

University competition heats up

4 Nov 2013

Belief in the power of information and competence building for a nation's global success has turned comparisons of universities into mega news. Competition is heating up, as new players are getting involved and emerging countries, such as China and Russia, are investing considerable sums in their universities.

One of the most important motives for the recent university reform in Finland was to improve the international competitiveness of Finnish universities. Universities are compared annually in published rankings. Better rankings strongly correlate with publication intensity. The number of publications by a university is easy to study using reference databases and then scaling the results by each university's size factor. If we aren't seeking explanations for the level of a university's publication intensity, but are merely interested in that university's general level and the magnitude of its challenges, a suitable measure is the number of publications per 10,000 students per annum (p/10K/a).

Using Scopus, I did a bit of a comparison of several Finnish universities (the Universities of Helsinki, Turku and Oulu, Aalto University and Tampere University of Technology). They produce 970–1,300 p/y/10Ks, taking registered students into account. If the scaling factor used is full-time students (FTE, full-time equivalent student), publication intensity increases to 1,460–1,940. This difference already shows that the easiest way to improve our ranking using this benchmark is to move from part-time study to full-time study! It is interesting to note that, for example, KTH (Royal Institute of Technology, in Sweden) does not seem to publish the number of registered students. The 'facts and figures' section on its website only gives the FTE.

In recent years, a slight increase has been seen in the number of publications in both Finland and many other countries. No significant changes have occurred in the relative positions of Finnish universities over the past five years.

In recent years, KTH and DTU (Technical University of Denmark) appear to be somewhat outdistancing the Finnish universities. According to Scopus, for example, KTH's publication intensity exceeds Aalto's by 24 per cent and DTU's exceeds it by 90 per cent, even if we use the number of full-time students as Aalto's denominator. The level of the Massachusetts Institute of Technology exceeds Aalto sixfold, and Cambridge exceeds it fivefold.

In September, I visited Xidian University in Xi'an, a city in central China. In 2008, this university began offering English-language B.Sc. and M.Sc. programmes to fee-paying students. There seemed to be students from countries such as Germany, France, the USA and Arab nations. Student numbers are still quite low, but the university's determination to excel is unquestionable. Xidian's publication intensity in Scopus stands at about 820 p/10K/a, while Asia's best either equal or exceed the level of Finnish universities (for example, Tsinghua 2,600 p/10K/a and the University of Hong Kong 1,700 p/10K/a). The visit also indicated that China as a whole is determined to invest in its universities – in their scientific level, international visibility and appeal. A trek to the sacred Mount Hua showed me that the Chinese have decided to climb the highest mountain. And if that means that a young mother must carry her small child on her back to a height of 2,160 m along a 45° slope, so be it.

A new development this autumn is that Russia has also decided to invest in improving the quality of its universities and their international appeal. It has chosen 15 universities for development to the top, and 12 of these have already received their first additional funds. The Ministry has hired PWC (Pricewaterhouse Coopers) as consultants to shape up the universities. Internationalization lies at the heart of the programme. The target is to raise the rankings of the universities, even though the Ministry gave up on the original, ambitious

numeric goals (5 universities in the top 100 list by 2020). Scopus reveals that Russia's best universities have a publication intensity of 150–200 p/10K/a (Scopus does not count publications in Russian nor in Chinese). These low figures are explained by, for example, doctoral thesis practices, which require publication in Russian, often in the universities' own journals. We should, however, remember that in spite of the figures, Russian universities have produced Nobel Prize winners. The Russians are also launching Master's programmes in English for fee-paying students. They are considered essential to provide a growth platform for internationalization.

In my opinion, we in Finland should welcome Russia's new quality programme. Its most important result for Finland will be the grumbling of the academic iron curtain. The programme will support academic mobility and open up new opportunities for funding joint research. Now is the time to be proactive with regard to Russia!

When it comes to developing our own universities, we're facing a hard slog. In my opinion, a researcher has no cause for pride unless he has received a Nobel prize; and if he has, there is no need.

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