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Editorial

Rankings of Higher Education Institutions: A Critical Review

Introduction

Ranking of higher education institutions has been with us for some time. In the USA, for example, the quality of graduate programmes has been evaluated via staff surveys since the 1920s and *US News and World Report* started publishing 'America's best colleges ranking' in 1983. In the UK ranking tables appeared in the 1990s (Bowden, 2000). However, rankings of higher education have gained prominence in this decade. 'Within only a few years, rankings have become an unavoidable part of academic life, for better or worse' (Ranking Forum of Swiss Universities [RFSU], 2008).

A Serious Issue

Commentators are, at last, taking the idea of ranking seriously and mounting critiques of the process. Why did no one (at least outside the USA) bother with or even take rankings of higher education institutions seriously in the past?

Partly, there was an academic snobbery that belittled such crass activities for their lack of methodological rigour and, frankly, because to engage in ranking was beneath those institutions that considered themselves the élite and it was something not welcomed by those who were not highly ranked.

The main reason was that rankings did not matter. They were not (and in the main are still not) linked to any direct reward or status. Indeed, ranking simply reinforced the taken for granted reputational hierarchies. Furthermore, there was a presumption in many countries that, at core, higher education was the same in any institution and that institutions were not formally ranked. There may have been an unspoken hierarchy known to those who needed to know it, such as researchers seeking out the best department to develop their work (and then the hierarchy was subject based and not institution based).

This all changed with the increasing marketisation of higher education, greater mobility of students and ultimately the recruitment of foreign students, which has gathered pace since 2000. Some countries make very large amounts of money from international students, but it is a cutthroat market and perceived status and reputation are important marketing tools. The arrival of two major global ranking lists which have attracted much

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public attention have provided added impetus to the competition for international students. These are the Shanghai *Academic ranking of world universities* and the *Times Higher Education Supplement* of 'World university rankings' (*Times Higher Education Supplement* [THES], 2007), first published in 2003 and 2004, respectively.

Publicity

For some institutions ranking systems provide good, worldwide free publicity (Yerbury, 2006). Institutions advertise any favourable ranking positions in marketing and promotional materials. Stella and Woodhouse (2006) reported the examples of Swinburne University of Technology referring in advertisements to its fifth position on the Learning and Teaching Performance Fund ranking and Wollongong's display of its five star rating in the *Good Universities Guide* on the University's campus sign. In its particulars for senior post vacancies the University of Sheffield, for example, described itself as follows:

> In *The Times* 'Good university guide 2007' subject tables, 15 of our departments are in the top 10, 36 in the top 20.

> The *Virgin 2007 Alternative Guide to British Universities*, which focuses strongly on the quality of the student experience, rates us very highly.

> In the Quality Assurance Agency Institutional Audit in 2003, the University of Sheffield obtained the highest possible assessment of 'broad confidence'. The University is in joint third place among the Russell Group universities in the National Student Survey.

Notably, the university prioritises rankings over the QAA classification and represents the National Student Survey (NSS) result to imply a high ranking.

Student Choice

International students have vast numbers of potential institutions to choose from and are overwhelmed by information, much of it of a dubious character. Apart from personal recommendation, consulting league table standings provides a simple way of cutting down options. For example, Monash University's reputation among international students was based on rankings, which had been the deciding factor in most students' choice (Australian Universities Quality Agency [AUQA], 2006; Thakur, 2007).

It is argued that home students as well as international students are increasingly using league tables as a basis for making decisions, especially those targeting institutions with a high reputation (Federkil, 2002; Filinov & Ruchkina, 2002; Vaughn, 2002; Roberts & Thomson, 2007). Clarke (undated) echoed this:

> Ironically, while higher education institutions are becoming increasingly obsessed with rankings, evidence from the US and Europe suggests that rankings do not play a large role in most students' choice … . [Of a sample of] 221,897 undergraduates … 11% saw university rankings as a very important factor in their choice of school while 60% found them not at all important. Students who found university rankings to be very important were more likely to be high-achieving, from high-income

families, and from families with college-educated parents. Low-income and first-generation (i.e., children of parents with no higher education experience) college students were least likely to view rankings as important.

Irrespective of how much students actually use rankings as a guide to choice, they would be best advised to explore the discipline strengths of institutions and the approaches to teaching and learning, rather than use the league table short cut. Bowden (2000), in her early critique of British rankings, warned that they do not provide students with the critical information needed to make an informed choice and recently the warden of New College Oxford noted:

> As to the students for whose benefit these league tables are supposedly compiled, they are being had for mugs if they take more than the most minimal notice of them. Only a sceptical reading of prospectuses and visits to watch the place in action will tell them anything worth knowing. (Ryan, 2008)

Purposes

It is claimed that rankings have several purposes (Centre for Higher Education Development [CHE], UNESCO–European Centre for Higher Education [CEPES], Institute for Higher Education Policy [IHEP], 2006). First, as implied above, rankings respond to demands from consumers for easily interpretable information on the standing of higher education institutions, satisfying a need for consumer guidance among the student population 'they help students and their parents make their decisions concerning a fitting place for college education' (RFSU, 2008). This is seen as the primary purpose by many of the creators and publishers of rankings.

Second, rankings stimulate competition among institutions.

Third, rankings help differentiate among different types of institutions and different programmes and disciplines.

Fourth, rankings can also serve as part of a framework for national assessment, accountability and quality assurance in the higher education system and arguably can provide some of the rationale for allocation of funds.

Fifth, linked to a national framework for quality, rankings, it is claimed, serve to generate a debate that contributes to the definition of 'quality' of higher education, 'complementing the rigorous work conducted in the context of quality assessment and review performed by public and independent accrediting agencies' (CHE/CEPES/IHEP, 2006).

However, the link to quality is naive. Space precludes a full analysis, but as will be explored below, the construction of indices by which institutions or departments are ranked is arbitrary, inconsistent and based on convenience measures. The operationalisation of the concept of quality is cursory at best. Harvey and Green's (1993) well-referenced typology suggested five 'definitions' of quality: excellence, consistency, fitness for purpose, value for money, transformation. Rankings are overwhelmingly inadequate attempts to operationalise aspects of excellence. A few have attempted to address value for money. Rankings do not address fitness for purpose, the concept supposedly at the heart of most quality agency approaches. More importantly, the heart of the learning process, transformation, is hardly touched by rankings.

The following exploration questions the ability of rankings to fulfil the purposes, the benefits that are presumed to accrue and, in some cases, the purposes themselves.

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Critiques of ranking

Critiques of rankings come from an array of sources and are based on methodological, pragmatic, moral and philosophical concerns. Ranking of higher education has proved to be highly controversial.

Methodological Concerns

Ranking offers a simplistic approach to evaluation. The critics claim, among other things, that the publishers of ranking lists have applied the metaphor of league tables from the world of sport, which is not applicable to complex systems of higher education and research (Swedish University of Agricultural Sciences Libraries, 2008).

> Rankings in the form of league tables, however, suggest that assessing a university's educational and scientific performance is as easy as assessing a football league. These rankings have been remarkably influential despite the fact that things are not so simple and that there is still contention over the methodologies used in the various ranking lists. (RFSU, 2008)

Selection of Indicators: Validity.   Rankings are not usually based on a single indicator but are compiled using a set of indicators that are combined into a single index. The ranking is based on the composite index. Rankings are criticised because of the selection of indicators that make up the index. Stella and Woodhouse (2006) commented that 'rankings are largely based on what can be measured rather than what is relevant and important'.

This is a validity issue. The index should be the operationalisation of a theoretical concept: what the ranking is supposed to be comparing. An idealised positivistic approach to measurement of complex concepts has six stages (Lazarsfeld *et al.*, 1972). First, a clear statement and definition of what the concept is that is being measured is developed. Second, the different dimensions of the theoretical concept are identified. Third, sets of indicators that represent aspects of each dimension are specified. Fourth, an appropriate indicator or suite of indicators from the range of possible indicators is selected. Fifth, each indicator within each dimension on the basis of a theoretically sound understanding of the importance of the indicator as a measure of the dimension is weighted. Sixth, each dimension of the concept is weighted and the dimensions are combined into a single index.

There is little evidence that this thorough process of theoretical reflection occurs or that indicator selection is rigorous. Rather, indicators are often chosen whimsically by publishers:

> Often it is unclear why a particular definition was chosen, how well it is founded, by whom it was decided and how open and reflective the decision process was. And yet, such ranking lists have considerable influence when used to measure the quality of universities. (RFSU, 2008)

Another determinant of the constituents of an index is data availability. Rankings are based on convenient data or, in the case of global rankings, the data may be available in a wide range of countries. There is a serious problem of available statistical information at the international level. The result is often that concepts such as teaching quality are excluded, even when relevant, because 'obtaining independent, objective measures of teaching quality is difficult, expensive and time-consuming' (Van Dyke, 2005). Even in the research realm

bibliometrics are heavily skewed towards material published in English and other research data, including research output and the promotion of young researchers, is not available internationally (RFSU, 2008).

The Shanghai index, as discussed in detail below, was devised to address the standing of China's research universities and thus had a clear initial purpose. The conceptual base was the notion of research excellence and several indicators were identified. However, it is far from clear how the idiosyncratic mixture of indicators was justified theoretically or why, other than pragmatically, they were combined into the final index in the way they were.

Global listings tend to rely heavily on bibliometrics and other indicators of recognition. The result is considerable distortion, as Altbach (2006) explained:

> Publication counts often stress … databases [such] as those of the Institute for Scientific Information (ISI). These are mainly journals published in English … . Using international recognition such as Nobel Prizes as a proxy for excellence downplays the social sciences and humanities, fields in which Nobels are not awarded, and causes further disadvantages for developing countries and smaller universities around the world. Using citation counts … emphasize[s] material in English and journals that are readily available in the larger academic systems. It is well known, for example, that American scientists mainly cite other Americans and tend to ignore scholarship from other countries. This may artificially boost the ranking of US universities.

Dealing with Missing Values. There are many circumstances when data to be used in compiling ranking scores are missing or unavailable, especially for international comparisons. How this is dealt with can, potentially, distort rankings.

Stella and Woodhouse (2006) noted, for example, that in the THES survey the 'missing value' assigned to institutions when data on academic staff recruited from overseas was not available was 49 out of 100. This has a detrimental effect on the rankings of Australian universities, because the high levels of overseas recruitment are not systematically reported and thus available to the compilers of the THES ranking. Similarly, one of the six dimensions of the Shanghai index is the size of the institution, but if this data is not available the dimension is omitted and the ranking is based on the weighted average of the other dimensions, which also results in distortion.

Weighting of Indicators. Ideally the weighting of indicators should be underpinned by theory. In practice it seems that indicators are assigned weights in a haphazard manner. The arbitrariness in the way weights are allotted is usually not explained by those compiling ranking tables. There is no rationale, for example, as to why THES allots 5% for the proportion of international students. Why not 10% or 2%?

Usher and Savino's (2006) examination of 19 league tables and university ranking systems from around the world revealed arbitrary weightings of indicators.

There is also no consistency in weights between different ranking systems. As Stella and Woodhouse (2006) pointed out, *US News and World Report* (USNWR) gives 16% weight to graduation rate, while *Macleans* gives 2%.

If the choice of weights is subjective and arbitrary, with little or no theoretical or empirical basis, then combining indicators into an index is problematic and, for Stella and Woodhouse (2006, p. 7), the 'honest and rational conclusion from this would be that any overall ranking or clustering is meaningless'.

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Reliability.   Newspaper publishers may like the drama of significant changes in league position year on year but this hardly accurately reflects real changes in institutions, which are rarely so dramatic as to be noticeable within 12 months. Yet, as the RFSU reports, in the THES ranking Osaka, Japan went from position 69 in 2004 to 105 in 2005 and back to 70 in 2006. Ecole Polytechnique, France moved from position 27 in 2004 to 10 in 2005 and to 37 in 2006. The University of Geneva went from not being ranked in 2004, to position 88 in 2005 to position 39 in 2006.

> *Differences like this, which cannot be plausibly explained, point towards major methodological flaws and raise doubts as to the reliability of the ranking list. They may not pose much of a problem for the economic success of the publishing magazine, but they may very well cause major problems for the universities involved.* (RFSU, 2008, original emphasis)

Formula Changes.   Changes in the formula used to compile the index can thus result in substantial changes in league position year on year. Stella and Woodhouse (2006, pp. 7–8) suggested that changing the method and giving new rankings may be a marketing ploy but also reveals a dangerous tendency to exploit the public. For example, *US News* changed its methodology over two decades:

> adding quantifiable variables and shifting the weights assigned to items. Every year, the resulting methodology, by its very construct, resulted in wide swings in the rankings even without a significant change in the quality of the institutions. It became almost impossible to interpret shifts in an institution's rank in terms of change in its relative academic quality.

Statistical Insignificance.   Rankings place institutions in order, often based on minute, statistically insignificant, differences in scores. The National Student Survey (NSS) and its precursor in Australia rank order institutions on various dimensions despite the fact that the standard error of the measures encompasses a large proportion of the listed institutions. In short, the NSS rankings are meaningless. One specialist institution, for example, dropped 60 places from one year to the next with a miniscule change in its score.

As Stella and Woodhouse (2006, p. 9) reported, insignificant difference was an issue raised by Gerhard Casper, President of Stanford University, in a letter to the editor of USNWR:

> Could there not, though, at least be a move toward greater honesty with, and service to, your readers by moving away from the false precision? Could you not do away with rank ordering and overall scores, thus admitting that the method is not nearly that precise and that the difference between #1 and #2—indeed, between #1 and #10—may be statistically insignificant? (Provan & Abercromby, 2000)

Institutional, political and cultural environment

The political, social and cultural context in which institutions exist affect how they operate and what they can do. The degree of independence in running a university, in employing, promoting and dismissing staff differ considerably between different systems. The funding of universities and their ability to acquire new funds vary depending on their legal status and mission and reliance on public budgets (RFSU, 2008).

When making comparisons these contexts need to be borne in mind, but this rarely happens in the construction of ranking lists. For example, among business schools Copenhagen Business School, which is state financed and an integral part of the Danish higher education system and constrained by the requirements of that system, is unfairly compared with private business schools that have all-graduate entry and charge very high fees.

This differing context makes international comparisons theoretically complex. However, international ranking lists tend to ride roughshod over such contextual information. They offer highly condensed comparative information. How useful is this information? And how reliable is it? How reliable can it be if very differently structured universities are compared across very different settings on an international scale (RFSU, 2008)? The greater the diversity, the greater the variability and the less valid are ranking results. President Hasumi Shigehiko of the University of Tokyo explained the university's rationale for not joining the *Asiaweek* survey in 1999 despite being the top-rated institution in the previous two years:

> The quality (of our) education and research cannot be compared with that of other universities. Such characteristics are profoundly individual and extremely difficult to quantify. (*Asiaweek*, 1999)

Focus of Attention

The predominant focus on the whole institution is also problematic given that universities have particular strengths in one field of activity, such as research or teaching, and weaknesses in others. Or they may even be focused on specific areas, while not offering activities in many other areas (RFSU, 2008). Further, the difference between departments within a university may be wide and to treat the institution as a homogeneous mass for ranking purposes is misleading.

> While the wish for a university-wide ranking list is understandable, it is fundamentally unclear whether there is and can be an agreed concept of what exactly a university is, even in a region that is fairly homogeneous politically and culturally. In the absence of such agreement, ranking lists should be restricted to more specific activities such as teaching, research and continuous education and to specific subject areas. (RFSU, 2008)

Competition

Rankings have added to the competition between universities by making public that which was implicitly known or did not previously exist. However, there are those who regard competition between institutions as not necessarily beneficial. Many of those working in higher education, as is discussed in more detail below, consider competition to be unhelpful and deleterious. Competition between institutions, as opposed to rivalry within subject disciplines, is seen as contrived and artificial.

Stella and Woodhouse (2006, p. 16) regarded such ranking-based competition as unhealthy.

> Institutions competing for top rankings may forego cooperation with other institutions, which can be detrimental to the student and the institution as well as higher education in general.
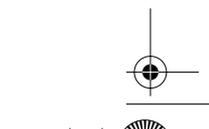
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> It depresses me to witness our President negotiating with an editorial board to change their measure so the public will think we are better than others. (Professor Reuben Kaufman of the University of Alberta, quoted in Provan & Abercromby, 2000)

When the primary aim of rankings is not to respond to the messages that are being provided by improving the learning and research endeavours but to manipulate the data in order to achieve a higher rank (Dill & Soo, 2004) then competition is not just unhealthy but fatally ill.

Developing Countries

Rankings pose particular issues for countries and institutions in the developing world who do not have the research capability of institutions in the developed world (IHEP, 2008b). Thus they are absent from most international ranking lists. The issue, though, is should they join the competition for status and endeavour to figure in global research-based lists or would they be better focusing on teaching, scholarship ad local research issues.

Impact of ranking systems on higher education

Rankings have had an impact far beyond that which their arbitrary design would warrant. That is why they are important and, in their current form, dangerous. A ranking position in a league table is a statistic easily bandied about by politicians and university senior managers, as well as by teachers and union representatives when it suits. Despite their general objection to them departments have, for example, been known to try and leverage more resources against league table position.

Institutions

According to Thakur (2007, p. 89) there is evidence that ranking systems have had an impact on higher education institutions and their stakeholders. For example, one of the top universities in Malaysia, the University of Malaya:

> dropped 80 places in the *THES* rankings without any decline in its real performance due to definitional changes. This resulted in a replacement of the Vice-chancellor and embarrassed the university, which claimed in an advertisement two months shy of the 2005 *THES* results that it strived to be among the 50 best universities by 2020.

Most impacts at the institutional level are rather less dramatic than this example. The IHEP (2008b) contended that much of the institutional impact in the USA is around admissions policy:

> in an effort to improve their rankings, institutions may adjust their admissions criteria, weigh certain factors more heavily than others, and adopt policies such as early admissions. Beyond admissions, some institutions are responding to rankings in other areas, such as strategic planning and personnel decisions.

In the UK, where there is a plague of league tables, institutions are developing policies to try and improve their rankings, to the extent of including such intentions as a goal in strategic

plans. This is not always for the benefit of students or staff and sometimes reflects the desire of a senior team to seem to have had an easily identifiable impact. Stella and Woodhouse (2006) reported similar developments:

> Even those who claim to oppose rankings by media often only pay lip service to anti-ranking campaigns while figuring out how to boost their own positions on the list. In New Zealand, when Victoria University of Wellington went down to number 68 from 38 in media ranking, it chose to include the improvement of its *Asiaweek* ranking among its 'top strategic goals' for the coming decade. Similarly, the Institut Teknologi Bandung in Indonesia has set its appearance in the *THES* ranking as a goal.

Many institutions, directly or indirectly influenced by ranking systems, have developed mission statements to become one of the best or top ranked universities. In Ireland, for example, University College Dublin, according to its President, was 'determined to get into the top 30 of European universities' (Kelly, 2006).

According to Carey (2006) rankings mean a loss of freedom and independence for institutions to control their brand and the terms of their success. He argued that rankings put institutions in a mould and affect institutional diversity, as well as the way institutions operate within and across jurisdictions. In pursuing league table position diversity of institutions is being reduced in a drift to homogeneity.

Governments

It is claimed that rankings have also influenced national governments, particularly in the allocation of funding, quality assessment and efforts to create 'world class' universities (IHEP, 2008a). The Research Assessment Exercise (RAE) in the UK is one example of a ranking that has had an impact on funding, according to Thakur (2007). However, this is somewhat misleading. The RAE was designed to grade research departments on the basis of their output as a basis for research funding. The point was not to produce a ranking list but to grade on a seven point scale and allocate funds accordingly, rewarding the highest rated. Much the same occurred in New Zealand with the introduction of the Performance-based Research Fund (PBRF). Thakur noted though that:

> In China, despite having repeatedly stressed that it does not support ranking exercises, the Chinese government has identified a group of almost 100 universities, including a more select group, that it believed met certain standards of excellence to receive increased funding in an attempt to build a network of 'world-class' universities. (Thakur, 2007, p. 89)

Employers

There is at least anecdotal evidence that employers use ranking lists as part of the selection of graduate recruits. British graduate recruiters, for example, have an implicit hierarchy of UK institutions and in extreme cases will only recruit from certain universities. They have also had a notional set of preferences for international institutions, which the advent of global ranking lists has reinforced. For example:

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> Students at Southampton University could have their chances of getting graduate jobs increased, after the university was named in the top 100 universities in the world … . Marguerite Clark, an international education consultant, said: 'Studies in several countries have found a relationship between the perceived status of the degree-granting institution and employment and earnings outcomes for graduates.' (Gradplus, 2007)

An advice-to-students site in the UK states:

> Before deciding on a University, also consider the University rating in the Guardian Newspaper League Tables. These are useful in making choices between universities because they explain how well that University is doing in comparison to others … . A high placing does mean that generally facilities and grades are above the average compared to other Universities. This can also be important in terms of your career as some blue-chip companies have a preference of [sic] students from some specific Universities. (Merlin Helps Students, 2005)

In the USA a recent survey suggests that the college that a student graduates from is a significant factor in recruitment and is becoming more important. It was the primary factor for 10% of employer respondents (up from 1% in 2007) and fourth most important criterion overall in the 'Top Entry Level Employers Survey' conducted by CollegeGrad.com (2008).

Equity and Access

Clarke (undated) argued that rankings pose a threat to equity. She claimed studies have shown that student selectivity indicators used in some university rankings, such as test scores for entering students and the percentage of applicants that a school accepts:

> threaten higher education access for disadvantaged students by creating incentives for schools to recruit students who will be 'assets' in terms of maintaining or enhancing their position in the rankings … . In order to improve their performance on these measures, schools engage in various strategic activities … [that] can help schools compete more effectively for academically high-achieving students … [but which] tend to have a negative impact on access for low-income students and other underrepresented groups, particularly to the more selective schools.

Van Vught (2007) has argued that competition between institutions worldwide has increased the 'reputation race'. This is very costly for institutions and a significant consequence, in some countries such as the USA, is that advantaged students are able to access the high reputation institutions while less advantaged students miss out.

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Examples of rankings

Rankings are both international and national, the former trying to rank institutions on a worldwide or continental basis. Most rankings, national or international, are of institutions, even if sometimes of a subset of institutions, such as business schools. A few rankings, usually on a national basis, attempt rankings on a subject basis.

Some rankings are based on research indicators, some on teaching, some on the institutional website, some attempt to be comprehensive, some rely on student evaluations. The data for the lists are usually based on existing data, such as national statistics (reported by the institutions to government departments or agencies), internal data from higher education institutions, publication and citation data from such as Web of Science, expert opinions and surveys by stakeholders.

In most cases the rankings are 'unofficial', commissioned and published by commercial organisations including: in the USA, *US News and World Report*, *Washington Monthly*, *Newsweek*, *Forbes*, *Business Week*, *Wall Street Journal*; in Canada, *MacLean's Magazine*; in the UK, *The Times*, *Times Higher Education Supplement*, *Financial Times*, *Guardian*, *Economist*; in Germany, *der Spiegel*, *Fokus*, *Wirtschaftswoche*, *Karriere*; in France, *Le Nouvel Observateur* and *Libération* (RFSU, 2008).

Some unofficial ranking exercises are conducted by units within universities. In Germany the teaching and research ranking lists were established by the German Zentrum für Hochschulentwicklung (CHE) and are published in *Die Zeit*. In The Netherlands there is a research ratings process carried out by scientific academies and the university rectors' conference, as well as the Leiden ranking list by the Centre for Science and Technology Studies (CWTS) at Leiden University. The Shanghai ranking is undertaken by Jiao Tong University in China and the ranking list of doctorate research programmes in the USA by the National Research Council. In Australia there is the *Melbourne Institute index of the international standing of Australian universities* (Williams & Van Dyke, 2005). The ranking of Russia's top 100 universities has been developed by a university outside the country:

> The global dimension of university ranking is confirmed by the fact that if you don't produce your own ranking you should not be surprised that others are going to do it for you. For example, the Huazhong University of Science and Technology in Wuhan, China, published a ranking of Russia's top 100 universities. (Sadlak, 2006)

Sometimes the ranking is based on official studies, such as the Research Assessment Exercise (RAE) in the UK. However, these and similar assessment exercises are not primarily designed to produce rankings. As noted above, the UK RAE was designed to guide funding and through a rating scale for research output. Similarly, the teaching quality assessment scoring system was not intended to be the basis of any 'league tables', although this was an inevitable consequence once the information was in the public domain and is the basis of material used by the various British newspapers in producing ranking tables.

There are many different higher education ranking lists, both national and international. This article cannot possibly address all of them and will focus on the two best-known examples of world rankings: the *Academic ranking of world universities* (ARWU) produced by the Institute of Higher Education, Shanghai Jiao Tong University and the *Times Higher Education Supplement* 'Quacquarelli–Symonds world university rankings' (THES).

What qualifies as a ranking of higher education institutions is a moot point, but the emphasis here is on attempts to provide either comprehensive coverage within a country or attempts to provide a substantial ranking of international institutions. Limited listings on single dimensions, such as those contained in the *Educational rankings annual* (Hattendorf Westney, 2005) are not included.[1]

The Shanghai academic ranking of world universities

The Institute of Higher Education, Shanghai Jiao Tong University, undertook an exercise to determine the gap between Chinese universities and world class research universities. They published the *Academic ranking of world universities* (ARWU) and were surprised by the extent of interest. Indeed, the Shanghai ranking has acquired an existence beyond its intended purpose. It is now used by some as a ranking hierarchy of institutions worldwide and the basis of its compilation is often ignored. It is a list of research universities and is, therefore, exclusive. Institutions are ranked according to their academic or research performance:

> ranking indicators include alumni and staff winning Nobel Prizes and Fields Medals, Highly Cited Researchers in twenty-one broad subject categories, articles published in *Nature* and *Science*, articles indexed in Science Citation Index-Expanded (SCIE) and Social Science Citation Index (SSCI), and academic performance with respect to the size of an institution. (Liu & Cheng, 2005)

The criteria are very particular and specific to research output, with no reference to teaching other than the subsequent research success of alumni (Table 1).

The final scoring and ranking is as follows. For each indicator the highest scoring institution is assigned a score of 100 and other institutions are calculated as a percentage of the top score. The distribution of data for each indicator is examined for any significant distorting effect and standard statistical techniques are used to adjust the indicator if necessary.

Scores for each indicator are weighted to arrive at a final overall score for an institution. The highest scoring institution is assigned a total score of 100 and other institutions are calculated as a percentage of the top total score.

For each indicator, then, an institutions score is a proportion of 100 based on how it performs compared with the top ranked institution on that indicator. The weightings are applied to these proportionate scores on the six dimensions. The weighted scores are then placed in descending order resulting in an institution's rank.[2]

This is an odd operationalisation of university research excellence. Apart from being highly skewed (Altbach, 2006), its construction and weighting is idiosyncratic. An analogy would be like awarding points to football clubs every time their players turn out for their national team.

That this ingenious but contrived ranking should have worldwide currency is baffling. The status afforded the Shanghai ranking suggests that once a 'league table' is published people stop looking at its basis and take the statistical data as somehow objective—especially if the rankings reinforce the status quo prejudices and preconceptions about reputation.

Times Higher Education Supplement '*World university ranking*'

The 'World university ranking' of the THES lists 200 universities based on five qualitative and quantitative indicators. The ranking list was compiled for the first time in 2004. Altogether, analysis has covered over 500 universities. Peer review was used: 5000 academics from five continents, regarded as experts in their field, were asked to nominate leading universities in their fields of expertise (Table 2). Since 2007 the peer reviewers are not permitted to refer to their own institution. In 2004 this peer review accounted for 50% of the total number of points for each university. This dropped to 40% in 2005, when an employer

TABLE 1. Concepts, operationalisation and weighting used in the *Academic ranking of world universities* (2004)

Concept	Operationalisation	Weight (%)
Quality of education (*Alumni*)	Total number of alumni of an institution winning Nobel Prizes and Fields Medals Alumni are defined as those who obtain bachelor, masters or doctoral degrees from the institution. Weighted according to the period when the degree was obtained. (100% for alumni obtaining degrees in 1991–2000, then decreasing by 10% per decade to 10% for alumni obtaining degrees in 1901–1910. If a person obtained more than one degrees from an institution, the institution is considered once only.	10
Quality of faculty (*Award*)	Total number of staff of an institution winning Nobel Prizes in physics, chemistry, medicine or economics and Fields Medals in mathematics. Staff are defined as those who work at an institution at the time of winning the prize. (Weighted 100% for winners in 2001–20003, then reducing by 10% per decade to 10% for winners in 1911–1920.) If a winner is affiliated to more than one institution, each institution is assigned the reciprocal of the number of institutions. For Nobel prizes, if a prize is shared by more than one person weights are set for winners according to their proportion of the prize.	20
Quality of faculty (*HiCi*)	The moist highly cited researchers (based on the Web of Knowledge) in 21 broad subject categories in life sciences, medicine, physical sciences, engineering and social sciences. (See the Thomson Corporation ISI Web of Knowledge website for a definition of categories and detailed procedures.)	20
Research output (*N&S*)	Articles published in Nature and Science in the past five years. To distinguish the order of author affiliation, a weight of 100% is assigned for corresponding author affiliation, 50% for first author affiliation (second author affiliation if the first author affiliation is the same as the corresponding author affiliation), 25% for the next author affiliation, and 10% for all other author affiliations. Only publications of article type are considered.	20
Research output (*SCI*)	Total number of articles indexed by *Science citation index-expanded* and *Social science citation index* in the previous year. Only publications of article type are considered.	20
Size of institution (*Size*)	The total scores of the above five indicators are divided by the number of full-time equivalent academic staff. If the number of academic staff for institutions in a country cannot be obtained, the weighted total scores of the above five indicators is used. In this case the number of full-time equivalent academic staff was obtained for institutions in the USA, China (mainland), Italy, The Netherlands, Sweden, Belgium, etc.	10
Total		100

Adapted from Liu and Cheng (2005). Data source http://ed.sjtu.edu.cn/ranking.htm.
For institutions specialising in the humanities and social sciences, such as the London School of Economics *N&S* is not considered and the *N&S* weighting is allocated to other indicators.

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TABLE 2.   Concept, operationalisation and weights used in the 'World university ranking'

Concept	Operationalisation	Weight (%)	
		2004	2005–2007
International reputation of university	Peer review: 5101 leading scholars evaluate universities in specific research areas.	50	40
International reputation among recruiters	Worldwide interviews with 1471 recruiters within international corporations regarding the 20 universities with the most qualified graduates.		10
International research impact	Number of citations in *Thomson scientific database* (2004–2006) or *Scopus* (2007) per faculty member.	20	20
Teaching quality	Student:faculty ratio.	20	20
International outlook	Number of international students.	5	5
International outlook	Number of international faculty members.	5	5
Total			100

survey was introduced, which was weighted at 10%. The employer survey, of 1471 recruiters within international corporations, asked respondents to identify the 20 best universities from which they prefer to recruit graduates. In 2007 the weightings of the various indicators remained the same but *Scopus* was used instead of *Thomson Scientific* to measure research impact.

The THES listing has been widely criticised, but also widely used. As with the Shanghai ranking, the component parts of the THES ranking are idiosyncratic and the weighting is arbitrary, with no evident basis in theory. There is also a concern about the origin of some of its statistical data, such as the number of international students. Having undertaken research on international students, first-hand experience shows that most institutions in the UK, for example, do not have a good idea of how many international students they have because of various different definitions and arrangements with overseas institutions. Is a franchised student taught solely in the overseas college but awarded a British university degree a British university international student? If the universities do not know and are inconsistent in such accounting one wonders how the THES is able to be so accurate?

The main concern of critics, however, tends to be the peer review judgements of reputation:

> it would seem that 'quality' in higher education, according to the *THES*, is primarily about reputation (as measured by opinion surveys). (Thakur, 2007)

> In the *Times Higher* universe, higher education is primarily about reputation for its own sake, about the aristocratic prestige and power of the universities as an end in itself, and also about making money from foreign students. It is not about teaching and only marginally about research. (Marginson, 2007, pp. 138–9)

> For its part, the THES ranking list relies heavily on subjective evaluations by experts. How valid the latter are and how well they represent the institutions covered are important questions that are left unanswered … . The promise of measuring university quality adequately and precisely across very diverse institutions and for different stakeholders is simply unrealistic. (RFSU, 2008)

Although alluding to the THES survey, Stella and Woodhouse (2006, pp. 8–9) raised some general objections to the use of expert opinion. They noted that a limited knowledge may lead to over- or undervaluation. Some well-established academicians may not accept the work of others and this may bias opinion.

> This all makes the reliability, validity and objectivity of such methods questionable, and reliance on expert opinion (not professional judgement) is a flaw, especially in the light of the fact that expert opinions could be grossly inappropriate. Little scientific justification exists for continuing to rely on expert opinion.

While these criticisms are well made, there is an irony that an agency that conducts audits based on expert opinion should have such a poor view of that means of passing judgement.

Controlling the ranking phenomenon

In response to growing consumer demand and also to growing criticism of the existing approaches to and methodological problems of ranking in higher education, UNESCO

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initiated the International Ranking Expert Group (IREG). The group was founded in 2004 by the UNESCO European Centre for Higher Education (UNESCO-CEPES) and the Institute for Higher Education Policy in Washington, DC. In May 2006, at a meeting attended by 47 people from a dozen countries, the IREG adopted a short document containing principles of quality and good practice called the *Berlin principles on ranking of higher education institutions* (CHE/CEPES/IHEP, 2006). The purpose of the principles is to 'promote a system of continuous improvement and refinement of the methodologies used to conduct these rankings' (IHEP, 2008).

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The Berlin principles

The *Berlin principles*, which are frequently cited, state that given the 'global' development of rankings of higher education institutions 'it is important that those producing rankings and league tables hold themselves accountable for quality in their own data collection, methodology, and dissemination'. The following are the main points in the principles.

Rankings and league tables should:

1. Be one of a number of diverse approaches to the assessment of higher education inputs, processes, and outputs …
2. Be clear about their purpose and their target groups …
3. Recognize the diversity of institutions and take the different missions and goals of institutions into account …
4. Provide clarity about the range of information sources for rankings and the messages each source generates …
5. Specify the linguistic, cultural, economic, and historical contexts of the educational systems being ranked …
6. Be transparent regarding the methodology used for creating the rankings …
7. Choose indicators according to their relevance and validity.
8. Measure outcomes in preference to inputs whenever possible …
9. Make the weights assigned to different indicators (if used) prominent and limit changes to them …
10. Pay due attention to ethical standards and the good practice recommendations articulated in these Principles …
11. Use audited and verifiable data whenever possible.
12. Include data that are collected with proper procedures for scientific data collection …
13. Apply measures of quality assurance to ranking processes themselves …
14. Apply organizational measures that enhance the credibility of rankings …
15. Provide consumers with a clear understanding of all of the factors used to develop a ranking, and offer them a choice in how rankings are displayed …
16. Be compiled in a way that eliminates or reduces errors in original data, and be organized and published in a way that errors and faults can be corrected. (CHE/CEPES/IHEP, 2006)

Self-regulation

The *Berlin principles* are a meta-set of criteria. In essence, this is an attempt at self-regulation. Those involved in their construction may have a genuine interest and expertise in making the ranking process more transparent. Both UNESCO-CEPES and IHEP, according to Jamie Merisotis, president of the IHEP, 'are neutral on ranking' (Bollag, 2006).

Jan Sadlak, director of the Unesco center in Bucharest, added that the principles are meant to improve what many academic leaders see as the superficial and capricious nature of rankings. 'If we're going to have to live with it, let's do it in the least destructive way'. (Bollag, 2006)

Indeed, the IHEP, in their New Agenda for College and University Ranking project in the USA, focus on how rankings impact on the decision-making structures of higher education institutions and whether federal and state policy-makers take rankings into account in developing their own assessments of higher education institutions (IHEP, 2008a). CHE, also a key player in the *Berlin principles*, provided analyses in Germany that limit the kind of ranking that can be done (see above). However, despite this well-intentioned expertise and research, others have pointed out that the *Berlin principles* were developed in a non-inclusive manner. Furthermore, they make positivist assumptions about the possibility of objectivity and transparency.

This self-regulatory process has been further developed. On 18 April 2008 the IREG agreed to the creation of the IREG International Observatory on Academic Ranking and Excellence (2008). The proposed Observatory has set for itself wide aims and a huge agenda. This includes:

- the collective representation of the ranking community;
- the communication and exchange of professional information;
- improving the standards, theory and practice in line with recommendations formulated in the *Berlin principles*;
- initiating research and informational activities as well as training related to ranking and other aspects of academic excellence;
- analysing the impact of ranking on access, recruitment trends and practices (in 'research excellence', teaching and services to the community) at institutional, regional/national and international levels;
- undertaking analyses of the role of ranking on institutional behaviour;
- enhancing public awareness and understanding of academic work;
- an evaluation of institutional performance, ranking and forms of academic excellence;
- developing conceptual and technical analyses of various aspects of 'academic excellence' aiming at a better understanding of excellence in research and teaching;
- offering an IREG recognition service—reviewing and assessment of a given ranking, based on methodological criteria and deontological standards presented in the *Berlin principles.*

And who is going to do all this? An Executive Committee has been established with members from the organisational and individual membership of IREG. The IHEP, located in Washington, DC, and UNESCO-CEPES are, as founding members of IREG, represented ex officio. The legal location of the IREG Observatory is Warsaw, Poland, and the City of Warsaw has provided facilities and a small secretariat, augmented by secretarial assistance from the Perspektywy Education Foundation. The Fourth IREG General Meeting will take place 15–17 June 2009 in Astana, Kazakhstan, upon invitation of the Independent Kazakhstan Quality Assurance Agency in Education (IREG International Observatory on Academic Ranking and Excellence, 2008).

Willing Involvement

Some universities have become so concerned about rankings that they have refused to participate and have withheld information used in constructing rankings. For example, in

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1999 the University of Tokyo and 19 mainland Chinese universities, including Peking
University, as well as 15 other institutions, declined to provide data to *Asiaweek* magazine
for its annual ranking of universities in the Asia-Pacific region. *Asiaweek* abandoned its
ranking shortly thereafter.

5   Recently a group of 11 institutions in Canada indicated that they would no longer partici-
pate in *Maclean's* magazine annual ranking of universities in that country (Birchard, 2006).
Maclean's response was that it would continue to rank these institutions using data from
other public sources. This shows that given the large amount of data that is collected and
made public by governments, the willing participation of institutions in rankings is no
10   longer necessary.

Stakeholder concerns

15   Despite the *Berlin principles* there are widespread concerns about the ranking of higher
education from a range of stakeholders: ministers, quality assurance agencies, staff groups
and student bodies.

Ministers

20
The Organisation for Economic Co-operation and Development (OECD) held an informal
ministerial meeting in Tokyo, 11–12 January 2008. The meeting welcomed the *Berlin princi-
ples* as 'a possible framework for the conduct and development of rankings of higher
education institutions'. They underlined that 'rankings and international "league tables"
25   are only as valid as the information on which they are based and can lead to distortions in
institutional behaviour'. The Ministers, somewhat naively:

> agreed that it was less problematic to evaluate research outputs, as the immediate
> outcomes of institutional performance, than educational outcomes that, ideally,
30   > would incorporate aspects of labour-market and social outcomes which become
> apparent only in the subsequent life of graduates.

However, they 'considered that the bias in the information base of existing rankings
towards research outcomes could detract from efforts to improve educational performance'
35   (OECD, 2008).

Quality Agencies

Stella and Woodhouse (2006) of the Australian Universities Quality Agency (AUQA) put
40   the quality agency view. The central concern is that ranking contravenes a fitness for
purpose approach, which at least in theory is at the heart of most quality agency
approaches. Fitness for purpose implies that institutions have different purposes and are
judged against those criteria while ranking establishes and judges against a set of generic
criteria. The generic criteria approach, they claim, is 'also harmful to institutional diversity'
45   (Stella & Woodhouse, 2006, p. 10). Furthermore, of course, there is 'no clear or universally-
agreed measure of quality in higher education'. Even if such a set of criteria existed, judging
institutions against them would only be feasible in small systems because of the time it
would take to collect and analyse.

> Since ranking would also imply that the whole system has to be covered within a time frame, it would be futile to attempt ranking in a large and complex system. At the most it can be done only at a superficial level, akin to the methodology followed by the media. Consequently, lack of validation of self-reported data, inconsistency in terminologies, lack of peer review, inability to consider institutional diversities, etc. would become unavoidable, thus rendering the outcome of the whole process useless. (Stella & Woodhouse, 2006, p. 10)

Academics

A meeting of the Higher Education and Research Standing Committee in Oslo expressed its deep concern about rankings. They asserted that 'the steering of higher education should not be done on the basis of ranking'. They objected on several fronts. First, ranking is 'irreconcilable with the principle of equity and the educational missions which meet the different aspirations of students'. Ranking, they claimed, leads to 'erroneous misconceptions', labelling some institutions as bad and creating élites. This they rejected because 'different higher education institutions operate in different cultural, historical and societal settings' (Education International, 2006, p. 1). Furthermore, rankings encourage élite institutions to raise fees, which is also incompatible with equity. Indeed, rankings are intrinsically linked to the commercialisation of higher education, evident in the *Berlin principles*, which they objected to as they were determined exclusively without reference to many stakeholder groups, not least representatives of academic staff. More important is their objection that:

> The pressures of the outcome of ranking systems also deviates the attention of leaders of higher education institutions from the students and the genuine purpose and mission of higher education, enhancing competition between institutions. In this sense, there is a real risk that higher education institutions focus on efforts to climb up the ranking ladder, ignoring their mission in developing and disseminating knowledge for the advancement of society. Furthermore, ranking places too much emphasis on institutions and ignores study programmes. (Education International, 2006, p. 1)

Students

The European Students' Union (ESU, formerly ESIB) is also concerned about the impact rankings may have on the education process and the creation of élitist institutions. The ESU (2008) is of the view that ranking systems are not really there to inform students (as is a supposed key purpose) but are intended to create a reputational hierarchy to attract 'the best talents in the world'. Further, rankings, in principle, 'do not acknowledge cultural diversity and holistic interpretations of the purpose of education systems' and the 'multiple purposes of higher education cannot and should not be simplified with either general quantitative or qualitative indicators as exemplified in ranking systems'. The ESU noted that 'rankings push governments to implement policies aimed at letting universities excel on a small set of indicators used in the rankings'. Overall, the ESU 'opposes rankings of higher education institutions, faculties or programs in principle'. Instead, it calls for information systems to be set up that acknowledge 'the diversity and multiple purposes of higher education' and that 'can become a useful tool for student choice'.

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Threat

In conclusion, rankings provide a real threat to quality processes. The simplistic processes and idiosyncratic construction of league tables appear to have more popular appeal and even credibility amongst a range of stakeholders, including political decision-makers, than the meticulous hard work of quality agencies.

Among the many detrimental consequences associated with university rankings, the fundamental problem is that they do not appear to 'reward' teaching. In particular, contrary to some recent developments in quality assurance that focus on enhancing the student experience of learning, rankings place a potential brake on the development of critical trans-formed learners. Developing a critical education is not a way to move up league tables.

To take a football analogy, there are no points won from having a good youth policy. The points come from the stars on the pitch. We all know, though, that without a good youth policy clubs have to buy in the future stars or, if they don't have the money, they start to decline. The point, though, is that an overconcern to move up ranking tables will lead to a focus on those aspects that get included in the ranking methodology—in the main these do not include developing transformative learning.

Notes

[1] The *Educational rankings annual*, published annually it seems between 1990 and 2006, contains over 4600 lists of rankings, but they are idiosyncratic lists, for example the 2000 annual included the 10 'Top [US] law schools with the worst proportion of women students' sourced from a book, Top recruiters for liberal arts jobs for 1989–1990 bachelor degree recipients [US] sourced from a magazine article. North America's first [by date of opening] ten public libraries sourced from a magazine, Highest total book reviews among schools and colleges [US] sourced from a journal. Highest total papers among schools and colleges from a journal article based on a sample of 57 institutions!

[2] The Shanghai Jiao Tong University also produces a ranking list which groups universities into five broad fields of research: natural sciences and mathematics; engineering sciences, technical sciences and information technology; life sciences and agriculture; clinical medicine and pharmacy; social sciences. Except for a few minor changes, the choice of indicators is similar to that used in the general ranking list (see Table 2).

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