
Academic League Tables: Are they Useful?

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Abstract

In this paper I assess four surveys that purport to rank the top universities worldwide. Three of them have sought measures that indicate productivity and esteem, and not surprisingly, all have produced different rankings. The only common conclusion is that Harvard University is probably at the top. The next twenty to thirty ranks identify institutions that fall somewhere near the top, but their position varies within, across and outside the surveys each year. This variance suggests that the indicators chosen, the weighting given to them and statistical processing of the data are deficient, and that such an enterprise is therefore in its early stages. Yet the prominence that they have received suggests that such rankings may be useful rather than just a curiosity. The issue is to whom are they useful, in what form and for what purpose? Those questions are difficult to answer at present given the primitive methods used in the current surveys. To attempt an answer I compare the indicators, their measurements and weighting, and then look at examples of rankings done on a national level to demonstrate that assessments of academic merit need to be made on much more clearly defined measures and for much more clearly specified purposes. It may be concluded that international rankings are at a primitive stage at present and should be regarded with skepticism.

Introduction

One of the most controversial steps in higher education recently has been the release of studies that purport to indicate relative rankings of universities worldwide. The movement started with a scale developed by Shanghai's Jiao Tong University in 2003. Its Institute of Higher Education compiled the table published as *Academic Rankings of World Universities*, ostensibly to indicate the position of Chinese universities relative to the rest of the world. Three thousand universities worldwide were surveyed and the final list was reduced to five hundred. The list may have very well also served to indicate suitable overseas choices for aspiring Chinese post-graduate students. Every year thousands of such students leave China for doctoral and other studies in the US, Canada, England and Australia and elsewhere. The list, commonly referred to as the ARWU, has been updated each year. The latest version is one for the year 2008.

The idea caught on quickly and the *Times Higher Education Supplement* followed with its attempt at determining the top two hundred universities one year later (the survey hereafter referred to as the THES-QS¹). It too has published rankings in each successive year. In 2006, the magazine *Newsweek* published a ranking based on modified data from the ARWU and THES surveys. Another group calling itself Webometrics (part of a Spanish scientific research body, CSIC), surveyed 15,000 universities world wide and drew up a ranking of what it considered the top 4,000, exceeding the ARWU by 3,500 and the THES by

3,800. This one was based entirely on the degree of web exposure and data available on universities' websites.

The reception accorded the rankings has been, perhaps predictably, extremely varied. Universities placed high on the first two rankings claimed significant boasting rights over their local, national and international rivals. In many cases their responses revealed, perhaps unintentionally, a degree of surprise. If put into plain speech, they might sound something like: "I didn't know we were so good". Humility was rarely seen, except by those universities high on the list, and then it barely tempered their self-congratulations. Statements from university heads that express such views can be readily found on the THES-QS websites.

More insidious though was the use of the tables by ambitious or humiliated rival vice-chancellors and university presidents to drive their staff to greater research efforts in order to increase their rank in the tables. The prominent focus on research made it clear that progress up the ladder was to be achieved by publishing in journals surveyed by the citations indices combed by the surveys. The tables also provided disgruntled staff at some universities with the opportunity to publicly dispute the ranking of their own institution on Internet sites, claiming it should be much lower. Universities also reacted to the lists by criticizing those tables according them a low rank and praising those that placed their institution higher.

Above all, the rankings have put much pressure on academics, who had in any case been feeling the pressures of public accountability and governmental funding cut-backs for the last twenty years. This pressure has led to many institutions starting to devote all their efforts to raising their rank by means of intensive research and publishing. Vice-chancellors and presidents of successful universities suddenly found an outside market for their perceived success, with previously unheard-of salary scales attached.

There have been many general criticisms published on websites, notably claiming an English language bias as well as a Euro-North American cultural bias and more plausibly, a science bias. Research productivity is clearly paradigmatic. It could be argued that it was measured twice in the THES-QS, (in publications and in peer review since the latter reflect the former). Excellence in teaching was ignored. More serious criticisms of both major rankings can be made. These will be discussed below. The key difference between the tables was the use of different indicators, methods of analysis and weightings. Extraordinary anomalies occurred, perhaps the most notable being the case of the National University of Malaysia, which attained a high rank (89th) in 2004 THES-QS based on the perceived numbers of its international students (this being a significant indicator in the THES-QS ranking). The result was amended a year later (to 169th) when it was realized that the "international students" were only Malaysians from different ethnic groups (Chinese and Indians). The most surprising result yet was the ARWU inclusion of its own university in the survey and placing it in the top 40 of all universities worldwide in 2003. This occurred in its initial tables, but it has since been deleted. This vitiated the 2003 rankings somewhat.

The most important question raised by the worldwide ranking is that of their usefulness. The only way to conceivably answer this question is to ask whether the variables chosen to measure performance are comparable across countries and whether the methods of computing their relative values and summing them are reliable. What is clear is that this kind of enterprise is still very much at an early stage of development. The indicators chosen and the weightings given to them are now discussed

¹ The full name of the survey includes the name of a company, Quacquarelli Symonds (QS), which conducted the research in conjunction with the THES. QS is an international company specializing in providing placement and exchange services for aspiring students at all levels.

Methods of ranking

There was little uniformity in the indicators chosen for the surveys though most gave high values to research output as measured by selected international citations indices and the weighting assigned to them. The THES-QS table relied most heavily on peer review, though the selection and number of reviewers was perhaps a weak point. The indicators used in each table and their weightings have been tweaked in each successive publication of the major reviews.

ARWU

The ARWU table's indicators used currently² are "academic or research performance, including alumni and staff winning Nobel Prizes and Fields Medals, highly cited researchers, articles published in Nature and Science, articles indexed in major citation indices, and the per capita academic performance of an institution". Scores for each indicator are weighted and summed to derive a final overall score for an institution. The highest scoring institution in each indicator is assigned a score of 100, and other institutions are calculated as a percentage of that top score. An institution's rank is determined by the number of institutions that get scores above it. More recently the ARWU tables have been listed serially only to the first 100 places. Thereafter universities are listed in groups of fifty with no precedence given to any one institution in the group.

The ARWU criteria, indicators and weights are given in the table following.

Table 1. Criteria, indicators and their weighting as used in the ARWU ranking

Criteria	Indicator	Code	Weight
Quality of Education	Alumni of an institution winning Nobel Prizes and Fields Medals	Alumni	10%
Quality of Faculty	Staff of an institution winning Nobel Prizes and Fields Medals	Award	20%
	Highly cited researchers in 21 broad subject categories	HiCi	20%
Research output	Articles published in Nature and Science*	N&S	20%
	Articles in Science Citation Index-expanded, Social Science Citation Index in 2007	SCI	20%
Size of Institution	Academic performance with respect to the size of an institution	Size	10%
Total			100%

² As of November 2008. The latest ARWU list (its sixth) is for 2008.

THES-QS

The most recent version of the THES-QS used the following indicators: peer review (40%) based on 6,354 reviewers over three years of accumulated reviews; recruiter review (10%); international faculty score (5%); international students score (5%); faculty/student ratio (20%); and faculty citations (20%). In each category the highest score was accorded 100 points and successive weights were determined by calculating z-scores (a method of normalizing based on standard deviations from the mean), rather than rank ordering. This can be regarded as statistically more reliable form of normalizing than the simple rankings used in the ARWU calculations. This procedure was adopted only in the latest THES-QS survey. The THES-QS differed from the ARWU significantly in producing rankings for all the indicators it used, and further, of the top 50 universities worldwide in what it calls “the principal areas of academic life”. These it believes to be: science, social science, technology, biomedicine, and arts/humanities.

Webometrics

Webometrics based its survey solely on what it called global performance and visibility of universities in 191 countries through their web pages. This organization does not claim to identify the world’s best universities, but rather “summarizes the global performance of the University, provides information for candidate students and scholars, and reflects the commitment to the dissemination of scientific knowledge”. The indicators it used and their relative values are seen in the following table.

Table 2. Indicators and their weighting used in the Webometrics rankings

Size	Web size	20%
Research output	Rich files	15%
Citations	(Google) Scholar	15%
Impact	(Link) Visibility	50%
		100%

Size referred to the number of web pages recovered from four search engines: Google, Yahoo, Live Search and Exalead. *Rich files* referred to files recovered from Adobe (tagged as .pdf & .ps) and Microsoft (.doc & .ppt) documents, and subsequently examined for their academic relevance. Google Scholar provided papers and citations “for each academic domain”. *Visibility* was determined “by the number of external links received by a site” and was obtained from Google, Yahoo and Exalead searches. The data are updated twice a year. The Webometrics’ use of web information and citations probably captures information that the international citation indices fail to acknowledge in their focus on books and journals only. As will be shown in Table 3 below, this ranking reveals the enormous productivity, IT awareness of and website use by North American universities. Of the top 40, all but 8 are in the USA, which also captures the top 26 places. The *size* category of the Webometrics rankings, however, may well be distorted by differences in scripts representing the language of non alphabetic writing systems as found in universities’ websites in Japan, China, and other nations.

The three rankings publicize the positions of all ranked universities under each indicator. Most of their methodology is also publicly accessible, particularly in the case of the ARWU ranking. In all cases

the indicators are combined to give the final position of each university on the tables. This allows cross comparisons of scores on various indicators.

Newsweek

The magazine Newsweek published an international ranking in 2006. It did no survey of its own, but rather took the scores on indicators across both the ARWU and THES-QS surveys in 2005 and compiled a new ranking from them. The sources, indicators and weighting are seen in the table following.

Table 3. Sources, indicators and weightings used by the Newsweek ranking*

Source	Indicator	Weight
Research output: From ARWU	Highly cited researchers in 21 broad subject categories	16.6%
	Articles published in Nature and Science	16.6%
	Articles in Science Citation Index-expanded, Social Science Citation Index and Arts and Humanities Index	16.6%
Data from THES-QS	Percentage of international staff	10%
	Percentage of international students	10%
	Citations per faculty member	10%
	Faculty/Student ratio	10%
Universities' own publicity	Number of volumes	10%

*Compiled by the author from information in Newsweek: International Editions Aug.13th, 2008.

The significant indicator that Newsweek added to these scores was the inclusion of library holdings in numbers of volumes.

Summary of the Rankings

The following table shows the latest rankings that each survey considers to represent the top 50 universities. The dates of publication vary, but my intention here is to show each survey's result based on its current methodology. The anomalous rankings of the Webometrics survey can be seen immediately, especially in the low ranking accorded to the major English universities, which clearly do not use the Web to anything like the extent of North American universities. The predominance of US universities overall is also apparent, but less so in the THES-QS survey, which gives 27 places to non-US institutions, and in Newsweek, which places 21 non-US universities in its top 50. The dependence of the Newsweek ranking on the THES-QS is apparent, but to a lesser extent than might have been anticipated.

The number of universities found at least once in the four lists is 85³. For the list of these institutions, see Appendix 1. A further list of just 24 universities can be compiled from institutions common to the top 50 places in each of the ARWU, THES-QS and Newsweek tables. These are seen in Table 5⁴. They may

³ Because Webometrics rankings are included, a number of us universities that do not appear elsewhere gain a place in this list.

Table 4. Rankings by the four major ranking bodies based on data publicly available on their websites

Rank	ARWU (2008)	THES-QS* (2008)	Newsweek (2005)	Webometrics (2008)
1	Harvard	Harvard	Harvard	MIT
2	Stanford	Yale	Stanford	Harvard
3	UC Berkeley	Cambridge	Yale	Stanford
4	Cambridge	Oxford	Cal. Inst. Tech	UC Berkeley
5	MIT	Cal. Inst. Tech	UC Berkeley	Penn State
6	Cal. Inst. Tech	Imperial.Coll. London	Cambridge	Michigan
7	Columbia	University Coll.London	MIT	Cornell
8	Princeton	Chicago=*	Oxford	Univ. Minnesota
9	Chicago	MIT	UC San Francisco	Wisconsin
10	Oxford	Columbia	Columbia	Texas at Austin
11	Yale	Univ. of .Pennsylvania	Michigan	Illinois Urbana Ch
12	Cornell	Princeton	UCLA	Univ. of Pennsylvania
13	UCLA	Duke =	Univ. of Pennsylvania	U Washington
14	UC San Diego	Johns Hopkins U =	Duke	Carnegie Mellon
15	Univ. of Pennsylvania	Cornell	Princeton	Columbia
16	U Washington, Seattle	Aust Nat. Univ	Tokyo Univ.	Purdue
17	Wisconsin	Stanford	Imperial.Coll.London	UCLA
18	UC San Francisco	Michigan	Toronto	Univ Florida
19	Tokyo	Tokyo	Cornell	Chicago
20	Johns Hopkins	McGill	Chicago	Maryland
21	Michigan	Carnegie Mellon	ETH Zurich***	Arizona
22	Univ Coll. London	Kings College London	U Washington	Texas A&M
23	Kyoto	Edinburgh	UC San Diego	Georgia Inst Tech
24	ETH Zurich =	ETH Zurich	Johns Hopkins U	Virginia Poly
25	Toronto=	Kyoto Univ	Univ Coll. London	Princeton
26	Illinois	Hong Kong	ETH Lausanne	Cambridge
27	Imperial Coll. London	Brown	Texas Austin	Michigan State
28	Minnesota	Ecole Normal Superieure	Wisconsin	Toronto
29	Washington St Louis	Manchester	Kyoto Univ.	N.Carolina Chapel Hill
30	NorthwesternUniversity	Nat. Univ. Singapore =	Minnesota Twin cities	Rutgers
31	NYU	UCLA =	Univ. Brit Columbia =	New YorkUniversity=
32	Duke	Bristol	Geneva	ETH Zurich
33	Rockefeller=	Northwestern	Wash. Univ. St Louis	Indiana
34	Colorado Boulder	Ecole Polytechnique =	LSE	UC San Diego
35	Univ. British Columbia	Univ. British Columbia =	Northwestern	Univ Southern Calif.
36	UC Santa Barbara	UC Berkeley	NUS	North Carolina state
37	Maryland Coll. park	Sydney	Pittsburg	Duke
38	North Carolina	Melbourne	Aust. Nat. Univ.	Colorado Boulder
39	Texas Austin	Hong Kong U Sci. & Tech	New YorkUniversity=	Johns Hopkins U
40	Manchester	New YorkUniversity=	Penn State	Cal Inst. Tech
41	Univ.Texas Med Center	Toronto	UNC Chapel Hill	Pittsburg
42	Pennsylvania State=	Chinese U of Hong Kong	McGill	Aust Nat. Univ.
43	Paris 6=	Queensland	Ecole Poly	Helsinki
44	Vanderbilt=	Osaka	Basel	Yale
45	Copenhagen	University of NSW (Aus)	Maryland	Univ Virginia
46	UC Irvine	Boston U	ETH Zurich	UC Davis
47	Utrecht	Monash (Aust)	Edinburgh	Oxford
48	UC Davis	Copenhagen	Illinois Urbana Ch	Washington St Louis
49	Paris 11	Trinity College Dublin	Bristol	Univ. Brit. Columbia =
50	Univ Southern Calif.	Ecole Poly. Lausanne**	Sydney	Calgary

* All tables ranked those universities followed by = as equal in rank within their group

** Rank shared with Beijing University and Seoul National University

*** ETH Zurich is the Swiss Federal Technical Institute in Zurich

Table 5. Alphabetical list of the 24 universities common to the top 50 ranks of three main worldwide rankings excluding the Webometrics ranking

University of California, Berkeley
University of British Columbia
California Institute of Technology
Cambridge University
University of Chicago
Columbia University
Cornell University
Duke University
ETH Zurich (Switzerland)
Harvard University
Imperial College London
Johns Hopkins University
Kyoto University
University of California, Los Angeles
Massachusetts Institute of Technology
University of Michigan
New York University
Oxford University
University of Pennsylvania
Princeton University
Stanford University
University of Tokyo
University of Toronto
Yale University

be taken as perhaps the most reliable candidates for the top universities in the world, if one takes each list at face validity.

Some criticism of the rankings has been mentioned above. In those cases it was based on what might be termed global factors (such as the imputed cultural, regional and discipline bias). More trenchant criticism had been focused on the indicators chosen and their relative weightings, including the methods of data analysis (Holmes, 2006; Marginson, 2006; Florian, 2007; Ioannidis et al., 2007). These are now considered.

Analysis of indicators used in the rankings:

ARWU

The general consensus in the university world is that the ARWU ranking is the most reliable, perhaps because of its dominant reliance on citations. This has been seen as a flaw however. Critics have noted that it says nothing about anything other than research in universities (Holmes, 2006). The indicators chosen have been widely criticized for the weighting given to Nobel laureates and Fields Medal recipients. Universities gain points for both having educated and/or employed Nobel Prize winners for the last 100 years. As well, there are 3 scientific categories in which Nobel Prizes are awarded (Physics, Chemistry and Medicine or Physiology) compared with 2 categories in the social sciences and humanities (Economics and

⁴ The Webometrics survey is not considered because of its focus purely on webpage prominence.

Literature). It is rare that the prize for literature is awarded to an academic and it might well be disputed that a university could claim any credit for producing a literature laureate. It is further the case that multiple Nobel awards may be given in any one category of the sciences, such as happened this year (2008) with three laureates each in Physics, Medicine and Chemistry, making nine Science laureates to one each in Economics and Literature. Fields medals are awarded every four years for outstanding work in mathematics. Two, three or four medals may be given. Taking Nobel prizes and Fields Medals together, the sciences have a much higher representation in the awards category, than the humanities. As for citations, it is also more usual to have multiple authors of papers in sciences than in the humanities, and since it is names rather than papers that are cited, the sciences appear to gain an immediate advantage in the productivity indicators. Perhaps it is recognition of this apparent anomaly that the ARWU gives a weighting of two for articles in the social sciences and humanities. This weighting is quite arbitrary however.

The most serious challenge to the ARWU tables is to be found in a recent paper by Florian (2007), which claims that the 2005 rankings cannot be reproduced using the data publicly available for the three main citation sources. Florian's research showed that taking the total citations for any one university in the top 500 and computing its score according to the published methodology yields results inconsistent with the ranking given to it by ARWU. This is a major challenge to the rankings, at least requiring methodological clarification by the authors of ARWU. As might be expected given the indicators used in this survey, there is little of the variation found in the THES-QS rankings. This suggests that variation in the latter ranking is a product of the peer review, a point taken up below.

THES-QS

The main challenges to the THES-QS rankings are both global and specific. The global criticism concerns the apparent inconsistency in rankings of specific universities year by year. Prior to the most recent table, weighting for indicators were not moderated, so the difference between any two successive universities on the table might be great or small, but not obvious. It is difficult to believe that the variation shown from year to year can reflect any real changes in any of the institutions. It is almost certainly due to changes in methodology, a factor that casts doubt on the whole enterprise. The table below (6) shows this variance over the five years in the THES-QS rankings.

Apart from the case of Harvard, surprising variation can be seen in the scores of all other universities even at the top. Particularly discrepant values can be seen for MIT, Duke University and University College London. How credible is this even given the change in statistical methods employed in the last 2 years? The degree of variation increases as the list lengthens.

Specific criticisms can be directed to the THES-QS peer review, internationalism and employer review indicators. THES-QS has used peer review in its last three years of publications, drawing on new reviewers each year and incorporating the reviewers' assessments from the previous years. By 2008, 6,354 peer assessments had been collected. More than 90% of the reviews have come from academics in Europe, North America and Asia. Reviewers have been asked to nominate up to 30 universities they considered to be the best in their field or discipline (12 disciplines were chosen for the reviews). However, Holmes (2006) notes the strong representation of the sciences in the chosen disciplines, pointing out for instance, that biomedicine had the same representation as all of the Social Sciences. It must be seriously questioned whether academics anywhere can objectively nominate 30 other universities, especially those outside of their own country. It would be expected that beyond the few of which anyone had reliable opinions, the next ones chosen would be places where the reviewer knew workers in their field from journal reading, reviewing and attending conferences, or from sharing a nationality or locality. Following this point further, it might be argued that the better way to do a peer review is focus on peers (persons), not on university departments, or perhaps take surveys of both.

Table 6. Variation in the scores of universities at the top of THES-QS rankings over 5 years with the raw mean of each one's rank.

2008	2007	2006	2005	2004	UNIVERSITY	LOW	MEAN	HIGH	VARIANCE*
1	1	1	1	1	Harvard University	1	1.0	1	0
3	2=	2	3	6	University of Cambridge	2	3.2	6	0.8
4	2=	3	4	5	University of Oxford	2	3.6	5	-0.4
2	2=	4=	7	8	Yale University	2	4.6	8	1.4
9	10	4=	2	3	Mass. Inst. of Tech. (MIT)	2	5.6	10	2.4
5	7=	7	8	4	California Inst. of Technology	5	6.2	7	-4.2
12	6	10	9	9	Princeton University	6	9.2	12	-3.2
6	5	9	13	14	Imperial College London	5	9.4	14	-0.6
17	19	6	5	7	Stanford University	5	10.8	19	3.2
8	7=	11	17	13	University of Chicago	8	11.2	17	-2.2
10	11	12	20	19	Columbia University	10	14.4	20	-4.4
19	17	19=	16	12	University of Tokyo	12	16.6	19	-9.6
15	20=	15	14	23	Cornell University	14	17.4	23	-8.4
16	16	16	23	16	Australian National University	16	17.4	23	-10.4
13=	13	13	11	52	Duke University	11	20.4	52	20.6
7	9	25	28	34	University College London	7	20.6	34	6.4
13=	15	23	27	25	Johns Hopkins University	13	20.6	27	-6.6
11	14	26	32	28	University of Pennsylvania	11	22.2	32	-1.2
18	38=	29	36	31	University of Michigan	18	30.4	38	-10.4

* Variance here is expressed as a raw value. A positive value indicates that the variance exceeds the value of the mean. Table and calculations formulated and constructed by the author from public data sources.

It can be fairly said, nonetheless, that most academics would regard peer review as one of the best ways of making the comparisons that THES-QS sought. Few, however, would accept that worldwide comparisons could be validly achieved using the limited sampling techniques reported in THES-QS. The much higher-than-would-be-expected gains and declines in some universities' positions in the rankings could be the consequence of an inadequate and unrepresentative reviewer sampling by the Quacquarelli Symonds organization. As was noted in one review of THES-QS, "The survey response rate among the selected experts was <1% in 2006 (1,600 of 190,000 contacted). In the absence of any guarantee for protection from selection biases, measurement validity can be very problematic" (Ioannidis et al., 2007).

A further problem arises from including international factors as indicators. International faculty and international students each account for 5% of the weighting. The problematic indicator is that of international students. The anomalous case of the National University of Malaysia has already been pointed out. International students fall into several classes. One is the group of those seeking further study (usually

post-graduate) abroad after graduating locally with a good degree. Another comprises those students doing a year or semester abroad under a partnership arrangement such as the Erasmus scheme. This group is not currently counted in THES-QS ranking. There is a third category of students who for one reason or another leave their country to do their initial university studies abroad. In many cases they are not able to study in their own country because of quotas on numbers and/or ethnic backgrounds, low school achievement levels, or because study overseas is seen as more prestigious than local qualifications. The latter group is the raw material of the export education industry, which has grown enormously in the last twenty years. It is no secret that many of the lower-rated universities in Australia, for example, have developed an economic dependence on such students' fees, especially as successive national governments have encouraged universities to become more financially independent. In this situation, students who might not be accepted at higher ranked universities because of their low levels of academic and/or English language achievement, are often accepted by the lower ranked ones because of the fees they pay⁵. Having a large number of international students can in some cases indicate that the university has lower entry standards, thus contradicting the intent of the indicator. In some cases it might also contribute to a lowering of academic standards. This is a matter widely discussed in academia, along with grade inflation, but seldom brought into the open because of its politico-cultural implications. For example, in Japan there are lowly ranked universities that have recruited large numbers of Chinese students, whose main purpose in going there was to join the local workforce. University acceptance ensured an opportunity to work, in most cases in the automobile assembly industry. This complicit arrangement has been revealed in press reports concerning institutions that were set up solely for such purposes.

The THES-QS use of employer/recruiter reviews is also a weakness. The 2008 survey states that in the four most-recent years "more than 2,000 employers" responded to the survey. This cumulative figure seems absurdly low for a worldwide survey. No information on the kind or size of participating companies is available on the THES or the QS websites reporting the rankings. One need only consider that there are more than 3,000 universities in the USA, and 15,000 identified by Webometrics worldwide to realize the insignificance of the THES-QS employer survey. It should also be recognized that university graduates do not necessarily enter commercial companies upon graduation. Many are employed by governmental institutions in teaching and research, or indeed go on to further studies. A proper survey on graduate employment should carefully categorise fields of employment to make them accord with the disciplines represented in the graduating body of students.

Holmes (2006) mentions that the Quacquarelli Symonds company, a private organization, carries advertisements for various universities alongside of the rankings on its website *topuniversities.com*. He rightly suggests that this may appear to raise questions of conflict of interest especially since the company's main business is recruitment for university studies and careers worldwide

Newsweek

As mentioned already the Newsweek ranking takes indicators from the two rankings just discussed. It gains credibility from omitting the Nobel and Fields Medal awards, and from including library holdings. It uses the international factors from the THES-QS giving each a weighting of 5%. The deficiencies that may be recognized in the international students indicator must also apply to the one used by Newsweek, but at 5% it may have little determining affect since there is little discrimination between universities in the top 200 on this indicator in any case. In other words, the relative value of the indicator allows for minimal discrimination at the level being considered here. It would appear that the Newsweek table mostly combines

⁵ The mean undergraduate fee in Australian universities is around \$20,000 per annum, but in some courses may be as high as \$30,000.

the better features of both the ARWU and THES-QS tables. The only reservation that might be raised is to the fact that the Newsweek data come from the 2005 surveys and do not reflect the current and presumably improved statistics available.

As a final general reservation it must be noted that when several indicators are used in any survey and their values are summed, there is a risk that the distribution of values across indicators is not uniform. If the distribution pattern of one variable exhibits high kurtosis and another a more normal distribution, the former will have an exaggerating effect on the combined values of the two. THES-QS claims to have moderated its data for all indicators, which should have eliminated gross distortions in summing them to arrive at a final figure. However, summing across surveys, as is done below, introduces the possibility of these distortions, so this step must be taken with caution.

The national surveys

The worldwide university rankings have existed for only five years, but many nations and regions have been conducting quite detailed surveys of their universities for a long time. Until recently, the most thorough national surveys have probably been done in the US and the best known of these is the US News and World Report survey. It issues an annual report entitled *America's Best Colleges* (ABC). This survey is mainly meant to inform potential students and high school counseling staff. Another comparable one is *The Top American Research Universities* survey conducted by the Center for Measuring University Performance⁶. It is useful to examine these national surveys because they use a much finer and more refined set of data, due to the lessons of experience. They stand well against the grosser aspects of the international surveys and also give a much better indication of how such surveys can be used. It must be acknowledged that conducting a national or regional survey is much easier than an international one because of uniformity and comparability of institutions. It is especially easier in smaller nations.

Maclean's magazine conducts a survey of Canadian universities each year. It ranks universities in three separate classes according to their size and academic focus, using the categories: Primarily Undergraduate, Comprehensive, and Medical Doctoral⁷. The rankings produced are intended as much for public information as for informing prospective students. Nearly all universities in Canada, and certainly all the large ones are also public, which also gives a degree of uniformity to comparisons between them. The rankings always generate much dispute nonetheless, with some institutions only providing as much information as is publicly mandated.

As already mentioned, national surveys are easier to conduct because of the comparability of most higher education systems within a country, and in many cases, the uniformity, amount and richness of data available. Such data are often collected by public instrumentalities as part of regulations applying to the awarding of grants to the institutions, especially to public universities. Comparisons within countries can be done within categories of institutions, based on size, degree programs available, teaching or research focus, private versus public funded research and maintenance grants etc. National comparisons also depend on cooperation from the universities included in the survey. In some cases the information requested is not released by the university, sometimes for reasons of disagreement with previously assigned rankings, as already mentioned. The indicators used in national surveys can be much more precisely defined and hence

⁶ This organization is based at the University of Arizona, but has a board of highly respected US academics. Its most recent report was done in 2005, however.

⁷ This appellation is misleading in that it appears to refer only to postgraduate institutions. In fact it covers the largest and mostly oldest metropolitan institutions in Canada.

reliably weighted, in other words they have the kind of construct validity missing in the international surveys discussed above.

The US Surveys

The America's Best Colleges survey uses 18 indicators equally weighted, providing a clear idea of the specificity and spread of information gathered. They are as follows:

- Peer assessment
- Graduation and retention rank
- Average Freshman retention rate
- Predicted graduation rate(for the year of survey)
- Actual graduation rate(for the year of survey)
- Over/under performance rank
- Faculty resources rank
- Percentage of classes with fewer than 20 students
- Percentage of classes with more than 50 students
- Student/faculty ratio
- Percentage of full-time faculty
- Selectivity rank
- SAT/ACT scores in the 25th-75th percentile
- Acceptance/application rate
- Freshmen in top 10% of high school class
- Financial resources rank
- Alumni giving rank
- Average alumni giving rate

These have been criticized however, for focusing too much on input rather than output, which is covered by just 3 of the indicators. Output data are very difficult to gather as well as to weight.

The Top American Research Universities survey concentrates much more closely on indicators linked to research and performance of staff and students. Its latest rankings (2005) are shown in Appendix 2, where they are compared with the most recent ARWU, THES-QS and Americas Best Colleges rankings. Amongst these 200 names there are only 17 universities that appear in every list. These are seen in the table following.

This list gives much weight to any argument about the top universities in the USA, yet it should not be taken as definitive. Interestingly, it includes all but one US university listed in Table 5, showing a high degree of concurrence between the international and national surveys. Yet some prestigious universities did not make the list because they appeared in only three of the surveys. Washington University of St Louis appeared in all surveys, but with relatively low rankings, yet the Universities of Illinois (Urbana-Champaign), Washington (Seattle) and Minnesota (Twin Cities) got higher rankings, but on three tables only. Such inconsistency amplifies the concerns one might have regarding the validity of rankings, even on a national level. The inconsistency is further amplified as one goes down the rankings. It also substantiates the criticism made of the US News rankings that they discriminate against public universities (Farrell & Van Der Werf, 2007). Only three institutions of the seventeen are public.

It must be said however that the national surveys in the US and Canada are compiled for a more practical purpose than the world universities surveys have in mind. That purpose is to inform prospective students of the level of the university relative to their own merits so that they can make choices with reasonable chance of successful admission, and to show taxpayers how that part of their involuntary contribution is being spent.

Table 7. The 17 US universities (in alphabetical order) listed in all four surveys in Appendix 2

University of California, Berkeley
California Institute of Technology
University of Chicago
Columbia University
Cornell University
Duke University
Harvard University
Johns Hopkins University
University of California, Los Angeles
University of Michigan
Massachusetts Institute of Technology
Northwestern University
University of Pennsylvania
Princeton University
Stanford University
Washington University, St Louis
Yale University

Conclusion

This last point concerning practicality helps to address the main question asked in this paper. The usefulness of any survey can be assessed only if the main question preceding the formulation of the survey is that of what the survey is to be used for, which is not the issue of what can be made of the survey once it is published. National surveys are able satisfy that requirement if they are conducted without commercial interest. International ones might achieve some use and credibility if conducted by organizations such as the OECD. That body's surveys of school level education in its member countries are well regarded and useful. The task would be much more daunting for university level education. It is doubtful that there would ever be agreement on the selection of indicators, their subsequent weighting and the best method of fitting them to a norm, as the disputes over the international surveys described above show. The criticism of the THES-QS and ARWU surveys by Ioannidis et al. points to just that problem in referring to their lack of construct validity and statistical reliability.

What use can be made of the worldwide surveys discussed above? At best we can say that the surveys (with the exception of the Webometrics ranking) give us a general idea of where highly regarded research is being done at one point in time⁸. That information might be better revealed by a survey on levels of re-

⁸ This conclusion can be drawn from the variation seen in the rankings of prestigious universities from year to year.

search funding, however.⁹

At worst the rankings tell us nothing about teaching. There is no way that an inference can be made to the quality of teaching from the level of research in a university. It is sometimes said that good research improves teaching, but it is more often claimed that the pressure of having to do research takes time away from preparation for teaching. Thus the effect of rankings on many institutions might be distractive if anything, and might drive funding and staff concerns further away from attention to good instruction. The rankings may also lead to benign neglect. Marginson (2006) claims that the Australian universities in the THES-QS survey achieve a higher rating than they deserve, arguing correctly that the standards have declined greatly due to progressive neglect and under-funding by governments over the last decade or so. In this case a survey could do significant harm to the system if the government believed it to reflect the real standing of its universities.

Proliferation of such rankings will also give substance to a mistaken idea. That is the notion that there is one definable quality that makes a particular university the best in the world. In philosophy it would be called a category mistake¹⁰. Most people have an ineffable notion of “best”, but there is usually little common agreement on its attributes. So the idea of finding the best university in the world is perhaps quixotic.

Let us then regard them as imperfect works in progress, at worst an inadequate distraction from the equally important, or to many, the more important mission of a university, its teaching role. In between, the ranking curiosity will remain, a bit like that which sustains the freak show that is the latest publication of the Guinness Book of World Records.

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⁹ Research funding can also be misleading in that large and well-known medical schools often attract the largest share of research funds. This can be seen in the case of Johns Hopkins University. Some universities in this category (UC San Francisco for example) not have undergraduate programs at all.

¹⁰ The most famous of these is Gilbert Ryle's example of a person being shown around the Oxford colleges and finally asking "Where is the university?" Ryle uses the example to discredit the notion of a mind/body dualism.

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Appendices

Appendix 1:

Table 8. The 85 universities mentioned at least once in all (4) international rankings

Amsterdam	Edinburgh	Monash	UC Berkeley
Aust Nat. University	ETH Lausanne	Northwestern	UC Davis
Auckland	ETH Zurich	Nat. Univ. Singapore	UC Irvine
Basel	Geneva	New York Univ.	UC San Diego
Beijing	Harvard	Univ. of Osaka	UC San Francisco
Boston	Helsinki	Oxford	UC Santa Barbara
Bristol	Hong Kong Univ	Univ. of Paris 06	UC Los Angeles
Univ. British Columbia	Univ Illinois Urbana-Ch	Univ. of Paris 11	UNCarolina Chapel Hill
Brown	Imperial Coll. London	Penn State	Univ.Pennsylvania
Cal Inst. TechCalgary	Indiana	Pittsburg	Univ. College. London
Cambridge	Johns Hopkins U	Princeton	Univ. of NSW (Aust.)
Carnegie Mellon	Kings College London	Qing Hua (China)	U Southern California
Chicago	Kyoto Univ	Queensland	Utrecht, Netherlands
Chinese U Hong Kong	London School Econs	Rockerfeller	Vanderbilt
Univ. Colorado Boulder	Manchester	Rutgers State	Washington U St Louis
Columbia	Maryland	Stanford	U Washington Seattle
Copenhagen	McGill	Sydney	Wisconsin
Cornell	Melbourne	Texas Austin	Yale
Duke	Michigan	Texas SW Med Center	University of Zurich
Ecole Normal Superieur	Michigan State	Trinity College Dublin	
Ecole Polytechnique	Minnesota Twin Cities	University of Tokyo	
	MIT	Toronto	

Appendix 2:

Table 9. Comparison of rankings of two US national surveys and the ARWU & THES-QS rankings of US universities to the 50 thplace

ARWU (2007)	THES-QS* (2008)	Americas Best Universities (2008)	Top American Research Universities (2005)
Harvard	Harvard	Princeton	Columbia
Stanford	Yale=	Harvard	Harvard
UC Berkeley	California Inst. Tec=	Yale	MIT
MIT	Chicago	Stanford	Stanford
Cal Inst. Tech	MIT	Univ of Pennsylvania	Univ of Pennsylvania
Columbia	Columbia	Cal Inst. Tech	Duke
Princeton	Univ of Pennsylvania	MIT	Berkeley
Chicago	Princeton	Duke	Michigan Ann Arbor
Columbia	Duke	Columbia	Johns Hopkins
Yale	Johns Hopkins	Chicago	Yale
Cornell	Cornell	Dartmouth	UCLA
UCLA	Stanford	Washington Univ St Louis	U of Washington Seattle
UC San Diego	Michigan	Cornell	Wisconsin Madison
Univ.Pennsylvania	Carnegie Mellon	Brown	Minnesota
U Washington Seattle	Brown	Northwestern	Washington Univ St Louis
Wisconsin	UCLA	Johns Hopkins	UCSF
Tokyo	Northwestern	Rice-	Northwestern
Johns Hopkins U	Berkeley	Emory-	Chicago
Michigan	Boston	Vanderbilt=	UC San Diego
UC London	Dartmouth College	Notre Dame=	Univ Nth Carolina
Kyoto	Univ of Wisconsin	UC Berkeley	Princeton
ETH Zurich	UC San Diego	Carnegie Mellon	Cornell
Toronto	Univ of Washington	Univ Virginia	USC
Illinois	Washington Univ St Louis	Georgetown	Ohio State
Imperial College Lon	Emory Univ	UCLA=	Pennsylvania State
Minnesota Twin cities	Univ of Texas	Michigan=	U .of Florida
Washington St Louis	Univ of Illinois	USC	U of Illinois
North Western Univ	Rice	North Carolina=	U of Texas
UC Santa Barbara	Georgia Inst of Technology	Tufts-	Pittsburgh
Maryland Coll. park	UnivMinnesota	Wake Forest	Vanderbilt
Texas Austin	UC Davis	Lehigh=	Cal Tech
Texas SW Med Center	Case Western Reserve	Brandeis	Texas A&M