Breaking Higher Education's Iron Triangle: Access, Cost, and Quality

The latest edition of Change: The Magazine of Higher Learning(Published in Cooperation with The Carnegie Foundation for the Advancement of Teaching), March/April 2009, includes an article entitled, "Breaking Higher Education's Iron Triangle: Access, Cost, and Quality", by Sir John Daniel, Asha Kanwar, and Stamenka Uvalić-Trumbić (UNESCO).

Breaking Higher Education's Iron Triangle: Access, Cost and Quality

by Sir John Daniel, Asha Kanwar, and Stamenka Uvalić-Trumbić

Introduction

Expansion is now the defining trend in the worldwide development of higher education. Some predict that by 2020, 40 percent of the global workforce will be knowledge workers with a need for tertiary qualifications. So the World Bank, which made basic education its priority in the 1980s and 1990s, is now urging countries that have not yet done so to develop their higher education systems. And indeed, most claim that they want to join the knowledge society by following the example of developed countries, where age participation rates (APRs) in higher education of 40 to 50 percent are now perceived as necessary for sustained and sustainable development.

Accordingly, student enrollments in the developing world are burgeoning. Already there are some 140 million postsecondary students globally, if part-time enrollments are included. China and India have doubled enrollments in the past ten years, giving China the world's largest higher education system, with some 25 million students. But the many developing countries with APRs of less than 10 percent have a big hill to climb.

Some are tackling this challenge with vigor. Malaysia plans to raise its APR from 39 percent to 50 percent by 2010. The government of Trinidad and Tobago aims for an APR of 60 percent (up from 11.9

percent in 2007) by 2015. India, where each one percent increase in APR means a million more students, also has ambitious plans to go from 10 percent to 15 percent by 2012.

It is in the interest of the United States and the West to support this trend. Educating people to higher levels will increase prosperity of poorer countries, thus contributing to their political and economic stability and expanding their potential as markets for Western goods. College graduates from developing countries also increase the global pool of highly qualified workers and contribute to migration patterns that can work to the advantage of all the countries involved. The U.S. benefits greatly from the inputs of Chinese and Indian immigrants with advanced education. Those who remain in the U.S. contribute directly to its prosperity, while those who return to their countries often forge business and political links with the U.S.

More generally, highly skilled migrants provide a cushion of flexibility in changing economic times that unskilled immigrants do not. In Europe, as the economy slackens, some of the skilled migrants from new member states of the European Union, such as Poland, who went to work in Western Europe are now returning home with savings that will enable them to set up businesses in their own fast-growing economies.

The question, then, is not whether developing countries should try to expand their higher education systems, taking advantage of Western partnerships, but how they can do so rapidly and with reasonable quality.

There is a growing realization that government provision of higher education in traditional modes alone cannot accomplish this task. When calculated on a per-capita basis, government allocations for higher education worldwide show a steady decline. For example, due to massive enrollment increases, public expenditure per student in Africa fell by four-fifths in the period between 1980 and 1995. The inability of governments to respond to the growing demand for tertiary education poses a political problem in developing countries that have previously assumed that state provision of residential education is the only way of supplying this public good. Their small residential campuses are completely unsuited to the numbers now crowding into them, and the facilities expansion that would be needed were they to accommodate all current and future students on those campuses is beyond their means.

So two strategies are being employed to diversify the ways that higher education is offered and funded. The most significant and politically sensitive of these is the development or importation of private higher education, which is now the fastest-growing element of the postsecondary education sector worldwide. But low-cost public provision is still essential, because in poorer countries, residential private higher education, which may increase the number of seats available, is beyond the financial and geographical reach of most students.

Open and distance learning (ODL) and eLearning are increasingly seen as key to providing access to the wider student population now seeking higher education, especially to working adults and those in remote rural areas. In 1988 there were only ten open universities in the whole 53-nation Commonwealth; by 2005 there were 13 open universities in India alone. Our focus here is on the fundamental question of how these new providers, mostly in the public sector but including a growing number of private institutions, can offer high-quality higher education at an affordable price.

The Ministers' Dilemma

The ambition of ministers of education in developing countries is to provide wide access to high-quality higher education at a low cost. Making a triangle from the three vectors of access, quality, and cost gives us a simple way of representing different models of higher education.

Defining the vectors of access and cost is pretty straightforward, since student numbers and per capita costs are amenable to quantitative analysis. But what about quality? What are the conventional concepts of educational quality, and how have they changed over time? Let's start by revisiting the 19th-century controversies surrounding the creation of London University.

The ancient universities of Oxford and Cambridge were built around the presumption that high-quality education consisted in privileged students residing together in college communities, where they would educate each other with little explicit teaching from the scholars in their midst. London University first broke with this tradition by putting more emphasis on formal communication between faculty and students through lectures (the poet Samuel Taylor Coleridge slammed this new model as "lecture bazaars under the absurd name of universities") and by giving examinations that were meant to gauge the level of student learning that resulted from this interaction between students and professors.

In 1858 the University of London made an even more radical innovation when it established its external studies program and delinked its examinations from study at any institution. This opened up the possibility of a university degree to those who had to earn a living while they studied, making higher education available to a far wider range of social classes and occupations. It broke the link between place and study. The magazine *All the Year Round*, published by the novelist Charles Dickens, coined the term "the People's University" for the new venture.

This created a new round of controversy. John Henry (Cardinal) Newman, whose book *The Idea of a University* is the enduring apologia for the student community model, remarked:

"If I had to choose between a so-called University which dispensed with residence and tutorial superintendence, and gave its degrees to any person who passed an examination in a wide range of subjects, and a University which had no professors or examinations at all, but merely brought a number of young men together for three or four years ... . I have no hesitation in giving the preference to that University which did nothing, over that which exacted of its members an acquaintance with every science under the sun."

Much of today's higher education remains a blend of student community and lecture bazaar, each of which contributes a particular notion of quality. In the community model, quality is largely a matter of the characteristics of the entering students. If the student community is difficult to get into, it must be a place where excellent education occurs. Quality is identified with exclusivity. The lecture bazaar model brings in another dimension of quality, namely expenditure per student: the more the better.

These two dimensions of quality are conflated in the public (and academic) mind. A high-quality institution must be exclusive in its intake and then spend lavishly on the students it accepts. This has the perverse result that societies spend most on the higher education of those who are already privileged.

Using such definitions of quality in our triangle of vectors illustrates in stark fashion the dilemma facing ministers of education. For the student-community and lecture-bazaar models of provision, the sides of the iron triangle cannot readily be altered to match ministerial ambitions for wider access, higher quality and lower cost. Expanding access at lower cost is a double whammy for quality, which, based on these traditional definitions, means limited access and high cost.

With Newman's community model, the vectors of access, quality and cost make an iron triangle because there are no possibilities of economies of scale. But the lecture bazaar is also constrained by the triangle, because with classroom teaching it is impossible to change the vector on one side without ill effects on either or both of the others. Packing more students into bigger lecture halls may increase access but will lower quality, defined as faculty-student interaction, unless the cost is increased by hiring more teachers. Similarly, attempts to improve quality usually restrict access and raise costs.

The iron triangle—the assumption that quality, exclusivity, and expense necessarily go together—has been the bugbear of education. Under this assumption, an institution with tough admission requirements and high fees is a good institution, regardless of what happens within its walls. Under this assumption, it is futile to think that poor countries can ever extend high-quality higher education beyond the elite.

But is there another way to think about quality? One is suggested by the commercial world. When people in the developing world acquire software, whether discounted or pirated, the package, if not the packaging, is essentially the same as it is in the West. For software, as well as an increasing number of other products and services, the key question today is whether you have access to it at all rather than about its quality once you have it. In software and many other products, quality is defined by capability and reliability, not by exclusivity and cost. This has parallels with the evolving contemporary discourse about quality and standards in higher education.

Quality and Standards

Over the last two decades, many governments have invested significantly in quality-assurance systems for higher education—or obliged institutions to make the investment for them. Systems vary from country to country in the purposes for which they are used and the degree of state involvement, but there are many similar experiences and common challenges.

Quality assurance, usually done at the institutional level, is generally meant to verify that institutions are fulfilling their declared missions. If they are doing so, the process may then, in some jurisdictions, culminate in institutional accreditation or re-accreditation. In some countries, quality assurance also includes evaluation at the discipline level.
Although they instigated the drive to more quality assurance, a number of governments now express disappointment with its impact for various reasons. Some had hoped it would shake up the higher education system and squeeze weaker institutions more vigorously. Some have concerns about self-referential nature of much quality-assurance work, which they believe needs some external point of reference; in a globalized world, governments like to compare their performance internationally. And finally, the emphasis is increasingly shifting from how advanced education is offered to the learning that results from it.

In an attempt to elicit more direct comparisons between institutions and programs based on student achievement, some countries have directed quality assurance agencies to work on standards, which are proving to be complex and controversial. They have been encouraged—or discouraged, depending on their national rankings—by the OECD's Program for International Student Assessment (PISA), which compares reading, mathematical, and scientific literacy in 15-year-olds across many countries. Some would like a similar program to examine the outcomes of higher education on student performance.

The OECD is tiptoeing into the higher education standards debate with understandable caution. Through a program called AHELO (Assessment of Higher Education Learning Outcomes) it is now assessing whether reliable cross-national comparisons of student learning outcomes are scientifically possible and feasible. Concurrently, another OECD project, the Program for the International Assessment for Adult Competencies (PIAAC), similar to the PISA model, is under development. It aims to identify and measure differences between individuals and countries in the competencies believed to underlie both personal and societal success and to gauge the performance of education and training systems in generating the required competencies. The initial focus will be on skills of numeracy, literacy, problem-solving, and information and communications technologies.

While the PIAAC will no doubt produce interesting and controversial results, it will not materially affect the higher education standards debate since it is delinked from institutions. However, through the AHELO program, the OECD will look at learning outcomes in selected institutions across countries.

The debate about standards in the U.S. is sharper than elsewhere, perhaps because the federal government, which is particularly interested in them, authorizes but does not run the accreditation system and has not had to grapple with the complex practical issues of setting and assessing standards. But pressure from the federal and state governments has made both institutions and accrediting agencies take the standards issue seriously. This has resulted in a greater focus on learning outcomes.

That pressure also reflects a growing recognition that the current U.S. accreditation system was designed for an institutional model of teaching and learning that no longer exists for most students. It assumes study in a single institution, whereas 60 percent of college students attend two or more institutions and 20 percent—and rising—attend three or more. The accreditation system is also based on the lecture-bazaar model of instruction, even though most learning will soon exist in other settings, using a variety of technology-mediated approaches that are asynchronous and self-paced.

So how can quality be ensured in such a fragmented and dislocated educational model? There are important parallels between contemporary students, both in the U.S. and around the world, and those for which London University created its external system 150 years ago. Today's students work, are mobile, can commonly find access to learning resources on their own, place limited value on physical presence and face-to-face communication, and want credentials of value.

Examination Systems

London's response in 1858 was to focus on creating a credible examination system that could function at scale. Dr. Robert Barnes, one of the graduates who campaigned for London's external system 150 years ago, extolled the virtues of examination, saying,

"Knowledge alone must be tested. There is no substitute for it. The University and the public are not concerned to inquire “when or where” it was obtained. ... Unlike more worldly stores, knowledge can hardly be acquired dishonestly, or without elevating the character of him who has achieved it."

Although the words are whispered softly, there is a growing awareness, at least in the U.S., that standardized testing may be a simpler and better approach to ensuring quality and standards than some of the convoluted processes for measuring learning outcomes that are currently used.

But the key factor is the shift of emphasis from residence and lectures to outcomes and examinations. If the trend to delink testing from teaching continues, it will lead to more flexible and less expensive models of higher education, with the result that the aspiration of giving people access to high-quality higher education worldwide may not be an illusion. In terms of the access-quality-cost triangle, the examination system is a major breakthrough. Access is only limited by the availability of examiners, quality and standards can be set at the level required, and students are spared the costs of residence and instruction.

Support for Learning

But pure examination systems have high failure rates—most people need help to prepare for examinations. A robust model for quality higher education must give students a reasonable chance of success. Needed alongside the examinations are various forms of support; students who register for examinations should be able to choose among those services, thus creating a market for them.

There are many potential players in such a market, including local public and private institutions teaching face-to-face and at a distance. There will also be organizations of various types operating across borders. However, instead of expecting students to enroll for a complete package of teaching and assessment, institutions will need to unbundled and personalize the different elements of their support, allowing students to pick the amount and kind of assistance that they need and can afford.

Support through distance learning is particularly appropriate for reasons of convenience and economics. The costs of reproducing and distributing eLearning materials are tiny, so it costs little to widen access to them. An examination system, allied to elements of distance learning, could give wide access and consistent quality at low cost. Supporting examination candidates and distance learners is much easier today because of the development of the Web, eLearning, and open educational resources.

But harkening back to the student-community notion of quality, does this mean an inferior form of education for the masses while the privileged continue to have access to “the real thing”—i.e., residential education? Some important research by Robert Bernard and his colleagues at Concordia University, Montreal, explodes the myth about the importance of face-to-face support. They carried out a meta-analysis of hundreds of studies in which distance-education students were treated in different ways. They distinguished three types of interaction: student with content; student with student; and student with teacher. They then analyzed all the studies to find which type of interaction made the greatest difference to student performance when it was increased. The results showed clearly that increasing student-content interaction had much the greatest effect, with student-student interaction coming next and student-teacher interaction last.

These conclusions have important implications for both the viability of distance learning and attempts to improve it. Previously, when challenged to increase completion and success rates, distance learning programs tended to increase the amount of personal tutorial support. This appears to be the least cost-effective way of helping students.
Facilitating student-student interaction through self-help groups and meetings is also common and is more cost-effective than student-teacher interaction. But much less effort has been devoted to enriching student-content interaction, although this is potentially the most cost-effective strategy. ELearning provides new and inexpensive ways to do this—websites with answers to frequently asked questions being a simple example.

The Triangle Broken

The requirements for a model that could allow higher education to expand rapidly in the developing world are that it be readily scalable (wide access), academically credible (high quality) and affordable (low cost). This could be achieved by building higher education networks around credible examination systems run by national or independent bodies or established institutions and then encouraging a market of support providers to aid in development. Although the range of examinations would need to match the wide array of higher education programs on offer, there is considerable room for aggregation and for some existing institutions to act as examining bodies for others.

The notion that faculty members must examine their own students is particularly deeply embedded in U.S. practice. But most faculty members are not experts in assessment. An examining body with specialized staff is better equipped to apply the results of research on student assessment to develop valid examinations that test what they are meant to test, including skills like critical thinking and problem solving that figure prominently in institutional rhetoric about curricular objectives. Adapting examinations to the new teaching and learning environment and to technologies such as gaming also requires special skills. These are examples of the new division of labor in higher education.

Examining institutions can draw on the evolving work on standards to ensure relevance and make their curricula fully transparent. For example, the UK's Quality Assurance Agency has published subject benchmark statements setting out the academic characteristics and standards for a range of disciplines. While some of these statements combine or make reference to professional standards set by external professional or regulatory bodies in the discipline, they do not represent a national curriculum in a subject area but allow for flexibility and innovation in program design within an overall conceptual framework established by a disciplinary community. Nevertheless, they clearly provide a starting point for the design of examinations.

In Europe more widely, the Bologna Process is using three routes to force an alignment of national standards of achievement. The first, developed by the European Network for Quality Assurance, is the European Standards and Guidelines for Quality Assurance. The second is the "tuning" project, which attempts to align academic standards in various disciplines by having faculty from various countries examine student work. This links to evolving common European outcomes descriptors based on existing national qualifications frameworks. The third is a "diploma supplement" that accompanies individual credentials, which describes courses and provides background on the national higher education context

and benchmark assignments that the student has had to complete. This could be a useful basis for common examinations.

Placing the functions of teaching and examining in different institutions makes issues of quality and standards much easier to address. Teaching institutions are challenged to raise their teaching to the level of the external examinations, rather than softening their examinations to fit their own teaching. Comparisons of institutional performance are also made easier. Having a few specialized examining bodies in any country would reduce the considerable corruption that mars internal institutional examinations in some countries and could also sound the death knell for degree mills.

Removing a major part of the examining function from many institutions will not eliminate the need for institutional quality assurance, though. UNESCO's *Guidelines for Quality Assurance in Cross-Border Higher Education* are as relevant to the cross-border provider giving partial support to students registered for the examinations of a third party as to the provider offering a complete teaching and assessment package. However, some quality-assurance systems could operate with a lighter touch, placing more emphasis on the quality of the processes for supporting students and the development of an institutional quality culture.

What should be the relationship between examining bodies and support providers? The London experience shows that there are risks if the examining body approves particular suppliers for this purpose, just as there are risks in encouraging a free-for-all. The best way of protecting the student, which the Internet facilitates, is for examining bodies to make public as much information as possible about the costs and success rates of the various support providers.

Conclusion

The aims of wide access, high quality, and low cost are not achievable, even in principle, with traditional models of higher education based on classroom teaching in campus communities. A perception of quality based on exclusivity of access and high expenditure per student is the precise opposite of what is required. One based instead on student achievement enables developing countries to scale up their higher education APRs without breaking the bank or fatally compromising quality.

Elements of the alternative model proposed here are already present in some places. In Ghana, for instance, all new universities have to be mentored by an established institution, notably in the examining function, until they are mature. We are suggesting a more rigorous and ongoing relationship than this. Although our focus is on developing countries, we suspect that elements of the systems we describe will gradually be adopted within established systems in wealthier countries—after all, they are not new.

This is not to predict convergence on a common worldwide model. National differences thrive in a globalized world. Concepts of quality in higher education will vary between countries and regions, and the styles of the regional quality-assurance networks will reflect these differences.

But perceptions of quality are changing, and the growing emphasis on outcomes and standards heralds the possibility of a model of higher education that could achieve the ministerial aims—one that centers on examinations and allows students to choose different ways of preparing for them. Although this type of

system has a long history, contemporary technologies such as eLearning and open educational resources promise to make it even more cost-effective today.

Resources

P. C. Abrami, R. M. Bernard, E. Borokhovski, A. Wade, R. Tamin, and M. Surkes, (2008). Instructional interventions affecting critical thinking skills and dispositions: A stage one meta-analysis. Manuscript in press with Review of Educational Research.

R. M. Bernard, P. C. Abrami, E. Borokhovski, A. Wade, R. Tamin, and M. Surkes, (2008). Examining three forms of interaction in distance education: a meta-analysis of between-DE studies. Manuscript in preparation.

R. M. Bernard, P. C. Abrami, Y.Lou and E. Borokhovski, (2004). A methodological morass? How we can improve the quality of quantitative research in distance education. Distance Education, 25(2), 176-198.