

What it will take to evolve world-class universities here

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THE United States seems to be the global model for many things these days, though the shine is now off its economic, foreign-policy, business and corporate governance models.

One model that is not yet challenged much is its university system, still widely acknowledged as the world's best.

Universities have contributed greatly to the dynamism of the US economy, helping it to generate a constant flood of new ideas and products. They are also leaders in the evolution, propagation and constant questioning of US values and society.

Unsurprisingly, many countries seek to emulate the success of the US university system. Equally unsurprisingly, none have as yet succeeded. This is because many features of this system are peculiar to the US and are not replicable elsewhere.

The US has literally thousands of highly-differentiated colleges and universities. This enormous diversity means that American institutions can afford to specialise in different types of higher education, from vocational training at local community colleges to PhD degrees at national research universities.

Thus, small, private liberal arts colleges like Swarthmore, Williams and Grinnell are widely considered to be superior providers of undergraduate education, as are their engineering counterparts like Harvey Mudd and Rose-Hulman.

Liberal arts colleges are known for their small, interactive classes taught by professors and for intellectually well-rounded graduates who disproportionately populate the graduate-professional, and especially the PhD, programmes of the best research universities.

At research universities, large undergraduate classes are commonly taught by postgraduate student teaching assistants. Professors - especially the more senior ones - concentrate on teaching postgraduate students.

The most 'research-productive' professors may not teach at all, except for supervising a handful of PhD students. They can – and especially in science and engineering, are expected to - 'buy their time' out of teaching with external research grants.

Professors' research and teaching are also heavily supported by postgraduate student assistants and research-trained staff.

Research universities include privately-funded institutions such as Harvard, Columbia, Stanford, the Massachusetts Institute of Technology (MIT) and the University of Chicago, and the more prestigious state universities such as the University of Michigan, the University of Wisconsin, the University of Illinois and the University of California.

In addition to mass undergraduate education, these institutions produce most of the PhD graduates in the US, and provide postgraduate training in the professions (law, medicine, business, among others). They are costly institutions and take a long time to come into their own.

MONEY AND TIME NEEDED

JOHN D. Rockefeller, who founded the University of Chicago, one story goes, asked Harvard President Charles William Eliot what it took to build a great university. Eliot's reply was that it would take '50 million dollars and 200 years'.

Today, much more money would be required, and at least many decades, with no guarantee of success for latecomers. Despite a halfcentury of determined effort, rapid local economic growth and better weather, newer state institutions in the American South have continually failed to match their northern rivals in academic ranking, productivity and prestige.

Texas is particularly noteworthy for the billions of dollars of oil money that have been poured in to its universities over decades, and used to 'buy' famous scholars from other institutions, to little effect in relative academic standing.

Critics of American research universities say that they are too focused on research to the detriment of their teaching and public service obligations. They care only about narrowly defined 'research productivity', and their professors don't have time for students as their promotion and tenure are linked to research, not teaching. The research they do is often trivial or irrelevant from a social perspective, and unresponsive to the needs of the community.

Fortunately, the diversity of higher education institutions in the US gives students many choices: The research university is not the only or the best place for an undergraduate education.

US research universities themselves are specialised, differentiated and competitive with each other, with no single institution being uniformly superior in every discipline.

Purdue, for example, outranks Harvard in engineering, and Michigan outranks Stanford and MIT in anthropology, political science and Asian studies.

In most other countries, national universities are state-funded comprehensive institutions. They lack the US' scale and diversity, as well as its ready access to a vast and diverse national and global pool of scholarly talent, and to research funds from private as well as state sources.

In US research universities, faculty research in most scholarly disciplines is evaluated in terms of publication in peer-reviewed academic journals. In this process, scholars in the same field review research paper submissions and decide whether they are worthy of publication in a particular journal. The most 'highly-ranked' journals tend to be those with the 'purest' disciplinary focus.

Thus, in economics, the American Economic Review published by the American Economics Association is the gold standard. The British Economic Journal and the Japanese Hitotsubashi Journal of Economics lag behind in prestige. Specialised topical journals like The Journal of Developing Areas or Journal of Asia-Pacific Economy are further behind still. This is not because they are of lower quality but, rather, because they publish articles in a more specialised niche that is of less interest to the global profession as a whole - as the Singapore Economics Journal does, for example.

Faculty whose interest is inter-disciplinary and topical, or in place-specific or policy-oriented research, may have difficulty getting published in the top 'internationally-refereed' journals, thus defined. Research questions important in small and developing countries may not be of interest to the global discipline, and sufficient empirical data may not be available to enable the use of sophisticated testing methodologies.

Much depends on the subject area or discipline concerned. In pure science, there may be only a single global benchmark for research excellence. But in the humanities, social sciences and many professional disciplines, global disciplinary benchmarks may not adequately capture local and regional specificities.

Since established disciplinary channels - for example, ranked lists of journals - can discourage intellectual innovation and risk-taking, faculty evaluation even in the US is moving towards peer assessment of the intellectual impact of research and publication content in a scholar's field of inquiry. Alternative publication outlets, such as books and topical journals, are increasingly accepted.

Similarly, evaluation of faculty teaching performance is moving away from reliance on mechanistic numerical scores based on anonymous student surveys - which are notoriously unreliable and do not

distinguish between popularity and teaching effectiveness - towards more personalised evaluation by faculty colleagues.

Lecturers in US undergraduate liberal arts colleges are not expected to publish as much as those in research universities, who have lighter teaching loads.

INTANGIBLE ASSETS

THE 'global standards' which are the hallmark of US research universities can be adapted without much difficulty to other countries. More difficult to emulate are the intangible assets, such as the strong tradition of academic research and debate, protection for academic freedom, a high degree of intellectual autonomy especially from the state, faculty control of university governance and curriculum, and cultural tolerance and diversity.

These intangibles both encourage research and enable teaching pedagogies which interactively engage students and lecturers in critical thinking and open discussion. Lecturers are attracted to the profession despite monetary rewards often substantially below those in other sectors and professions.

A LOCAL CORE

IN SINGAPORE, as in other nations, universities are part of the national intellectual capital. While foreign ideas and talent must always be welcome, a core of local faculty is needed to give stability, local character, and cultural and intellectual rootedness to our institutions.

Evaluating faculty for promotion solely on the basis of research publications in 'top international (disciplinary) journals' may discourage place-specific applied research and publication. This deprives the nation of local knowledge and policy-relevant research, impoverishes its intellectual climate and cultural life, and fails to develop local capabilities.

Foreign scholars hired solely for their orientation towards 'international refereed journal' publication are unlikely to have the knowledge, interest or incentive to advance locally relevant research. Some will seek instead to use their positions here to enhance their own global mobility.

The best institutional outcome of this may then be no different from that of a local branch campus of a foreign research university (inevitably of lower status than the main campus), with our nation subsidising research by foreigners for the world market.

A large number of local and foreign educational institutions already exist in Singapore to provide manpower training. National state institutions should play other roles that for-profit, especially foreign, institutions cannot - that is, research (especially place-specific research), and engagement with the community and with policymakers.

This social and public role is indispensable to the development of civil society and the quality of life. The challenge for Singapore (and other countries aspiring to evolve world-class institutions of higher learning) is to balance international academic standards with national needs and local identity and culture. For example, Singapore can become the place in the world to learn about South-east Asia in particular disciplines, by developing local channels for research publication by local and foreign scholars that become global standards in their particular scholarly niches.

As in Europe, Australia and Japan, local institutions and scholars must play an active role in defining truly global - as distinct from derivative American - standards. At the same time, scholars who independently choose to conduct the kind of research that is favoured by international refereed journals, should continue to do so.

Flexibility, sensitive adaptation, and time to adjust and mature, are key to getting the best out of the US research university model.

Fortunately, some of the best features of the model are neither costly nor time-consuming to implement. They include: more nuanced admissions, student and faculty evaluation criteria - away from narrow reliance on grades, journal article counts and numerical rankings and point scores; a shift from state direction to faculty control of academic life and institutions; and the vigorous contention of different ideas, perspectives and people, in the context of 'safe spaces' for all intellectual discourse, however heretical, which lies at the heart of the creativity and excellence of the US higher education system.

[The writers earned their PhDs at US research universities and have collectively taught at a range of US and Singapore universities.]