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University ranking: a new tool for the evaluation of higher education in Europe

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Introduction

After the personal publication impact factor and clinical quality assessment tools, university ranking would appear to be developing as yet another intrusive instrument in our academic and professional life.

For decades now, based on an increasing worldwide desire for comparative information, ranking has progressively become a well-accepted practice in many fields of human activity: sports, personal wealth, banking, schools and hospitals. Since higher education (HE) has always been very international, and universities, which are becoming more global, have so many internal and external stakeholders, the application of ranking to university activities has become unavoidable: students need rankings to choose where to study, scientists to know where to work, governments, where to invest and university leaders, where they stand [1,2].

Following a preliminary conversation with our editor, the usefulness of the present review became evident when on 22 February 2007, a Google search on ‘university ranking’ provided 27 900 000 links devoted to the topic, while a simultaneous Pubmed search only identified 204 items published since 1968, devoted to topics as diverse as extra-pyramidal symptoms in neuroleptic patients, dento-maxillo-facial variability of cleido-cranial dysplasia or epidemiological aspects of Brucellosis in Bosnia and Herzegovina. However, we found not a single article truly devoted to university ranking.

Historical background

While national ranking or rating systems of HE institutions has been introduced in a few countries

over the last decade, the first worldwide global university ranking was published in 2003 by the Institute of Higher Education at the Shanghai Jiao Tong University (SJTU), in an attempt to ascertain the actual standing of Chinese HE institutions in comparison with recognized world-class universities and also to detect prestigious international partners with which to establish links [3]. However, some of the indicators used, such as the number of Nobel Prizes and Fields Medals winners educated at a given institution, or the particular weight given to articles published in *Nature* and *Science*, were debatable and indeed forcefully debated.

In 2004, the *Times Higher Education Supplement* (THES), a weekly UK publication in the HE sector, came up with its own standards and ranking [4]. Both rankings rapidly gained wide popularity within and beyond the academic world and an expert group recently set up guidelines on the principles and methodology of international HE ranking [5].

Meanwhile, some more regional, less widespread classifications have also been proposed: the German Centre for Higher Education Development, a subgroup of the Deutscher Akademischer Austausch Dienst, annually publishes its own per discipline rating of German, and now also Austrian and Dutch, HE institutions [6]. The Spanish Research Council in Madrid has initiated a *Webometrics* tool, based on the yearly worldwide number of electronic online HE publications and link citations, as reflected by the top internet search engines [7].

Results

With indicators initially not commonly accepted as apprehending the global quality of an institution, the SJTU and THES ranking lists led to three types of reaction: severe doubt and scepticism as to the usefulness of this kind of exercise was the most generalized one—except within the well-classified institutions; the second reaction was to recognize its

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utility, but to suggest other, more refined tools to assess academic quality; and the third reaction was to take local measures to try to perform better for the following assessment.

Since 2004, SJTU and THES have conducted regular feedback meetings and discussions to improve the quality indicators and their respective weight [8,9]. The THES argued that their improved standards propose a reasonable assessment of the quality of an institution in the four domains of research quality, graduate employability, teaching quality and international outlook.

While the top 10 ranked institutions do not come as a surprise, with prestigious USA and UK institutions at the forefront, it is worth noting that 41 out of the top 100 are European, in comparison with 32 USA, 14 Asian and 7 Australian institutions (Table 1 on the NDT website THES ranking of the World top 50 Biomedical Faculties). Within Europe, above all the UK, but also France, Germany and, among the smaller countries, Belgium, the Netherlands, Switzerland and Austria are at the top; in contrast, Ireland and the Southern European countries are less well ranked.

Globally, some European countries are classified better than others: in the top 200, the Netherlands rank 10 out of a global 13 universities (77%), Switzerland 7/12 (58%), Australia 17/37 (46%), Belgium 3/8 (38%) and the USA only 54/261 (21%) [10].

Despite recent improvements, certain criticisms persist with regard to the 2006 classifications: (i) the weight given to hard sciences when compared with humanities, the arts and social sciences; (ii) the bias against non-English articles and/or publications in non-article forms (book chapters, national reports, conference proceedings); (iii) the heterogeneity of the data used (type of staff, with different teaching or research activities, level of staff, including only professors or all researchers, inclusion/exclusion of native-born students who are non-national due to foreign parentage) (iv) the bibliometric shortcomings due to citation bias and/or different or missing institutional names (hospital or university-based,

Table 1. The 2006 university ranking indicators and their respective weight (a) in the Shanghai Jiao Tong University (SJTU) ranking (8) and (b) in the Times Higher Education Supplement (THES) ranking [9]

a. SJTU ranking	
Alumni of institution Nobel Prizes and Fields Medals	10%
Staff of institution Nobel Prizes and Fields Medals	20%
Highly cited researchers in 21 subject categories	20%
Articles published in Nature and Science	20%
Articles in Science Citation Index and Social Science Citation Index	20%
Academic performance <i>vs</i> size of an institution	10%
b. THES ranking	
Evaluation by academic peers	40%
Evaluation by employers in the region	10%
Citation index last 5 years publications/Faculty member	20%
Faculty staff/students ratio	20%
Foreign faculty staff in % of total	5%
Foreign students in % of total	5%

departments or research units without institutional mention, language used) (v) the case of institutions that are incomplete (in particular without Sciences and/or Medicine areas), or are merging, splitting.

In addition, while a peer review process including over 3500 reviewers worldwide is certainly a valuable tool, some prejudice may still exist through peer conservatism and institutional reputation favoured by age, size, name and country biases (the names of Harvard, Oxford, Cambridge or MIT *vs* other high performing, but less recognized institutions).

Again, based on this type of feedback, steps are continuously taken to adapt the indicators by in-depth statistical correlation analysis and proposals for improvements [11].

Present trends and consequences

- (i) The first observation is that, despite the scepticism of several university leaders and ongoing controversies on the retained indicators, university ranking is here to stay. There is a global expansion of access to HE, an appeal for market-type funding at national governmental levels and a market-type inter-institutional competition, not only to attract good students and researchers but also to obtain national and international recognition.
- (ii) Ranking from University to Faculty level

The present ranking favours comprehensive universities, in particular those with technological, natural and/or medical sciences, *vs* smaller, more specialized ones. In addition, most universities are not uniformly excellent, but internally diverse with varying goals, missions or staffing per discipline. Therefore, the need for an international ranking within disciplines becomes more and more apparent. For the first time in 2006, THES and SJTU also published the ranking of the top 100 biomedical faculties [9].

- (iii) Improvement of data construction and collection instruments

Even if more academic peers from a wider range of countries participate in recent THES surveys and the opinion of international employers is expanding, the weight of expert bias remains high. Can the quality of teaching be estimated worldwide solely by the faculty/student ratio and by the internationalization of staff and students? Clearly, there is a need for improvement of the data construction and collection instruments.

- (iv) Institutional steps towards quality improvement

By giving the results for each of the 6 indicators, SJTU and THES allow the institutions to diagnose their strong and weak points. At both institutional and faculty levels, some simple directives might present immediate beneficial results: standardize institutional names in the publications, publish more in the right places and/or journals with high impact factors,

develop more links with regional employers, have more teaching staff and become more international.

But, as recently quoted by the President of a Japanese university: 'a farmer wanting to breed a big cow should focus more on nutrition than the weighing scales' [12].

(v) The risks of ranking

In a market-led world, a crude hierarchy of ranking threatens to prevail. This effect is multiplied by the use of ranking results as an 'objective' marketing and public relations tool. International rankings may rapidly widen the gap between a few increasingly privileged institutions, funded by governmental and private initiatives, and others, which become merely education mills for local communities. Ranking might ultimately have a de-equalizing effect, in particular in European almost exclusively state-funded HE institutions.

It should also be recognized that, even with the best possible indicators, the quality of an institution may not only depend on academic and research performance, but that the quality of education, library, administration, peculiar regional or national missions, campus culture and quality of life should also, whenever possible, be considered.

Taken globally, academic nephrologists should be aware that ranking lists will definitely change the worldwide university landscape. They are complementary to the classical HE quality assessment tools (reports, external visits) set up at national or regional levels, but are by far an easier, cheaper, more rapid and ultimately popular instrument. As highlighted recently, 'global vision ensures healthy competition' [9].

Conflict of interest statement. None declared.

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