research Councils UK, The University of Nottingham and more than 100 academic and industrial partners in both a Research Hub and Doctoral Training Centre within the RCUK Digital Economy programme. Horizon brings together researchers with backgrounds in computer science, the geospatial sciences, engineering, psychology, sociology, business, social science, law and the arts to build-in an understanding of people and society in technology developments from the outset, and to ensure users benefit from these advances.

**Dr. Catherine Souch** is Head of Research and Higher Education at the Royal Geographical Society (with the Institute of British Geographers). Previously, she was Professor of Geography at Indiana University, USA.

**The Royal Geographical Society** (with Institute of British Geographers) was founded in 1830 and is a world centre for geography: supporting research, education, expeditions and fieldwork, and promoting public engagement and informed enjoyment of the world.

## 3.4 The future of university rankings

Phil Baty

Let us be frank. University rankings are crude. They simply cannot capture—let alone accurately measure—many of the things that matter most in higher education: how a great lecturer can transform the lives of their students for example, or how much free enquiry enhances our society. They can never be objective, because their indicators and methodologies are based on the subjective judgment of the compilers. At their worst, university rankings can impose uniformity on a sector that thrives on diversity. They can pervert university missions and distract policymakers. When they are done badly, they can be manipulated for unfair gain. They can mislead the public.

I admit all of this even though I am myself a ‘ranker’. Indeed, I am the Editor of the world’s most widely-cited (and perhaps most controversial) global university ranking system—The Times Higher Education World University Rankings—and I am proud of what I do. Why? Because I believe that as long as rankers are responsible and transparent, university rankings can be a positive force in higher education.

Rankings can help us understand and find a way through the dramatic changes we are facing. Speaking at the World 100 Reputation Network conference at the University of Hong Kong last year, Peter Upton the Director of British Council, Hong Kong said:

‘We are living through one of those tipping points where in five years, [commentators will say] that this was the period when the landscape changed for ever, when the speed of reputational growth and decline suddenly accelerated. We all accept that higher education is borderless—ideas know no boundaries, do not accord any significance to geography and maps—and that is equally true of reputations and university rankings.’

The facts of rapid internationalisation are clear: 3.3 million students now study outside their home country; UK institutions have 162 satellite campuses on overseas soil; almost half of all UK research papers are now written with a co-author from overseas. We are in a world of global education hubs, of joint degrees, faculty and student mobility schemes, franchised programmes, global research networks and bi-national universities.

We are also entering a world of mass higher education, with new forms of delivery and new providers of higher education, changing the traditional world order. But there is an information gap, with a growing need for clear—and yes, easily accessible—comparative information for all stakeholders. National governments need information when they are investing billions into universities to drive the

knowledge-based sectors of the economy. Industry needs help in looking where to invest R&D money and where to find the top talent. Higher education leaders need to understand the shifting global sands and to improve strategy and performance. Newly emerging institutions, often in developing countries, need help in clearly demonstrating their excellence to the world, against better known and more established brands. Faculty, seeking to foster new research partnerships and consider career options, need help in identifying new opportunities. And perhaps most importantly, in a global market, students and their parents looking to make the right choice of degree course, wherever in the world it might be delivered, need help. This is crucial as the world gets smaller, global demand for higher education gets bigger, and choices become more bewildering.

### [Here to stay](#)

As long as those who compile them are responsible and transparent, rankings have a positive role to play. Make no mistake, rankings are here to stay. Ellen Hazelkorn of the Dublin Institute of Technology, has catalogued the extraordinary growth and influence of rankings in her new book *Rankings and the Battle for World-Class Excellence: How Rankings are re-shaping higher education*. She writes:

‘There is a growing obsession with university rankings around the world. What started as an academic exercise in the early 20th Century in the US became a commercial ‘information’ service for students in the 1980s and the progenitor of a ‘reputation race’ with geo-political implications today ... rankings are transforming and reshaping higher education.’

From influencing immigration policies to prompting multi-billion pound national policies, she has demonstrated clearly how much rankings are shaping behaviour.

So given their increasing importance, surely the best way forward is for rankers to work closely with the university community and engage openly with their critics, to ensure they offer tables that are meaningful, with all the necessary caveats and health warnings. Who better to do that than Times Higher Education (THE) magazine? THE has been serving the higher education world for forty years—it is our anniversary this year. Through our website, and a new digital edition available from the beginning of this year as an iPhone and iPad application, we are reaching an ever-growing global audience which now amounts to more than 100,000 readers a week. We live or die by our reputation among university staff and policymakers as a trusted source of news, analysis and data week in and week out. Our rankings are part of that. They need to stand up to the close scrutiny of our highly intelligent and demanding readers. That is why in late 2009 we brought in one of the world’s most trusted and respected information specialists, Thomson Reuters, to work with us to develop an entirely new methodology, and to collect and supply all our world rankings data for the future.

That is why we published our entirely new rankings system in September 2010 only after ten months of open consultation and frank self-criticism, and after detailed expert advice from more than 50 advisors across 15 countries.

The new *Times Higher Education World University Rankings*, used 13 indicators to cover the university's three core missions: research, knowledge transfer and teaching. With the proliferation of different ranking systems by different ranking agencies, all with different agendas, Times Higher Education's unique selling points are responsibility, transparency and, most importantly given our audience, academic rigour.

For the 2010–11 rankings, we made major improvements to our reputation survey by using the invited views of more than 13,000 targeted, identifiable and experienced academics, questioned on their narrow fields of expertise. We employed a bibliometric indicator that drew on more than 25 million citations from five million journal articles over five years. And we fully normalised the citations data to take account of major variations in citations behaviour between subjects. We made the first serious attempt to capture the teaching and learning environment through five separate indicators—an essential element of any university, but one missed by the other world-ranking systems. They are new rankings, more appropriate for a new era.

### The future

One of the things I am most proud of is that we have handed much of the rankings data over to the user. We have created a rankings application for the iPhone and iPad, which I believe represents a major step forward in the field.

Of course, we choose our indicators and weightings very carefully and only after lengthy consultation. But with the app, the weightings can be changed by the user to suit their individual needs. If you don't agree with our weightings, you can set your own. Such transparency and interactivity with the user is more responsible and I personally believe it is the future of world rankings.

In an article in *Times Higher Education* last year, Ben Wildavsky, author of the *Great Brain Race: How Global Universities are Reshaping the World*, said:

**'We now have a global academic marketplace. It seems to me that education markets, like other kinds of market, need information to function effectively. We're also living in the age of accountability, so rankings aren't going away.'**

I would go a step further. Rankings are certainly not going to go away, and as long as those who rank invest properly in serious research and sound data, as long as they are frank about the limitations of the proxies they employ, as long as they help to educate the users with clear health warnings and keep discussing improvements, rankings are

going to become an essential and valued tool in helping to guide us through times of unprecedented change and uncertainty in global higher education.

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[Times Higher Education](#) is the world's most authoritative source of information about higher education. Designed specifically for professional people working in higher education and research, Times Higher Education was founded in 1971 and has been online since 1995.

## Section four – How should teaching, learning and assessment evolve?

### 4.1 Accessibility and autonomy in higher education

Sunaryo Kartadinata

Co-operation among Asia Pacific countries as manifested through Asia-Pacific Economic Cooperation (APEC) has made Asia Pacific a powerfully open region in the economic, political, social and cultural arenas. In particular, the higher education sector has attracted special attention due to new found openness. The concentration of the world's population (more than 60 per cent) in Asia has resulted in enormous potential for competition in and demand for higher education that should be responded to by diversifying its programmes and services.

It is believed that people mobility from one country to another in the Asia Pacific region will increase dramatically, which in turn will become a necessity. The power of Asian countries to establish a Pan-Asian community in 2015 will further encourage the people mobility that will affect every aspect of life, including higher education and the world of work, both of which should be made accessible to anyone from any country. The availability of infrastructure, such as information technology, and international, institutional and individual relations will further strengthen the growth of a Pan-Asian community. As this trend happens, the need to learn from experiences across countries and cultures will be greater because entering the world of work in a global society is a trans-cultural process. Education is therefore a trans-cultural process and in turn becomes a power.

A question then emerges: what are the challenges and opportunities for higher education? The answer is that higher education institutions have to open up and provide broader access for society to gain a higher education and increase skills or competences in accordance with the demands of the world of work. Higher education will have to prepare diversified demand-oriented programmes, so that universities will act as a key factor in building and improving the economy.

The implications of expanding accessibility are followed by the need to improve the quality of higher education by all countries concerned with responding to a greater demand for people mobility. Lifelong learning will become a basic human need in all regions, including in the Asia Pacific region, in the coming decades. Therefore, higher education has to be prepared to provide programmes that are flexible in catering for people's needs. Education programmes at universities will have to be in accordance with the standards outlined in other countries. People mobility is followed by mobility

stemming from educational programme equality that should enable people to learn anywhere at the same level based on previous learning experiences.

This trend will have implications for the emergence of other needs that must be responded to by higher education. The recognition of prior learning outcomes through the accreditation of prior learning and experience in a qualifications framework that recognises the equality of experience with a particular educational programme will be important. In this context, all universities in different countries will have to refer to a qualification framework set out by their respective countries, a measure of competitiveness and compatibility of higher education programmes with the world of work in a global society. Various countries have attempted formulations of the framework—Indonesia has formulated the Indonesian National Qualification Framework which will become a reference for universities in developing a curriculum.

Another trend that is likely to enter the focus of discussion in the upcoming decade will be about higher education programmes in the form of a so-called community college. Although a community college may not necessarily be global-orientated, this higher education programme will have to respond to the needs and potential of local communities to develop a new force in local economic growth whose products will enter the global market. Therefore, the education that is meant to encourage the growth of creative industries will be based more on local needs and potential with a global competitiveness as can be found in a community college. It is believed that such a higher education practice will foster local strengths as well as global competitiveness.

In entering a tighter competitiveness, the existence of higher education institutions will depend largely on their ability to play a role in the economic growth and competitiveness of human resources that they generate. Research is one of the key factors, considering its ability to build a knowledge-based society. Research funding schemes will accordingly shift from those focusing on the establishment of knowledge to those addressing innovations, from those concentrating on local coverage and individuals to those that are transnational and collaborative in nature, all of which are accompanied by the emergence of massive labour forces with diversified competences. This is in accordance with the idea from Allan Gibb et al., stating that the research paradigm will have to shift from individual curiosity-based excellence which emphasises the pure knowledge research-based paradigm to socially shared knowledge-based excellence which emphasises public values, relevancies, integration and engagement.<sup>70</sup>

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<sup>70</sup> Allan Gibb, Gay Haskins, Ian Robertson, *Leading the entrepreneurial university: Meeting the entrepreneurial need of higher education institutions*, National Council for Graduate Entrepreneurship/University of Oxford, 2009.

The dynamics that have been illustrated above require a change in university governance where autonomy is a prerequisite. Autonomy will allow universities to make prompt decisions responsibly in responding to the challenges and needs of the global community. However, care must be taken. On the one hand, it is the kind of autonomy that accommodates legality, accountability, performance and quality assurance that will become the strength for achieving global competitiveness. On the other hand, such an autonomy will encourage governments to regulate more strictly the universities and require a high-level of expertise to strengthen economic competitiveness.

Universities have a moral responsibility, namely strengthening expertise values that will become the key elements in the nation-building processes for future generations as well as for the manifestation of social welfare. As the President/Rector of Indonesia University of Education whose primary mission is to prepare teachers, I see a specific responsibility that must be borne, that is to lead the nation to the path of moral and spiritual values, to educate citizens to be responsible for the good of society, the world, and the natural environment. Teacher education institutions assume critical missions in realising values of justice, democracy, harmony, and environmental health, making science and technology a bridge to achieve successes, and give benefits to aid the development of the nation's competitiveness.

Another trend which is worth researching is trans-cultural learning facilitated by higher education. There is a strong tendency that universities in Asia have initiated to facilitate foreign students to come to their universities to especially learn the language and culture of where the universities are located. This is a form of awareness and responsibility of universities in maintaining and building the culture of their nation. A good number of students have come from different countries to a university to learn the language and culture of the targeted country and this has become a force for building a world community, especially in the Asia Pacific region. Language has become a strength in the global society. It is a fact that English has been recognised as an international language. However, there is also a strong tendency that major languages in the Asia Pacific region are competing to establish and expand their influences to other countries in the region. Mandarin, Indonesian, Malay, Japanese, and Korean, are among major languages that are expected to play a key role in the Pan-Asian community. A struggle for influence based on language might occur. The trend of trans-cultural learning offered by universities can be regarded as an effort to build a strong influence in the region through the expansion of the use of language. I believe that Indonesian and/or Malay is a language that has such a great opportunity and the strength to do so given the fact that it is spoken by nearly 300 million people in Asia, including those in Indonesia, Malaysia, Thailand and southern parts of the Philippines.

In an era when openness and competition are becoming more important, the key theme that should be highlighted is that all of these efforts must exist in unity to create a benefit for human beings. Tensions may occur in the world of higher education when encountered with the conflict between transnational higher education markets and national objectives. It is the responsibility of higher education to build a growing peaceful mindset that people born of higher education will have high expertise accompanied by a pure conscience that will be a determinant of the success of science and technology to produce benefit for everyone in this world.

**Sunaryo Kartadinata** has been the Rector of the Indonesia University of Education since 2005. In addition to this role, Sunaryo is the Chairman of the Indonesian Guidance and Counselling Association and Chief Executive of the Association of Workforce Education Institute Indonesia.

## 4.2 Know-that, know-how and know-why: the unity of knowledge

Brian Mooney

While there are ever new issues in addressing the future of education, there are some dimensions of education that remain perennial. While debates rage over whether a university (or even pre-tertiary) education ought to be liberal or foster growth in a globalised economy perhaps we should step back in order to re-focus on what all education involves. In a recent book I proposed a tripartite distinction in respect to understanding teaching and learning.<sup>71</sup> I argued that all education involves know-that (knowledge of facts), know-how (skills) and know-why (theoretical understanding).

Much of our preliminary education is concerned with know-that insofar as we require a body of established facts and truths in order to master a domain of knowledge. A student must know that the materials required to paint include brushes, pencils, canvas, colours, etc., before she can proceed to learn how-to paint. Similarly a mechanic needs to know that the cars that she works on operate with certain parts and that certain tools are to be used for this task, others for that task. On the whole I believe our education systems worldwide have done a good job at this level. However, there is one area in the know-that domain which has received less attention—a fundamental requirement of a genuine appreciation of facts and truths involves experience and even imaginative participation. Who else but a lover could say that ‘It is better to have loved and lost than never to have loved at all?’, and only when we have loved do we understand the point the lover makes.

The experiential dimension of teaching learning and understanding naturally finds its place also in know-how. Somewhat surprisingly, in the context of the classroom and formal teaching, our common-sense understanding of how we, as individual learners, come to learn how to do things is often neglected. Take for example learning how to swim. We learn to swim by swimming, just as we learn to ride a bike by riding one, and learn to speak a language by speaking it. Much of the art in teaching these forms of know-how comes in selecting and structuring those experiences that occasion the development of the desired skills. For instance, a swimming teacher encourages students not only to get into the water, but also to practise (and thereby learn) certain elements of swimming before others. We typically learn how to kick before how to do arm strokes. The swimming teacher has the student practise all of the necessary elements in sequence, until the student is able to experience, from the inside, what it

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<sup>71</sup> T. Brian Mooney and Mark Nowacki, *Understanding Teaching and Learning*, St Andrews Studies in Philosophy and Public Affairs, Exeter, Imprint Academic, 2011.

feels like to be engaged in successful practice. Finally, the student leaves the shallow end of the pool and reproduces all of these elements, and the result is swimming. Skilled swimming would then involve consolidated know-how. Excellent swimmers, who are very skilled at swimming, practise more, and more often, than those who are less skilled.

But it is common for teachers, who know at the personal level what is required for learning know-how, to forget these experiential insights when they enter the classroom. Know-how can only be acquired through experience, but instead students are frequently addressed using pedagogical methods better suited to the imparting of facts, that is, *know-that*. It is as if we asked our students to read a swimming textbook, have them pass a multiple-choice exam, and then expect them to be swimmers.

Moreover, the successful appropriation of know-how is often, perhaps always, dependent on forms of *know-that*. Know-how and know-that interpenetrate. I may know how to drive a car, having learnt how to do so in Ireland, but if I do not know that it would be extremely dangerous to drive on the left-hand-side of the road in the USA then my know-how is seriously impaired. Know-how thus seems to require know-that.

The linkages between know-how and know-that imply considerations as to the appropriateness of pedagogical practice. They also imply regulatory, policy and assessment considerations in an institutional context in relation to educators and the efficacy of practice. If we want to educate our students properly in respect to know-that and know-how we need to give careful attention to the level of general awareness of such considerations; what skills/capacities need to exist in educators to teach effectively; what are the assessment, moderation and monitoring concerns institutionally to understand the effectiveness of teaching and learning—how does this play out into individual and institutional development. But these considerations then lead us into questions about know-why.

There is good reason to think that both know-how and know-that are hierarchically related to *know-why*. It is when we talk of know-why that we most easily talk of genuine understanding. Such understanding moves well beyond knowing-how or knowing-that. Know-why is concerned with uncovering causes, ends, and goals; with identifying that for the sake of which something is done, undertaken or pursued, or holds true. And here is the key focus of my meditation: our various fields of study and inquiry illuminate each other and it seems to me that this is what is in danger of being lost or at least forgotten in contemporary education.

The desire to know-why, as Aristotle intimates, is a fundamental dimension of the human condition—as evidenced by our sense of wonder and our attempts to formulate and reformulate questions and answers that open and deepen our understanding.<sup>72</sup> We are naturally curious. Even as infants, the desire to understand and experience the world around us is exhibited in sensuous corporeal gropings, putting anything to hand into one's mouth. Know-why responds to an aspect of our being. Or, to say the same thing in different words, human beings are naturally inclined towards knowing and find their fulfillment at least partially constituted by coming to know why things are as they are. By reflecting on this fundamental orientation of our nature as encountered in our social settings, we can collaboratively extend our questioning to everything in our collective range of experience that can be experienced as questionable. Knowing-why (as understanding) also comes in degrees, not just in respect to the marvellous diaphaneity of the objects and branches of knowledge, but also in respect to their appropriation by given temperaments and persons. Not everyone can be a Plato or an Aristotle, but everyone seeks meaning and understanding, and is hence a metaphysician.

The answers to our questions and how we understand these answers are themselves expressions of a deeper attachment to getting things right, in a word, to truth. The very possibility of sustained sociability, of understanding and being understood, implies a tacit commitment to truth and therefore to the standards and appropriate methods by which we can reasonably attain truth.<sup>73</sup> Indeed, we adapt our methods of seeking truth in response to the sort of truth we are trying to obtain. For instance, if we are confused by the meaning of a word, we might consult a dictionary, but if we are curious about the features of the moon we have recourse to a telescope.

Commitment to truth entails existential commitments on the parts of both teachers and learners to veracity as a virtue, enabling meanings to be reliably drawn from discourse with others and also to the canons of reasonable argumentation. These specific canons may be demanded by the rules that govern the conditions of our being. Our curiosity would be undirected, and hence unsatisfied, without commitment to ontological and logical principles such as the principle of non-contradiction. This is a logical principle because the conjunction ' $p$  &  $not-p$ ' is always false. This logical principle, however, reflects the ontological commonplace that the same thing cannot both be and not be at the same time and in the same respect: Fionnuala cannot both be *and* not be a human being at the same time; she either is human or not.

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<sup>72</sup> See Aristotle's opening sentence of the *Metaphysics*.

<sup>73</sup> MacIntyre has argued that a commitment to truth is a necessary condition of sociability on numerous occasions. See for example A. MacIntyre, *The Tasks of Philosophy*, vol. 1, Cambridge, Cambridge University Press, 2006, essays 3, 8, 9, and 10.

Moreover, know-why as it is directed towards truth requires that our education systems need to prioritise inquiry into ethics, and more broadly into ethical futures and a sustainable world. Know-why is likely to provide us with the requisite ways in which humanity might progress.

Know-why needs to be privileged in our curricula because there is an abiding relation and deep connection between the activity of questioning and the selves that question. Questioning is how humans manifest their natural wonder, and the most satisfying answers to the best questions are inevitably concerned with know-why. The self that questions is defined (at least partially) by the questions asked and the sorts of answers arrived at. This is why education in its broadest sense, involves self-making or self-realisation. To draw out the powers of the student is to help the student be more than what he or she was before, that is, successful education entails *self-transcendence*. All of the relations captured by *know-that*, *know-how* and *know-why* are transformed in the activities associated with education: teacher, student, and appropriated understanding are altered as teaching and learning illuminate their subjects.

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## 4.3 Learning for the future

Phil Race

It has long been recognised that learning happens by doing rather than by just being in the presence of someone more learned. For centuries, higher education educators' roles centred on transmitting the content of precious books, articles and other resources in ways that learners could handle. Now, information is ubiquitous. Most learning resources are available to just about everyone online (often free) or through a plethora of information-handling channels. This necessitates transformed roles for educators, to help learners to prosper and thrive by their own efforts in the sea of information. I argue, however, that in higher education we're not keeping up with our learners, often failing to respond to the questions in their minds, including:

- What am I supposed to be learning here?
- What else should I be learning?
- Why am I learning this and why here in this lecture room?
- How best can I learn this successfully?
- How does this fit with all the things I know already?
- With what resources and materials am I supposed to achieve this learning?
- How exactly am I expected to be able to show that I have learned successfully?
- How will my learning be measured, and by whom, where, and when?
- How best can I make sure that I get due credit for my learning?

### Teaching: making learning happen

The role of academic staff in higher education is moving fast towards being expert facilitators of learning. The person at the lectern is no more merely a communicator of scholarly information to students, but now needs to help them to navigate successfully through a sea of information on the Web, at home, in the workplace, on the go and in libraries and resource centres. More importantly, the crucial role of the teacher is now to design the assessment of learning and accredit evidence of achievement. Learning used to be measured using what came from students' pens in exam rooms and coursework assignments; now assessment spans many other ways in which students evidence their achievement, including presentations, working with fellow-students, reflecting on and self-assessing their work, and critiquing and making judgements on other people's achievements.

## Factors underpinning successful learning

Over the last couple of decades, I've asked over 100,000 people questions about how they learn. My findings<sup>74</sup> indicate that seven factors underpin successful learning:

1. *Wanting* to learn—curiosity, and the desire to succeed;
2. *Needing* to learn—having good reasons to learn, taking ownership of targets deemed to show successful learning;
3. Learning by *doing*—practice, repetition, experimenting, trial and error;
4. Learning through *feedback*—praise, critical comments, feedback from fellow-learners and expert tutors;
5. *Making sense* of what is being learned—students say 'getting my head around it' regarding concepts, theories and models;
6. Deepening learning by *explaining* things to others—practising communicating the learning;
7. Further deepening learning by *making judgements*—for example applying criteria to their own work (self-assessment) or to others' work (peer-assessment).

The vital part of the academic's job is now to help learners focus in on these processes. We still need to inspire, motivate and clarify difficult concepts, but gone are the days when it was enough to say to students 'I'll tell you what I know, but then it's your job (and not my responsibility), to work out what to do with what I've provided for you.'

## Do we measure the right things?

When it comes to *measuring* learning, too often we still tend to base our judgments on mere written words, setting parameters such as 3,000 word essays, 10,000 word dissertations and 60,000 word theses—strange equivalences are asserted between numbers of words, hours of learning and credit points. The volume of handwritten or typed words alone is seldom a sensible basis for quantifying learning. Every assessment process is (and always has been) just a proxy for measuring what's in students' heads, and what they can do with what's there. We can only measure learning in terms of what students can communicate, but we're now in an age where relatively little human communication happens with pen in hand (when did you last write more than a shopping list or post-it note on the fridge?). No wonder that 'handwriting for a degree' in exams feels like a time-warp to students, constraining and strange, without the possibility of assembling, re-assembling then developing thoughts on-screen in front of them, touch-typing or searching for information online as they go. We need to modernise our assessment tactics to be more online, more digital, more virtual, more face-to-face, more use of social media technologies, and more interactive.

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<sup>74</sup> For more detail, please see chapter 2 of Race. P. (2010) Making Learning Happen (2nd edition) London: Sage

We know that assessment drives learning—just ask students. But as long as assessment is predominantly (hand)written, learning in higher education will continue to lag behind other aspects of our advancing civilisation.

### Addressing the changing context

Higher education has never before been in such a state of rapid evolution, as highlighted in other chapters. ‘Customer satisfaction’ and league tables dominate planning, distracting from the most important elements of change, students themselves—and they’re changing fast, really fast. Students are becoming more value-conscious, more litigious, more diverse in background, experience and capability, more expectant of academic support, but less tolerant of poor teaching or unfair assessment.

Students today don’t come to universities to receive information or sit in lectures being presented with things they could have found faster by themselves. The age of ‘reading for a degree’ is perhaps over—students are now browsing, skimming, clicking, cutting-and-pasting, editing, drafting and re-drafting for a degree. Students now expect to find what they’re looking for in two clicks on their net-books, tablet-computers or smart-phones. If what they find requires payment or registration, they will usually skip it and look elsewhere. Sit among the students in a large lecture and watch what’s on their laptops or mobile phone screens; If they’re *really* interested, it is possibly the results of web searches related to what the lecturer is talking about. More often, it’s Facebook, YouTube or heaven knows what, with no more than half an ear to the lecture. In future, the challenge for lecturers is to ensure that every large-group session is something quite special—an important ingredient in the recipe for student learning.

### Learning for the future

Long gone are the days when all a lecturer needed was mastery of relevant subject matter, and it mattered little how well learning was facilitated. Students are ever more likely to walk away literally or metaphorically from an unsatisfactory learning experience, or make their dissatisfaction very clear in evaluations. Practitioners in higher education need to be able to ‘*cause learning to happen*’, and measure evidence of students’ achievement. The processes of teaching, and designing assessment are now much more important than the mere ‘delivery’ of subject content. Institutions—and educators—who fail to acknowledge this will face a precarious future.

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## 4.4 The purpose and process of lifelong learning: all work and no play?

Ezri Carlebach

The term ‘lifelong learning’ has its modern origins in post World War I reconstruction efforts. In view of the extension of suffrage, and with at least one eye on the principles of the October Revolution in Russia, the Adult Education Committee of the Ministry of Reconstruction declared in 1919 that:

‘adult education ... is a permanent national necessity, an inseparable aspect of citizenship, and therefore should be both universal and lifelong’.<sup>75</sup>

The use of lifelong learning as a policy term took recognisable shape in the 1970s with the arrival of the ‘knowledge economy’ as a driver of education and skills thinking, soon followed by the creation of a ‘learning society’ as a pan-political aspiration.

Lifelong learning in the sense I intend it here extends across a range of different settings, whether in the workplace, in a youth group, at a local library or community centre, or in a college, institute or university. It also stretches from some point in life at around 14 years through—if demographic predictions are to be believed—to 114 years, covering the various milestones that can occur in a person’s life such as parenthood, career change, relocation and so on.

### Work, learn and play

These things, the current orthodoxy asserts, all contribute to employability, encourage aspiration and provide a platform for a future commitment to learning, retraining, reskilling and so on. But it is precisely in the 14–19 age range, when young people make extraordinary leaps in their physical, emotional and intellectual growth, that our system tends to marginalise specific attributes and attitudes that are, in fact, essential to the desired employment and economic outcomes.

These attributes and attitudes are found in play more readily than in either learning or work. The video games industry often comes up as an exemplar of modern design and manufacturing. It seems we have no problem with play as a factor driving *consumption* of goods and services, but we don’t sufficiently appreciate or encourage its importance to *production*—and therefore wealth creation—whether in the technical or business realms.

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<sup>75</sup> Quoted in John Field, ‘Lifelong Education’, *International Journal of Lifelong Education*, 20: 1, 3 — 15, 2001.

This is of course because play is seen as the realm of the very young or of those at leisure, and thus the opposite of work, whilst at the same time work itself has become an all-encompassing realm, as indicated by the shift in Sunday supplement-speak from 'work-life balance' to 'work-life blend'. Some may argue that 'life' here includes play, but not, I would suggest, in the specific manner in which play is important to lifelong learning and its economic consequences.

In his classic work on the primary role of play in creating human culture, Dutch historian Johan Huizinga wrote:

'[t]o dare, to take risks, to bear uncertainty, to endure tension – these are the essence of the play spirit'.<sup>76</sup>

They are also the hallmarks of effective lifelong learning and at the same time characterise the very employability skills most needed by successful modern knowledge workers and their employers.

Rousseau spoke of 'the most useful of all arts, the art of training men'.<sup>77</sup> The current political climate demands that those providing publicly supported lifelong learning must prove their usefulness; i.e. that they deliver value for money to economies in the form of jobs and/or wealth created, whilst apparently granting less credence to the role of 'arts' in those accomplishments.

The question that remains for anyone concerned with the learning supply side is what impact does this economic imperative for lifelong learning have on our practice and our values as a learner- and learning-driven sector? It is important to observe that not only are those values not at odds with the economic priorities of a post-recessionary environment, but they are actually fundamentally important to recovery and growth. We must also beware that the economic imperative does not drive out the play spirit that is, in fact, at the heart of our ability to overcome technological, economic and social challenges.

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<sup>76</sup> *Homo Ludens*, Boston, MA: Beacon Press, 1950.

<sup>77</sup> *Emile*, 1762, Project Gutenberg E-edition, 2004.

## 4.5 First class: how assessment can enhance student learning

Sally Brown

Too many universities pay insufficient attention to assessment: usually the mechanics are adequately managed, but the purposes and practices are less well thought-through, relying on ‘tried and tested’ approaches, which in reality are neither.

‘Nothing we do to, or for our students is more important than our assessment of their work and the feedback we give them on it. The results of our assessment influence students for the rest of their lives and careers.’<sup>78</sup>

Assessment in higher education can be a powerful force, either to help students make sense of their learning, or conversely to make it a negative and demoralising experience. As Boud suggests:

‘Students can escape bad teaching: they can’t escape bad assessment.’<sup>79</sup>

Some would even say that our current assessment system is broken, that nothing less than a radical overhaul can save it from falling into total disrepute. In many universities, time-consuming and expensive complaints often centre on student dissatisfaction with what are sometimes, in truth, poor or even reprehensible university assessment practices. More students and their (fee-paying) parents are taking universities to court, questioning not just the fair implementation of assessment processes, but also the academic judgments on which grades are based.

So how can we use assessment as a force to positively enhance the student experience? We can direct students’ learning behaviours by designing and implementing better assessment. Students often treat marks like money:

‘How much is it worth? How much time should I spend on this?’

So if we want to steer their behaviour towards deeper learning approaches, we need to improve assignments.

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<sup>78</sup> Race, P., Brown, S. and Smith, B. (2005) 500 Tips on assessment: 2nd edition, London: Routledge.

<sup>79</sup> Boud, D. (1995) Enhancing learning through self-assessment London: Routledge.

If we *really* want students to leave everything to the last minute, cut-and-paste, plagiarise and regurgitate memorised material, we should set them tasks that reward such behaviour (as many off-the-shelf essay and exam questions do), but if we want them to genuinely engage with assessment, we must offer assignments that require incremental submission of work, feature personal research and demonstrate original thinking, while applying theory to practice in authentic contexts.

Assignments should model the practices that graduates will need in real life, demonstrating their skills as historians, scientists or health practitioners, rather than over-relying on essays, where 'writing about' is used as a proxy for 'knowing'. Too often we assess what is easy to assess rather than focusing on the heart of what students need to know and do.<sup>80</sup>

The following are my evidence-based observations which could help guide improvements in assessment practice:

### Assessment should be an integral part of the learning process

There have been recent moves away from the expectation that assessment is (just) of learning to agreeing that assessment is integral to learning.<sup>81</sup> Well-designed assignments require students to both demonstrate their competences and to apply what they have learned to subject-relevant contexts.

### Good feedback is essential to student learning

Students benefit from (and expect) timely feedback: the longer students have to wait to get work back, the less likely it is that they will make constructive use of lecturers' comments. This implies that work should be returned very quickly, certainly no more than three working weeks after submission, while the students still care and while there is still time for them to act upon advice.<sup>82</sup>

### If we want to set good study patterns, we need to design assignments early in the first year of study that encourage positive learning behaviours

Well-integrated, authentic assessment in the first year that includes a variety of early 'low stakes' assessed tasks can energise and motivate students. The first half of the first semester of the first year is our best opportunity to meaningfully engage them.<sup>83</sup>

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<sup>80</sup> John Biggs' work on 'constructive alignment' emphasises the importance of clarifying at the outset what students need to know and be able to do, and then designing curriculum delivery and assessment around this. See Biggs, J. (2003) *Teaching for Quality Learning at University* (Maidenhead: SRHE & Open University Press).

<sup>81</sup> See <http://www.northumbria.ac.uk/sd/central/ar/academy/cetl afl> Biggs, J. (2003) *Teaching for Quality Learning at University* (Maidenhead: SRHE & Open University Press).

<sup>82</sup> Nicol, D. J. and Macfarlane-Dick, D. (2006) Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, Vol 31(2), 199-218

<sup>83</sup> See Yorke, M. (1999) *Leaving Early: Undergraduate Non-completion in Higher Education*, London: Routledge.

Early assignments should improve information literacy (crucially including the ability to identify which are trustworthy Web-derived texts), effective referencing of sources, appropriate academic conduct (many plagiarists, who readily download music and images without a thought for copyright, don't understand the concept of acknowledging sources) and conventions of academic writing (for example, to what extent is a passive third-person voice required?). Too little, too much or the wrong kind of assessment can impact negatively, particularly on students already at risk of failure, withdrawal or underperformance.

### **Diverse assessment methods and approaches can benefit all students**

Most universities use three dominant assessment methods: unseen, time-constrained exams, reports and essays. But if we over-use a small subset of available methods, the same students are disadvantaged time and time again. If instead we offer a mixed diet, students who excel at oral presentations, essay writing, problem solving, group work and so on, can all have their place in the sun.

### **International students studying in a global environment are likely to need inducting into local assessment practices**

There are significant variations between systems, for example in the size and scope of assignments, the amount of oral assessment used (common in Scandinavia and the Netherlands), the level or formality expected in written work, the extent to which assessed group work is acceptable (not permitted in Denmark) and the extent to which multiple choice tests are used.<sup>84</sup> In a competitive international HE market, we ignore at our peril the significant differences in assessment expectations of international students.

### **We massively under-use technologies that deliver assessments and manage the results**

Much wider use should be made of the increasingly sophisticated computer-based methods for removing the drudgery of routine marking. A whole range of question types can be used, including menu-driven drag-and-drop questions, interactive maps, graphs, dashboards and free-text responses, all of which go well beyond multiple choice questions.

Individual routes through computer-based assessment programmes can be part of the learning process, with students being given guidance on why right or wrong answers are so, and being given further chances to answer parallel questions until learning is demonstrated. This can be a very cost-effective way of personalising learning.

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<sup>84</sup> See for example chapter 5 in Jones, E. and Brown, S. (2007) *Internationalising higher education*, London: Routledge, and Ryan, J. (2000) *A Guide to Teaching International Students* Oxford Centre for Staff and Learning Development.

Many are excited by the potential for computer assessment of essays and other forms of free text. While some claim this is already possible, I believe that currently we can only really recognise word strings, but developing work on computer-based parsing language can determine whether those word strings appear in grammatical sentences. Today, the best we can do is approximate assessment of short answer questions, but this is a new technological field and one that is developing fast.<sup>85</sup>

Technologies are also invaluable for managing personal data: for example, most universities now support e-Portfolios to enable students to provide flexible and accessible evidence of their employability competences, developed both within the university setting and elsewhere, including volunteering, university societies, and part-time work.<sup>86</sup>

At the same time, efficient and innovative data management systems can help compile and correlate marks, link them to the learning outcomes in course documentation, map them to quality assurance benchmarks, as well as to professional and subject body requirements, and enable individual student progression to be tracked and recorded.<sup>87</sup>

## Conclusions

I predict that universities of the future will be less concerned about content delivery, since students can access diverse information ubiquitously, and will focus more closely on the recognition and accreditation of learning, wherever that might have taken place (in the workplace, in different national contexts and using open source materials). This means that we need to concentrate more strongly on supporting student engagement with learning, and I argue that the strongest locus of this is through improving assessment.

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<sup>85</sup> See Guest, E. and Brown, S., (2007) A new method for parsing student text to support computer assisted assessment of free text answers, in: Khandia, F. (ed.) 11th CAA International Computer Assisted Conference: Proceedings of the Conference on 10th & 11th July 2007 at Loughborough University, Loughborough, pp. 223-236.

<sup>86</sup> JISC (2010) Effective Assessment in a Digital Age HEFCE Bristol provides information about HEIs using e-Portfolios and many useful examples of how assessment can be supported through technologies

<sup>87</sup> See <http://www.taskstream.com/pub/uk/welcometotaskstream.pdf>

## Section five – What should the role of enterprise and business be?

### 5.1 Education for employment and long-term economic development in China

Isa Wong

The focus of the debate around education system reform in China is increasingly concerned with how best to prepare students for the future, in turn continuing China's economic development and increasing its international competitiveness. Higher education has a crucial role to play in this—it has to be relevant to today's society and that of the future, ensuring that students are familiar with and proficient in using the tools and skills which they will be reliant on in employment and 21st century society in general.

On 29 July 2010, the Ministry of Education released a comprehensive plan outlining its strategies for education in China over the next 10 years: the 'State Guidelines for Medium-to-Long-Term Education Reform and Development Plan between 2010 and 2020'.<sup>88</sup> Embedded within the higher education-related parts of the plan, several key themes are apparent:

- **an emphasis on vocational education:**  
'Expanding vocational education must be given more precedence ... it is a major channel through which to boost economic growth ...'<sup>89</sup>
- **a relaxation of central control:**  
'Higher educational institutions shall be urged to run themselves in distinctive ways, and be categorized and governed accordingly.'<sup>90</sup>

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<sup>88</sup> The Chinese version can be found here: [http://www.gov.cn/jrzq/2010-07/29/content\\_1667143.htm](http://www.gov.cn/jrzq/2010-07/29/content_1667143.htm), and there is an English version here:

[https://www.aei.gov.au/news/newsarchive/2010/documents/china\\_education\\_reform\\_pdf.pdf](https://www.aei.gov.au/news/newsarchive/2010/documents/china_education_reform_pdf.pdf).

<sup>89</sup> State Guidelines for Medium-to-Long-Term Education Reform and Development Plan between 2010 and 2020:

[https://www.aei.gov.au/news/newsarchive/2010/documents/china\\_education\\_reform\\_pdf.pdf](https://www.aei.gov.au/news/newsarchive/2010/documents/china_education_reform_pdf.pdf), pp.16–17.

<sup>90</sup> *Ibid.*, p.21.

- and an opening up of the tertiary education admission process: 'Matriculation reform shall serve as the breakthrough in the effort to terminate the practice that a single round of examinations decides the destiny of a student ... gradually bringing about a new examination and enrollment system whereby examinations are given in different categories, and students are evaluated comprehensively and enrolled in diverse ways.'<sup>91</sup>

Taking each of these themes in turn, it is clear to see why the Ministry of Education is pursuing such a strategy and how these reforms will act as the key building blocks. By remedying current problems and creating a world-class higher education system China aims to stimulate economic development for many years to come.

**An increased focus on vocational education** is a practical approach in order to develop a more skilled workforce, better able to satisfy market demand. As with other countries in the region, employers are increasingly struggling to find graduates with the suitable skill sets for the roles they are looking to fill. This is despite the fact that between 2001 and 2009, the number of university graduates each year increased by six times, from 1.1 million to 6.1 million.<sup>92</sup>

That number increased again to 6.6 million in 2011, while 600,000 graduates from the previous year still didn't have a job.<sup>93</sup> That means the unemployment rate for college graduates of around 10 per cent is much higher than the 4.1 per cent average urban jobless rate.<sup>94</sup>

At the same time, graduates are experiencing difficulties finding jobs in line with their high and potentially unrealistic expectations. In 2011, more than 1.4 million people applied for civil service jobs when there were only 16,000 positions on offer.<sup>95</sup> Certain kinds of jobs, particularly those with a level of prestige or status attached, are more sought after than others and it isn't uncommon for graduates to start a job and quit soon after when they realise that it isn't the perfect position that they were seeking. Others might not take up roles in the first place as the salary doesn't satisfy their expectations, so choose to hold out for something better.

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<sup>91</sup> Ibid., pp.26-27.

<sup>92</sup> KPMG, Education in China, 2010, <http://www.kpmg.de/docs/Education-in-China-201011.pdf>, p.1.

<sup>93</sup> Yojana Sharma, Guidelines to ease graduate unemployment, University World News, Issue No:175, 12 June 2011, accessed May 2012,

<http://www.universityworldnews.com/article.php?story=20110610213858656>.

<sup>94</sup> EconMatters, College Graduates: Too Many in China, Not Enough in America?, July 4 2011, accessed May 2012, <http://www.econmatters.com/2011/07/college-graduates-too-many-in-china-not.html>.

<sup>95</sup> BBC, Young and unemployed: China's six million graduates, 19 July 2011, accessed May 2012, <http://www.bbc.co.uk/news/world-asia-pacific-14192337>.

There is evidence that a series of measures implemented by the government since 2009 (such as a graduate internship schemes, encouraging graduates to join the army, or to teach in remote and disadvantaged areas) is going some way to addressing the unemployment problem,<sup>96</sup> but the figures are still worrying. These problems can only be addressed fully by the kind of broad grassroots approach that the Development Plan advocates.

It is also worth noting that the increased emphasis on vocational education doesn't only begin at higher education—importantly, it starts earlier on in the school system that ultimately feeds into colleges and universities. A number of privately funded vocational schools have experienced rapid growth, catering for students from the junior secondary level upwards. Private investment has also played a key role in the establishment of training centres and programmes that teach participants specific work-related skills. Courses include language and IT training, and other vocational/business-related subjects such as accounting and finance, HR, cooking, beauty, hairdressing, tailoring, car maintenance and teacher training. Nearly 100 million people take part in some form of such training in China each year.<sup>97</sup>

In order to ensure that graduates possess the kind of skills that employers are looking for and help more of them to find jobs, the vocational and training sectors must continue to be developed further in China throughout the coming years. Key to this will be consolidating the industry and developing recognised brands, as at present it remains highly fragmented.<sup>98</sup> It is important that the sector is standardised and a degree of consistency is established in the kind of courses being undertaken and the qualifications that they lead to, giving employers a common benchmark by which to judge their job applicants.

Further issues worthy of mention with relation to graduate unemployment are geographical imbalances and the residency restrictions which many cities in China still enforce. Inability to gain the coveted *hukou*, or permanent residence permit, of their city of study when their course finishes means that many graduates have to return to their place of origin after graduation, often to rural areas with few prospects for graduates. In 2011, the State Council chaired by Premier Wen Jiabao recommended that cities should remove these restrictions except for the major municipalities: Beijing, Shanghai, Tianjin and Chongqing. Booming cities in the south such as Shenzhen and Guangzhou have already eased their rules, but criticisms remain that it is still only a piecemeal approach.

<sup>96</sup> KPMG, Education in China, 2010, <http://www.kpmg.de/docs/Education-in-China-201011.pdf>, p. 10.

<sup>97</sup> *Ibid.*, pp. 9–11.

<sup>98</sup> KPMG, Education in China, 2010, <http://www.kpmg.de/docs/Education-in-China-201011.pdf>, p. 11.

There continues to be a lack of graduate mobility and those leaving university still want to be in the big municipalities in spite of there being a demand for graduates in many smaller cities and towns away from the coast. The policy of making graduates who relocate to western or central China, and those who join the army, eligible for a full refund of their tuition fees (dubbed the 'Go West' refund), might go some way to addressing this imbalance.<sup>99</sup>

On a different level, removing bureaucracy and administrative restrictions and **relaxing central control over universities** in order to give them increased autonomy will be beneficial in a number of ways. The Development Plan calls for higher education institutions to 'overcome the tendency toward homogeneity, foster distinctive school-running philosophies and styles, distinguish themselves at different levels and in different fields, and strive to be the best'.<sup>100</sup> By releasing central control and enabling institutions to make their own decisions with regard to how they are run, university presidents and faculties will have greater flexibility to operate in the optimum way that suits them best. They will be able to hire more freely and develop unique research specialties—a core value for world-class institutions is freedom of research, publication, teaching and students' activities on and outside campus.<sup>101</sup> These freedoms are vital in order to retain top academic talent within the country and enable funding to facilitate cutting edge research to be allocated where necessary. Keeping top talent within China is key in terms of maintaining international competitiveness and elevating research capabilities in the way that the Development Plan calls for; contributing to innovation in knowledge, technology, national defence and the sciences.<sup>102</sup>

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<sup>99</sup> Yojana Sharma, Guidelines to ease graduate unemployment, University World News, Issue No: 175, 12 June 2011, accessed May 2012,

<http://www.universityworldnews.com/article.php?story=20110610213858656>.

<sup>100</sup> State Guidelines for Medium-to-Long-Term Education Reform and Development Plan between 2010 and 2020:

[https://www.aei.gov.au/news/newsarchive/2010/documents/china\\_education\\_reform\\_pdf.pdf](https://www.aei.gov.au/news/newsarchive/2010/documents/china_education_reform_pdf.pdf), p.21.

<sup>101</sup> Linda Yeung, Ex-premier criticises higher education reform, University World News, Issue No: 169, 01 May 2011, accessed May 2012,

<http://www.universityworldnews.com/article.php?story=20110429170813946>.

<sup>102</sup> State Guidelines for Medium-to-Long-Term Education Reform and Development Plan between 2010 and 2020:

[https://www.aei.gov.au/news/newsarchive/2010/documents/china\\_education\\_reform\\_pdf.pdf](https://www.aei.gov.au/news/newsarchive/2010/documents/china_education_reform_pdf.pdf), pp.20–21.

Increasingly Chinese universities are competing in a global marketplace for academic talent, and that talent is often lured away from the country by other countries and institutions also eager to increase their own pools of top talent. Some countries (for example nearby Australia and New Zealand) now grant additional points in their immigration systems to students who have studied in their universities in an attempt to attract more international students and encourage them to stay in the country after their studies have finished.<sup>103</sup> This is directly counter to recent developments in some other nations, including England.

For top quality research to flourish, any emphasis on research quantity and targets set by central government should be eased, and giving institutions greater autonomy will help do this. There have been criticisms in the past that micromanagement by university administrators acting on instructions from central government forces all universities to chase the same targets, leading to a ‘monotony of purpose’. Since 1999, the presidents of China’s 31 leading universities have automatically had the administrative rank of Vice-Minister bestowed upon them and some argue that this is not healthy in promoting academic culture since professors come to be more concerned with rank than academic standards. There might therefore be a concern in some quarters that moves to greater autonomy will go hand in hand with losing crucial connections—and influence—with powerful government departments, and this is something that will need to be overcome.<sup>104</sup>

**Opening up the higher education admission process** and moving away from an exam-centric system is also important on several levels. As with vocational education mentioned above, this isn’t something specifically advocated to begin from higher education onwards. At all levels of education, the Development Plan puts ‘a premium on integrating learning with thinking’ and advocates that teaching should be ‘heuristic, exploratory, discussion-based, and participatory’, helping students learn how to study, stimulating their curiosity, developing their interest and hobbies, and fostering an environment for independent thinking, exploration and innovation.<sup>105</sup>

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<sup>103</sup> OECD, Education at a Glance 2011: Highlights, OECD Publishing, 2011, accessed April 2012, <http://www.oecd.org/dataoecd/61/5/48631550.pdf>, p.34.

<sup>104</sup> David Cyranoski, China debates university reform, *Nature* 464, 336-337 (2010), accessed May 2012, <http://www.nature.com/news/2010/100316/full/464336a.html>.

<sup>105</sup> State Guidelines for Medium-to-Long-Term Education Reform and Development Plan between 2010 and 2020: [https://www.aei.gov.au/news/newsarchive/2010/documents/china\\_education\\_reform\\_pdf.pdf](https://www.aei.gov.au/news/newsarchive/2010/documents/china_education_reform_pdf.pdf), p.25.

This is in-line with the kind of 21st Century Skills promoted by the Organisation for Economic Co-operation and Development (OECD). These are aimed at equipping young people with new skills and competencies to allow them to benefit from the emerging new forms of socialisation and to contribute actively to economic development under a system where the main asset is knowledge.<sup>106</sup> 21st Century Skills put an emphasis on critical thinking, problem solving, communication, collaboration, creativity and innovation. Information, media and technology skills are crucial too in the ever-expanding digital world.

This approach marks a stark contrast to the theory that passing exams and getting the highest possible score is the *raison d'être* of going to school and studying. Moving away from a 'one-exam-decides-all' system for entry into higher education towards a more holistic evaluation of students as 'whole people' using multiple tests and measures, sets an important benchmark for earlier levels of the education system. It will encourage schools to adopt broader curricula for teaching to help their students become more rounded individuals, with a view to ensuring that they have a wide range of experiences and skills to draw on when applying to universities.

As with vocational education, these changes will start from the junior secondary level as the early stages of the education system have a key role to play in ensuring that students are properly prepared for study in tertiary education. There is a common problem across Asia Pacific of students arriving at higher education not properly prepared with the skills and competencies necessary for further study at degree level. Moving away from purely test-based admissions and diversifying university entrance criteria and processes will help to foster a culture across the wider education system where this is no longer the case.

In spite of this, some concerns have been raised with regard to reforming the *gaokao*, or national college entrance examination. With the *gaokao* no longer being the only criterion for admission, various other factors such as teacher recommendations and extracurricular activities are likely to feature more prominently.

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<sup>106</sup> Ananiadou, K. and M. Claro, 21st Century Skills and Competences for New Millennium Learners in OECD Countries, OECD Education Working Papers, No. 41, OECD Publishing, 2009, <http://dx.doi.org/10.1787/218525261154>, p.5.

All of these issues will have a bearing on how effective China's Medium-to-Long-Term Education Reform and Development Plan will be. Nevertheless, by bolstering vocational education, relaxing central control and allowing institutions greater autonomy, and moving away from an exam-focussed admissions system, the building blocks are being put in place for a truly world-class higher education system in China. Graduate unemployment rates will drop as those leaving higher education will be better prepared for the challenges of 21st century life and employment. Higher education institutions will become hubs for specialist research, producing innovative scientific and technological developments to ensure long-term economic development and keep China at the forefront of international competitiveness.

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## 5.2 Innovation in higher education

Geoff Mulgan and Mary Abdo

For universities around the world these are both exhilarating and troubling times. Enrolment in tertiary education has risen beyond any expectations, to some 150 million worldwide.<sup>107</sup> A truly global industry has taken shape, with new technology enabling rapid collaboration and dissemination of ideas, and students increasingly matriculating at foreign institutions.

Yet there is also disquiet. Much important knowledge creation takes place outside of higher education. Few institutions are rich or self-sustaining, and many face severe squeezes on costs. Despite high hopes, only a handful have actually made a surplus from their technology transfer and spin-out activities.

So what might universities become in an era which should be so rich in opportunity? It would be strange if the same answer was right for all universities, given the diverse needs of university stakeholders, which include students, governments, industry, and academics. Many higher education institutions have tried to be all things to all people, and a few institutions at the top can do this effectively. But most fail. That's why we believe the key to the future of higher education lies elsewhere: in greater pluralism, with the deliberate cultivation of diverse models; in greater specialisation, with universities identifying a few areas in which they will excel; and in better integration, with institutions and individuals sharing knowledge more effectively but also integrating more effectively with the world outside. In what follows we suggest how these goals may be realised.

### HE institutions need to innovate as they become both more global and more local

Foreign HE systems, particularly in Asia, are growing at exceptional pace: India aims to build 800–1,000 new universities<sup>108</sup> and many upwardly mobile foreign students are now attending university, with China's students already comprising 14 per cent of the international student population. Many English-language universities are setting up new campuses abroad, while some foreign institutions (like Nankai University in Tianjin, China) are attracting cost-conscious Western students with the promise of low prices. And some countries are building up comparative advantage: Australia, with barely 0.3 per cent of the world's population, boasts 7 per cent of all

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<sup>107</sup> UNESCO (2009): Trends in Global Higher Education: Tracking an Academic Revolution: A Report Prepared for the UNESCO 2009 World Conference on Higher Education. Paris: UNESCO. Available at: <http://unesdoc.unesco.org/images/0018/001831/183168e.pdf>

<sup>108</sup> 800 varsities, 35,000 colleges needed in next 10 years: Sibal". The Hindu. 24 March 2010.

international students. Britain is in on the game too: in 2010, then-Prime Minister Gordon Brown suggested that in 10 years HE would be 'Britain's biggest export'.<sup>109</sup> But some universities need to pursue an opposite strategy: becoming more embedded in their local communities and economies, encouraging students to study near home. And some must do both at once. A good example is Adelaide's University City: Adelaide has imported foreign excellence, including offshoots of Carnegie Mellon and UCL, but has also encouraged its universities to become tightly enmeshed in the regional economy. Other places aiming for a similar result include Guangzhou University City which aims to have 200,000 students and 20,000 academic staff, and Singapore, which is attracting foreign talent to research hubs such as its Biopolis, a state-of-the-art biomedical research centre.

### Higher education needs to innovate and evolve both technologies and 'face to face' interactions

It has been 40 years since the Open University provided a fully-formed alternative to the traditional university. The University of Phoenix in the US (and expanding) has pioneered a cost-conscious, scalable alternative too (albeit with many critics of the quality of what's achieved). Online platforms like iTunes U, TED and eduFire now enable everyone to enjoy the best lectures worldwide free of charge. Yet it's remarkable how little technology has changed university education. Few institutions capitalise on technology to improve teaching, and fewer use it to join up efforts across institutions. The National Center for Academic Transformation in the US incentivised institutions to experiment with new ways of teaching using technology; on average institutions cut costs by 39 per cent with improved pass rates and student satisfaction. However, the very ease of access to technology reinforces how important face-to-face interaction remains. In every creative industry, contrary to expectations, consumption of electronic forms has risen in tandem with consumption of the live direct experience, albeit often with creative new forms of live and face to face experience. Peter Drucker forecast that by the 2020s 'the big university campuses will be relics'. But his prediction is likely to turn out to be as wrong as similar forecasts that told of the demise of the concert and the football match.

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<sup>109</sup> Gordon Brown speech, Kings Cross Hub, April 2010.

### Higher education needs to innovate so that it becomes part of all stages of life

With more mature students (the university population of over-25s increased by 15.3 per cent between 2007–08 and 2008–09),<sup>110</sup> we should expect universities to offer courses for mid-career top-ups and for career switches. More programmes like Harvard's Advanced Leadership Initiative pilot, which 'challenges the concept of retirement', may crop up, offering individuals the opportunity to retrain as well as to share their insights with younger students. Perhaps too we will see more integration of learning and work at all stages. This approach has always been the aim of law, medicine, and military academies. The idea that you learn best by applying knowledge and that the best teachers are also practitioners is not inherently alien to higher education, and it is almost certainly becoming more relevant to business, particularly in a service economy. Moreover, the soft skills of collaboration, team work, entrepreneurship and communication are best learned through practice—not just through pedagogy.

### HE institutions will need to innovate to cut costs

In many countries around the world, HE institutions will receive less money from government. A drop in revenues need not, however, always mean passing on the cost to students in the form of higher fees. There are many interesting examples of alternative means of cutting costs or offsetting student loans—from South Africa's CIDA, where students had to help with cooking, cleaning, and maintenance to keep costs down to the widespread US Federal Work Study Programme, which allows students to offset loans by working in campus offices. Attention to costs is also likely to encourage partnerships and sharing. The Scottish Universities Physics Alliance is an early leader, joining up research efforts across institutions to share resources, cultivate areas of excellence and avoid duplication. Another radical example is researchbase.eu, a platform for collaboration among Europe's best researchers, being developed under the banner of Atomium Culture by the creator of a key underlying technology for Google, Massimo Marchiori.

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<sup>110</sup> Eason, G. "Record applicants accepted at UK universities in 2009". BBC News. 21 January 2010.

## HE institutions will need to innovate to lower barriers to participation

No one knows what the optimal proportion of the population passing through HE is (and of course it depends very much on what HE actually provides and is intended to accomplish). But more dynamic economies probably do require a greater supply of well-educated graduates. The Open University, already a leader in open access to HE, has a promising model for making courses even more accessible; in 2006 it launched OpenLearn, making a growing selection of distance learning course materials available for free access, including downloadable versions for educators to modify, plus free collaborative learning-support tools. Another good example is a project at the National University of the Northwest of Buenos Aires Province (UNNOBA), which, in a response to rapid demographic change, engages people of retirement age who return to study.

These are just a few of a spectrum of innovative options that show how HE could become more diverse, and therefore better able to respond to a range of conflicting pressures. But the oddity of our present HE systems around the world is that there is little attention to innovation in how higher education is organised. There are some good reasons for the conservatism of institutions, for their emphasis on research, and for the cultural and social signifiers of mortar boards, gowns and scrolls. But it's easy to forget how recent the current forms are. Cardinal Newman—so influential in shaping ideas of the university in the 19th century—believed that training the intellect through the acquisition of universal knowledge was the only role of the university, and he saw research, as Balliol's Benjamin Jowett put it, as 'a mere excuse for idleness' which had no place in the university.

The current forms of the university are certainly not eternal. Yet radical innovation is rare. There are a few exceptions like Aalto University in Finland, or the radically reshaped course structure of Melbourne University. But systematic innovation has never been deliberately cultivated. Yet this is almost certainly what we need now: more deliberate innovation to cultivate a more diverse HE landscape better suited to the complex needs of a modern society.

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[The Young Foundation](#) brings together insights, innovation and entrepreneurship to meet social needs. It has a track record of over 50 years success with ventures such as the Open University, Which?, the School for Social Entrepreneurs and Healthline (the precursor of NHS Direct). It works across the UK and internationally – carrying out research, influencing policy, creating new organisations and supporting others to do the same, often with imaginative uses of new technology. It now has over 60 staff, working on over 40 ventures at any one time, with staff in New York and Paris as well as London and Birmingham in the UK.

## 5.3 How higher education can drive an enterprise revolution

Wendy Purcell and Caroline Chipperfield

Universities are places of discovery and innovation, as expressed through the two pillars of their activities; teaching and research. Around the world some universities are moving to view their academic endeavours through the lens of enterprise, further extending their so-called 'third stream' activity and embracing a wider cultural and social agenda. From this perspective,

**'being enterprising is the ability to respond to change, take risks, to innovate and to generate and implement new ideas and new ways of doing things. Put simply, enterprise is having ideas and making them happen'.<sup>111</sup>**

In this way enterprise draws upon both teaching and research, creating value by delivering learning that enjoys currency, social responsibility and high employability as well as research that reflects societal impact, application and innovation.<sup>112</sup>

In the UK, there has been a long tradition of 'civic universities'. These universities were developed in the 19th century by entrepreneurs and civic leaders to satisfy a strong social imperative and the changing demands placed on cities for an increasingly skilled workforce.

However, a new paradigm is emerging—going beyond that of a civic university—the enterprise university. As Goddard notes:

**'A wider view of the economic and social role of universities, going far beyond technology and skills transfer, is developing and should be encouraged.'<sup>113</sup>**

This new model university maintains its strong commitment to knowledge dissemination, creation and transfer, but pursues its mission in partnership in order to sustain and enrich its academic offer. These universities, bold and entrepreneurial, are beginning to accelerate this change, placing more emphasis on their role as an 'urban innovation engine'<sup>114</sup> and increasingly recognised as significant anchor institutions with an important presence within a city and community.<sup>115</sup>

<sup>111</sup> HEFCE 2010

<sup>112</sup> Vorley, T. and Nelles, Jen. 2008. (Re)Conceptualising the Academy: Institutional development of and beyond the third Mission. OECD. December 2008

<sup>113</sup> Goddard, J. Reinventing the Civic University. NESTA 2010

<sup>114</sup> Williams, L. Turner, N. and Jones A. 2008. The Work Foundation - Embedding Universities in Knowledge Cities. December 2008

<sup>115</sup> The Work Foundation. 2010. Research Paper 2 Anchoring Growth: The role of 'Anchor Institutions' in the regeneration of UK cities. January 2010

Universities attract smart and creative people; innovate through practice, development and commercialisation. They also contain a range of unique facilities and are able to reach out and build strong networks of partners that can drive social inclusion and economic growth.

### The culture that underpins successful enterprise endeavour

At the core of an enterprise university is the development of an enterprise enabling and sustaining culture. For many universities, this requires a distinct step-change in thinking; from an organisation based solely on its excellence in basic research and focus on personal learning, to one where innovation and engagement is embedded, actively shaping the university's offer through team working and partnership.

In many cases, the successful establishment of an enterprise culture is a genuine change of emphasis and requires a new model of leadership, shifting away from 'command and control' to one that embraces 'learn and adapt' behaviours. An enterprise culture relies upon an agility where confidence in ideas and risk-sharing are encouraged, actively championed and rewarded. This in turn empowers staff and fosters innovation in order to create an environment in which the organisation can excel.

### Change agents

As Kotter<sup>116</sup> describes, it is important in any change programme to secure early indicators of success—the so-called 'quick wins'. This builds confidence in the organisation and supports the generation of new ideas, accelerating the pace of change and encouraging others to engage. One way of accelerating change is through an 'enterprise enablers' programme. These comprise staff from a range of levels and roles, working together to create small steps of change in their own departments and teams, in line with delivery against the overall institutional mission.

These agents of change are the enthusiasts, the early adopters and those of a more cynical tone who wanted to get on with 'doing enterprise'. They act as catalysts to accelerate and develop the mission, promoting the agenda at a more local level—translating corporate intent into individual delivery. They are also key to the 'sense making' necessary for individuals at the local level to interpret, understand and adopt change.

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<sup>116</sup> Kotter John P. 1995. Leading Change: Why Transformation Efforts Fail. Harvard Business Review. March–April 1995

## Academics—tackling cultural change head-on

At the root of a university enterprise culture is a core belief that all members of staff and indeed the entire student body can be enterprising—in particular in championing the role of creativity and innovation to tackle challenges head on. AIM Research in 2010<sup>117</sup> showed that academics are five times as entrepreneurial as the general public but often do not consider themselves in this way. Perkmann and Salter highlighted that academics believe that institutions do not value their

**‘entrepreneurial activities and that these activities count little in the promotion and recruitment decisions of their universities’.**<sup>118</sup>

For a successful enterprise culture it is important that the pathways to reward and career progression are transparent and inclusive of all activity. It can be more difficult to develop measures of excellence for the recognition of enterprise, but is imperative to ensure parity in status and progression. A report by the NGCE and CIHE supports these findings and recommends that universities

**‘make bold changes to reward and remuneration frameworks to recognise the entrepreneurial behaviour of academics and practitioners’.**<sup>119</sup>

## Students and alumni

A successful enterprise culture extends across a university to actively include its students and alumni, both in establishing the culture and carrying it forward. Whether these activities involve ‘Dragon Den-type’ competitions, business ideas challenges, or enterprise clubs it is imperative that the enterprise ethos is embedded in the university curriculum, is eligible for the award of university academic credit, enriches the student experience and provides extra-curricular opportunities.

Direct contact with employers and entrepreneurs, together with an exposure to incubation facilities, work placements, internships and volunteering all ensure that students gain confidence in their ability to tackle live commissions and projects, operate in real-world situations and secure experiences that distinguish them in the market place. Research-led teaching enriched by a range of real-life experiences delivers an enterprise-led pedagogic approach.

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<sup>117</sup> Salter, A. Tartari, V. and D’Este, P. 2010. The Republic of Engagement Exploring UK Academic Attitudes to Collaborating with Industry and Entrepreneurship. August 2010.

<sup>118</sup> Perkmann, M and Salter A. Entrepreneurial academics need support. Financial Times. December 20 2010

<sup>119</sup> Herrmann, K. Hannon, P. Cox, J. and Ternouth P. 2008. Developing Entrepreneurial Graduates: Putting entrepreneurship at the centre of higher education. CIHE

## Business model

To maximise this enterprise culture, a new business model is needed, especially given that enterprise in action relies upon being bold and taking informed risks with ruthless attention to delivery. Traditional models of operation, university committee structures and upward delegation do not adequately support enterprise given the intrinsic need to be agile. The 2009 PA Consulting report summarised that need for change

“from an ‘old world’ of public funding entitlements to a still-forming ‘new world’ of income earned through value delivered”.<sup>120</sup>

Universities will need to adapt their business model to embrace these changes and adopt a solutions-orientated mindset—responsive to expressed and anticipated customer needs and demands. The enterprise model places a premium on securing shared solutions through partnership working and a belief that a university can impact positively on the community it serves.

## External culture—creating pathways for change

Universities, typically through their student body, engage in community volunteering projects, work with schools as part of outreach and liaison, act as supernumerary members of the workforce out on placement and engage in aspects of social enterprise or community engagement.

Enterprise is not simply about the number of spin-off/start-up companies or business contracts; it is about value creation through cultural transformation, innovation and the exploitation of ideas. Enterprise universities create a seamless pathway, at the heart of a national landscape for innovation and creativity—providing a strong and diverse network, creating a critical mass of activity and further developing their anchor status as beacons or ‘hubs’ of enterprise and as a catalyst for change.

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<sup>120</sup> Boxall, Mike .2009. Escaping the Red Queen Effect. PA Consulting Group

## The enterprise ecosystem

While focussed on the role of national governments to ignite venture creation and growth, Isenberg<sup>121</sup> discussed the key principles in developing an entrepreneurship ecosystem. These principles provide a useful checklist for universities interested in establishing and maintaining an enterprise culture:

- Articulate a clear vision of what an enterprise-led approach and ethos looks like for the university.
- Build your bespoke enterprise ecosystem around local conditions and develop to support the local environment.
- Engage the private sector from the start with SMEs playing an important role alongside multinationals and community groups:

**'Regional economic growth is highly correlated with the presence of many small, entrepreneurial employers – not a few big ones.'**<sup>122</sup>

- Establish opportunities for 'quick wins' by building a network of vibrant enterprise change agents.
- Ensure that the university reward structure is transparent and enterprise commands an equal status to teaching and research.

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**The University of Plymouth** has a clear mission to be enterprise-led in everything it does and articulates this through its student experience. It is a top 50 UK research university and (in partnership) oversees a network of incubation and innovation spaces across the South West, managing over £100million worth of assets.

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<sup>121</sup> Isenberg, Daniel J. 2010. How to start an entrepreneurial revolution. Harvard Business Review, June 2010

<sup>122</sup> Glaeser, E. and Kerr, W. 2010. The Secret to job growth: think small. Harvard Business Review July-August 2010.

## 5.4 Universities and The Knowledge Age

David Docherty

University and business relations have always ebbed and flowed. For the most part the relationship has been fruitful, creative and collaborative. On occasion, it's been a dialogue between at best dysfunctional friends, at worst, warring tribes. New and broader thinking about the role of universities in a knowledge-based economy is required.

There are as many definitions of the knowledge economy as there are economists trying to define it. I simply take it as axiomatic that any useful definition will stretch well beyond the creative, digital and information technology industries (CDIT) and encompass manufacturing and services, where ideas are also a major economic driver. This results in the uglier, but more accurate concept of a knowledge-based economy powered by the Internet (which is the equivalent of steam for the first industrial revolution, and oil and electricity for the second).

This has profound implications for what universities do in engaging with the economic life of the nation, and raises challenging questions about some taken-for-granted assumptions about business-university collaboration. For example, universities have been consistently lectured about their role in developing the skills agenda. But is 'skill' a knowledge-based concept, or is it a term best left for industries that require rote learning and mechanical responses to repeatable problems? Skills are a necessary, but not remotely sufficient condition of economic and business success.

A knowledge-based economy requires experts who are self-reflective, critical of existing methods, intellectually restless and passionate about doing things better. Experts are the 'cybernauts' of the knowledge age. They are built for the systemic complexity of modern manufacturing, services and creative businesses, for the repeated shocks of the new, and for a future where cannibalising your own market is preferable to becoming someone else's spam in a can.

The race will be won by economies which produce the highest calibre expertise to sit alongside smart money and coherent government policies. Universities have always been there to produce experts—from the earliest degrees in law, rhetoric, religion, astronomy and medicine, to the latest on quantum mechanics and digital media. And how businesses work with universities on anticipating the expertise required for the next wave of global change is of vital importance to their success. We must advance the debate beyond the hackneyed realms of STEM versus non-STEM, hard versus soft skills, oven-ready graduates versus thoughtful citizens.

Language traps as well as enables, and I think there is a strong argument that it is time to refresh the concepts that businesses and universities use to describe their joint challenges. We need a Big Conversation for The Knowledge Age. One that fully represents the complexities of living in modern businesses, and helps shape the thinking of the next generation of experts who will leave higher education knowing that expertise is something they will spend their lives gaining and utilising. A key role of a university is to produce people who have learned how to learn.

In the UK, the Council for Industry and Higher Education (CIHE) has begun this Big Conversation, with its Task Forces that bring together senior business leaders and Vice Chancellors. The first, *The Fuse*, focussed on the Creative, Digital and IT industries (CDIT for short) and recommended that UK administrations should put the CDIT industries alongside STEM at the heart of their growth strategies, that universities should recognise that CDIT businesses require graduates who can operate simultaneously across multiple technological and creative disciplines (and that this should be recognised in undergraduate education, as it is increasingly in Doctoral courses), and that ICT in schools should be radically overhauled to ensure that universities are receiving the right flow of talent.

The second report, *Powering Up*, focussed on cooperation for success in advanced manufacturing. It argued that universities are vital to advanced manufacturing growth, and should be central to the success of Local Enterprise Partnerships, the Technology Innovation Centres and the Regional Growth Fund. It went on to recommend that the Government and devolved administrations establish Advanced Manufacturing Enterprise Centres (AMECs), which would integrate universities with entrepreneurs, both in SMEs and major businesses, through a range of coherently managed relationships.

*Powering Up* also recommended that universities be more open with their IP and, indeed, should make as much of it available for free to advanced manufacturing businesses, looking to the Glasgow University model of offering up to 95 per cent of their IP as an example. Finally, the report argued that it was the responsibility of big businesses to work with universities to increase the quality of knowledge and information in smaller businesses in their supply chains.

Success in the knowledge-economy requires integrated thinking of the highest order. Governments across the globe are forcing the pace through *dirigiste* policies that create and hold knowledge in the country that funds them (China) or through special taxes on, for example, extraction industries (Brazil). However, markets on their own will never supply the intellectual capital needed for the volume of innovation required in a modern business. Too few people appreciate that Silicon Valley was built not once but twice by defence department funding via the Defence Advanced Research Projects Agency (DARPA), which spawned industries around both semiconductors and the Internet.

**David Docherty** is Chief Executive of the Council For Industry and Higher Education (CIHE), and Chairman of the Digital Television Group, which is the industry body for digital television in the UK.

**CIHE** is a strategic leadership network of blue-chip companies working with vice chancellors and universities to develop the UK's knowledge-base economy.



## Blue skies: new thinking about the future of higher education

Higher education in Asia Pacific has been experiencing a period of unprecedented change and continues to do so. Economic development and increased affluence have created demand for greater access to higher education and expansion of its systems. Funding, quality assurance, autonomy of institutions, the suitability of graduates to labour market needs, equity of access, international competitiveness and technological readiness are some of the key issues of the day.

It's time to widen the debate. Pearson Asia Pacific is pleased to present a range of bold, new ideas about the future of higher education. Leading experts, including a few less-well known voices, set out their vision for the future.

There is disagreement at times about priorities, but together this diverse collection demonstrates the qualities of higher education and how it can drive both economic growth and better wellbeing in the future.

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