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Academic Values, Institutional Management and Public Policies

by
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The impacts of market-related policies and revenues on higher education are not uniform but globalisation has opened most institutions to new pressures. The public funding models developed 50 years ago underestimated the full cost of mass higher education as an entitlement while the sheer scale of resources needed to sustain a comprehensive research university demand a more nuanced balance of research and teaching for most institutions. These same pressures threaten equitable access if rising tuition fees are not fully matched by adequate need-based financial aid while in the absence of tuition pressures, unfunded increases in student participation undermines the quality of higher education. In this environment, justifications of increased funding are often based on utilitarian goals affecting the motives of research and scholarship and distorting the balance of curricular developments. In contrast, the increased range of revenue streams has created opportunities for more creative and less regulated institutional priorities. The potential impacts of private interests on higher education are well recognised but a politically vulnerable and often singular dependency on state funding is also capable of deflecting academic values. As institutions of higher education clarify their values to cope with global pressures to provide mass higher education and to meet the needs of the knowledge economy, they must also serve as places of imagination, innovation, disputation, scepticism and questioning. Those values are also critical as leaders in higher education attempt to confront themselves with the changes that they themselves need to make to their institutions.

Discussions of recent changes in the management and organisation of higher education often express concerns about the loss or at least diminution of long-established academic traditions. Some of these traditions still bear the hallmarks of the medieval origins of the university. A millennium of evolution has seen the original institutional form take on many variations as it has adapted to changing times and to different national cultures. But globalisation has affected the university in new and unprecedented ways as it has virtually everything else in our world. After centuries of largely divergent national traditions in higher education and continuing differences in national educational policies, the processes of globalisation have created conditions that are leading to stronger convergent developments in higher education between countries. The rapid growth in the number of international students with qualifications from more than one country, the internationalisation of disciplinary research and the use of English as the primary medium of scholarly discourse are all sources of convergence.

Changes in higher education worldwide do seem to confront shared issues as well as those specific to distinctive national arrangements. The expansion of public expenditures in higher education has been associated with demands for enhanced accountability and effectiveness. These demands have required a more active managerial approach to the administration of universities and increased pressures for universities to seek revenues beyond those provided by public funding. These pressures sometimes conflict with the academic values that have inspired and sustained the university throughout its history. These values include academic freedom, intellectual integrity, moral and ethical probity as well as a commitment to ensure fairness in access and a commitment to respond to social concerns. Although universities have not always been true to these values and commitments, they remain the bedrock of higher education's identity and institutions need to be alert to any pressures that diminish their influence. In addition, demands for narrowly construed outcomes combined with the market-related basis of new revenues may create incentives that distort the core missions of higher education institutions as purely utilitarian motives drive both curricula and research.

There are, of course, significant differences in national higher education histories and practices, particularly in the role of the state in funding and control. In Europe and in varying degrees elsewhere in the world, public policies continue to make possible free or extremely low cost access to higher

education and accordingly the funding priorities are set in conjunction with government agencies. Consequently, the impacts of market-based governmental policies are more influential than the growth of non-public and market-related revenues in most parts of the world. In the United States, a high degree of mission differentiation within higher education is in part based on the impacts of variations in the multiple sources of revenues on different kinds of institutions. This institutional diversity was established long before the rapid expansion of market-related revenues within the public sector of higher education, but the degree and kind of mission differentiation did open the US system to greater penetration by market processes. In fact, mission differentiation is itself one response to the market-based policies of governments, the entrepreneurial policies of institutions and ultimately the selective decision-making of students.

Despite these differences, higher education systems throughout the world are being called upon to educate more students, provide more support for them, address workforce needs, solve social, scientific and technical problems and do all of it better, more efficiently, and in physical facilities and surroundings appropriate to the task. This expanding role increasingly includes adult students responding to the opportunities and necessities for lifelong learning. Despite variations in demographic conditions and especially in the patterns of foreign immigration, there is a global setting to the continuing expansion of the demand for higher education.

To accommodate the full costs of massification and to respond to the research agenda of the knowledge economy, institutions are called upon to become more effective with their public resources and to seek through their own activities some of the funds they need to serve more and new kinds of students. Traditional higher education institutions, with their support from public funds or endowments or both, had a financial base that for long protected them from purely marketplace exigencies. However, with public support shrinking in terms of total needs, market-related revenues must account for an increasingly large proportion of both operating and capital funds.

Until recently, higher education served only social elites. Somewhat later, universities became part of a meritocratic social order in which an extremely small proportion of eligible students were educated to serve as a new elite. Then, higher education systems underwent a massification based on a more egalitarian view of the purposes of universities, raising many conflicts about the compatibility of access and quality. This massification leads of course to problems of physical capacity, concerns about quality and an exponential growth in the financial support for students. In the absence of any major reductions in unit costs, the expansion of access has far exceeded its anticipated costs.

The incremental financial burdens of massification were assumed in part by national governments or in federal systems by state governments. The magnitude of this need for institutional support and student financial aid is beyond the capacities of individual states, local governments or institutional endowments, and national governments have made major commitments to the financial needs of students at public institutions and in the United States to those at independent (private) institutions. This commitment has, however, raised the political discourse about tuition fees and the rising costs of higher education to a national level where it has become a matter of fiscal debate. Increasingly governments are questioning their obligation and their willingness to pay the full costs of expanded access and, at the same time, they are actively encouraging higher education to seek alternative revenues.

The debate about tuition fees

The most immediate and obvious sources of new revenues are tuition and other fees. Tuition fees may be viewed as a legitimate partial payment of the cost of higher education if the benefits are assumed to be both public and private. Tuition fees at public institutions have either been low or nonexistent, but once they become a significant source of revenue, higher education is involved in a calculus quite different from one based exclusively on public support.

Tuition fee levels are set in part in response to market-related conditions. For example, tuition fees may be set at different levels for different programmes and degrees. Graduate professional programmes set their tuition fees in relation to both the presumed future private benefits to the student and the willingness of employers to pay the full cost of the education of future or current employees. New programmes may set tuition fees at lower levels while prestigious established programmes may set them at levels the market will sustain. Some professional and continuing education programmes may explicitly establish themselves as a for-profit segment within a university and the resulting surplus revenues may make the unit independent of public revenues and occasionally of the university itself. The policy challenge of these programmes is the degree to which it is possible to redirect some of these new revenues as a subsidy to other less market-based units within the university.

Political jurisdictions may also set relatively low tuition fee levels for in-state citizens but charge what the market will support for those from other states or countries. International students were for long subsidised perhaps as a source of future cultural influence but foreign students are now part of a complex international market in higher education. International students for some institutions are clearly a source of revenue, and some institutions in the United States, in fact, use high levels of out-of-state undergraduate tuition fees to subsidise low in-state undergraduate tuition fees.

Both public and institutional sources of financial aid have mediated some of the negative consequences of a pure market approach to tuition fees but these strategies of student subsidies designed to enhance access of the less affluent are themselves part of increasingly competitive behaviour among and between universities. The manipulation of tuition fees and financial aid is clearly one of the most immediate ways in which US higher education has responded to and also mediated the influence of the marketplace. The balance between need-based and merit-based financial aid is now one of the major public policy debates in the United States as efforts are made to confront an apparently irreversible substitution of tuition fees for public revenues.

Higher education: private or public good?

Increased tuition fees have also amplified the distinction between the private and public benefits of higher education. As an increasing proportion of the financial burden of higher education is now borne by students and their families, it is increasingly assumed that higher education is a private benefit resulting in higher lifetime earnings. Lost in this argument is the strongly held value of universities that they are educating citizens who serve society in their private capacities as well as by means of their professional expertise. Universities do not wish to see themselves as a pure instrument of workforce development. Through their educational programmes they serve the polity, the culture and the societal tone of the country and the world as well as the individual economic aspirations and the needs of the workplace.

Nevertheless, there is a temptation for publicly funded institutions to argue their case primarily on the basis of the purely instrumental needs they fulfil in producing trained professionals and creating new knowledge that supports economic development and competitiveness. Those who hold the purse strings are often more responsive to arguments that promote national competitiveness than those that stress the role of higher education in promoting the welfare of civil society and carrying the cultural legacy of the country and world. But exaggerating the role of higher education in supporting competitive national interests as the basis of state support may undermine the basic values of education and distort its mission as easily as the search for new revenues. As long as all institutions to a greater or lesser degree depend on public support, they do need to continue their commitment to national needs. But they should be careful to define those needs in ways that do not do violence to their ultimate goal of being objective and sometimes sceptical critics of society at large and perhaps more directly of some segments of the larger society.

The impact of private revenues

While the changing conditions of public support are presenting several challenges to core educational values and missions, the expansion of private sources of revenue is assumed to have even deeper impacts. In fact, these effects vary according to the kind of private support. Private individual philanthropy, the primary source of funds for institutional endowments, have enhanced the flexibility and strengthened the independence of universities. Occasionally private gifts may not meet the needs or serve the values of an institution and can provoke undesirable conflicts, but most private fund-raising occurs within the framework of the priorities of a strategic plan. Indeed, under-funded programmes may be the beneficiaries of reallocations made possible by the scale of private funding in other areas. As tuition fees have increased at public universities and as the costs of research are no longer entirely borne by the local tax base, endowments based on private philanthropy are no longer limited to private institutions. Prior to about 1980, explicit campaigns to solicit funds from former students were quite rare in public institutions. More recently the diminished rate of growth – if not absolute declines – in public investments have made private philanthropy indispensable to the viability of the public sector of higher education in the United States.

Unfortunately, private and largely alumni philanthropy is a major source of revenue for a relatively limited number of well-recognised and long-established comprehensive research universities and especially a limited number of elite independent institutions. These institutions also benefit, but with less predictability, from the revenues of intellectual property, especially patents as well as real estate. In many respects it is the management of these endowments rather than the solicitation of private gifts that has exposed higher education to the vicissitudes of capital markets and competitive returns.

This success has, however, raised unsustainable expectations that all institutions will in varying degrees be in a position to create an endowment. The cost-benefit of extensive fund-raising for smaller regionally based institutions is clearly a consideration that requires more careful scrutiny while the sheer magnitude of some endowments may create negative public reactions if they are not prudently used. If the concentration of wealth in a few elite institutions is combined with the relative impoverishment of the remainder of the US higher education system, questions will no doubt be raised about the preferential tax policies that make private contributions attractive to donors.

In the United States, corporate funding remains a relatively small proportion of the growth of new revenues. Frequently this kind of funding takes the form of partnerships to support specific research projects of direct interest to the private sponsor. These grants, of course, present more serious ethical problems than private philanthropy. Specifically, issues of publication and ownership of

research findings raise issues that need clear policy guidelines to resolve. A more egregious ethical problem arising from corporate funding is the too-often realised possibility of corporate censorship of research findings inimical to their interests. Indeed, most corporate gifts and partnerships generally result in a project-specific investment and rarely create long-term resources, whereas a major portion of private gifts and patent revenues are usually invested in an endowment for future needs.

Market-related pressures from both the public and private sector can also create strong temptations to distort core values and essential missions, most immediately and directly a shift in the motivation and manner in which research is conducted. Scholarly investigation motivated by serendipity and curiosity may give way to narrowly conceived utilitarian goals and an imperative need for immediate applicable results. This fear does assume that there is a well-defined distinction rather than a continuum between pure and applied research and that public support is less likely than private funding to support project-specific research. In fact, the core issue is the degree of freedom that investigators have to follow their creative instincts or even the logic of their findings. Under such circumstances university endowments may be the most untrammelled source of support for individual scholarly creativity.

This presumed pressure towards a utilitarian approach to higher education is also reflected in the expansion of professional education, even at the undergraduate level. The curricula of these programmes are designed to meet professional needs and may neglect a broad educational commitment to encourage civic engagement, to provide a broad knowledge of the past and of other places and other cultures, and to develop questioning minds. Of course, this loss of breadth is also linked to the intense specialisation of specific degree programmes of specific disciplines and even sub-disciplines. In many respects, changes attributed to the growth of market-related revenues are also the outcomes of an almost continuous increase in the intellectual division of labour over the past century and a lack of consensus on the proper place and role of general education in the curricula of higher education.

Effects on management and governance

Perhaps the most intense pressures from the growth of market-related revenues have been on how universities are managed and governed. Over the past two decades the internal management of US universities has become highly specialised and segmented, leading to new leadership challenges. New revenues have necessitated reliance on professional management with corresponding attention to the executive and leadership talents of senior university officials. Most of the budgets of large institutions now are professionally managed, just as the endowments are under the care of

investment professionals. Human resources, public relations and facilities are all under the supervision of professionals specifically trained in these fields. Institutional management has long since ceased to be the exclusive province of academic staff with a knack for management.

This level of professional management is often viewed as a threat to the established forms of university governance. Traditional academic governance is seen as too slow, inexpert and unresponsive and its sphere of influence is mediated by professional management. This issue has the potential to redefine the role of the academic staff. They are the guild around which the university is built. While they may be extremely apprehensive about the growing influence of professional administrators, they are themselves now assisted by a large number of adjunct professionals, some of whom will never attain full professional status. This so-called "underclass" describes the increasingly unionised elements of adjunct staff in the United States, whether they are graduate assistants or individuals who teach on contract a specific course with none of the privileges of staff status. Market-related revenues have certainly exacerbated this increasing reliance on adjunct staff and support staff with a corresponding loss of internal coherence.

Potentialities of new revenues

While we need to be sensitive to negative impacts of market-related revenues, we should also weigh their potentialities. If diminished state support is accompanied by decreased regulation, it may provide for greater flexibility and speed of decision making as well as reducing the costs of reporting requirements. The close association of higher education and state agencies has also created a complex array of bureaucratic processes. Changes that simplify this relationship have made it possible for institutions to be more responsive and agile, especially in matters of academic staff appointments and in improvements to research facilities.

If tuition fees are either an unavoidable consequence of diminishing state support or a deliberate effort to assign a private benefit to higher education, then it is possible to use them as a redistributive social policy. A shift from low to moderate tuition fees combined with well-funded, need-based financial aid policies may actually create a more equitable allocation of higher education expenditures. At both the institutional level and at the broader level of higher education systems, students from low-income families are under-represented and it is more likely that an average student from an affluent family will continue on to higher education than an above-average student from a poor family. Depending on the degree to which incomes and wealth are taxed progressively, low tuition fees may be a massive subsidy by low-income taxpayers to those who could afford to pay higher tuition fees.

We also often underestimate the opportunities created by market-based policies and revenues to loosen the hold of disciplinary and departmental structure over curriculum and instruction. The intellectual division of labour of most US institutions was established at the close of the 19th century. These developments defined the academic organisation of most of the country's universities in the 20th century. New programmes and interdisciplinary ventures have usually found it difficult to establish themselves in this vertically organised structure. Disciplines dominate the institutions and interdisciplinary innovations usually require funding that does not conflict with existing allocations. Special government programmes, foundations and institutional endowments initially nourished many new areas of interdisciplinary activity that more closely reflect contemporary understandings of how issues and problems need to be approached. These new structures for the most part continue to exist on the fringes of the university. An important task for institutional leaders is to use the opportunity external funding has created to bring these new structures into the centre of teaching and research activity.

The policy environment in the United States

Of all the sources of new revenues, tuition fees have attracted by far the most political discourse. Precisely because of the under-representation of low-income students in institutions of higher education, the public policy debate about tuition fee levels in the United States is skewed towards the interests of middle-income families who comprise by far the largest proportion of all students. For long low tuition fees within the public sector of higher education were viewed as an entitlement irrespective of income and most states also provided generous levels of financial aid to assist in the higher costs for those who attended independent institutions. Although the debate about increased tuition fees is often phrased in terms of diminished access for economically deprived families, the political response to this issue is sustained by the concerns of a broader segment of middle-income families who view tuition fees as a lost entitlement. The more progressive outcomes of need-based tuition fee policies that would use higher tuition revenues to fund low-income students while placing a higher financial burden on the affluent for long occurred gradually and without any declarations of overt intentions.

Under conditions of inadequate public funding, higher education cannot be a universal entitlement and increased tuition fees become one strategy to charge those who can afford to pay and to provide need-based financial assistance for those less able to pay. Many of the long-established independent institutions in the United States have for long charged high tuition fees but have also developed needs-blind admission policies. Institutional resources are used to supplement state and national sources of student financial aid but the success of this process depends on the size of the universities' endowment.

Since these changes in the funding of higher education have occurred in a piecemeal fashion over two decades or more, it is only recently that policy makers have recognised that the historic compact between the public support of higher education and their expectations of that public investment has almost collapsed. Today, at both the state and federal level, the tax base or low tax policies can no longer sustain access at levels public authorities would wish them to be. Although there is a continuing rhetorical debate about the access of low-income students to higher education, the political reactions to the recent increased rate and magnitude of tuition fee levels are based on concerns about the access of middle-income families to higher education as well as about the cross-subsidies of need-based aid.

Throughout the world, a political dialogue about the necessity for and cost of high access and global competitiveness continues. An older social compact that allowed free tuition to all institutions of higher education necessitated a public investment based in no more than a quarter of the age group, 18 to 25, in those institutions. At the same time the costs of research were still modest and it was possible for all universities to sustain expectations of becoming a comprehensive research university. The pressures of other social priorities combined with fiscal policies that face either an aging population or high levels of immigration are now in conflict with that older social compact.

A new social compact will presumably be needed to reconcile diminished or at best stable levels of public support by means of tuition fees and other market-related revenues. That compact will no doubt vary from state to state and country to country. Despite these variations, there will also be an underlying discourse on the cost and price of higher education and questions about the degree to which alternative learning models, perhaps based on instructional technology, might improve outcomes and reduce costs. These pressures were initially derived from government policies designed to improve the effectiveness of public investments or to justify diminished levels of public investment. In the United States and perhaps elsewhere concerns about price and cost are also attracting the attention of the business community and provoking the direct agitation of students and their parents about an apparently lost entitlement. Clearly, as the private costs of higher education increase, the consumer as well as the government will exert pressure on the practices of higher education.

These same pressures will no doubt increase the proportion of the student population attending private proprietary institutions, particularly in countries where the public sector is relatively small and poorly funded. But in relatively advanced countries, proprietary institutions have also responded to the demand for further or adult education and especially to the demand for lifelong learning by those who have already completed an initial phase of higher education. Indeed, it is this rapidly expanding market that has sustained the growth of cross-border distance education and in this sense globalisation

does represent a direct impact of market processes on higher education. The massification of higher education in economically developed parts of the world has created a structure that will no doubt confront, adopt or compete with these exogenous developments, but in those parts of the world yet to experience massification, the outcome is less clear.

Globalisation is associated with convergent developments in higher education but while the diverse and growing funding needs of comprehensive research universities may well create an international standard, the enormous challenges of massification may result in a variety of different outcomes. Alternative learning models, the expanded applications of instructional technology and pressures to contain costs may support different institutional configurations of higher education. These pressures may well be greatest in regions where current capacities are far below immediate needs. Within more developed systems, the expanding demand for adult and further education combined with the need to address the rapid growth of knowledge itself may also result in changes within existing delivery systems or alternatively parallel providers. Perhaps the answer to these speculations is connected to a larger question. Is the current technological transformation in communications as critical to higher education as that associated with the invention of the printing press? The printing press certainly consolidated the place specific nature for the advancement of knowledge but the full implications of the current communications revolution on place based activities remains an unfolding event.

Concluding observations

The impacts of market-related policies and revenues on higher education are not uniform. There are, of course, some direct threats. The public and social priorities of higher education may be lost. In particular, equitable access will be threatened if rising tuition fees are not accompanied by generously funded need-based financial aid. A myopic commitment to utilitarian goals will certainly undermine the pure or serendipitous search for knowledge and perhaps distort the balance and range of curricular developments. The revenue sources needed to fund staff research can influence the nature of that research and threaten the open communication of the results. Threats to the purpose and coherence of higher education are, in fact, as old as our institutions. They have come from the church and from the State as well as from influential private interests.

Certainly, there has been no greater threat to higher education than the authoritarian state. Periods when higher education was at its lowest ebb were those times when an authoritarian state squeezed the intellectual freedom out of the higher education system. Thus some of the greatest threats are

rooted in higher education's connections to national purposes and its vulnerable dependency on state funding.

As institutions of higher education clarify their values to cope with globalisation it would be dangerous to believe that they had at one time a highly unified moral structure that would have protected them from the pressures they face today. In responding to insurgent external pressures, they should not invent or indulge in arguments that reject criticisms of their own status quo. If they do share an overarching value, it is grounded in the role of universities as places of disputation, scepticism and questioning. Those values may well be critical as leaders in higher education attempt to confront themselves with the changes that they themselves need to make to their institutions.

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The University and Its Communities

by
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This article analyses the engagement of universities with the community in three domains: the consequences of the university simply "being there", contractual and other partnerships, and the relationship between the institution and its members. The consequences are then explored for the values espoused and practiced by the universities, including the possibility of their codification into a set of "ten commandments".

This paper proposes that the university's civic and community engagement can be described in three domains. It also explores different approaches to the declared values of the higher education institution and presents "ten commandments" for the university as guidelines for ethical behaviour.

Types of engagement

First order engagement arises from the university simply "being there." One of the primary roles for universities is to produce graduates who go to work (perhaps in areas completely unconnected with those they have studied); who play their parts in civil society (where the evidence suggests they are likely to contribute more wisdom and tolerance than if they had not been to university); who have families (and read to their children); who pay their taxes (and return a proportion of their higher-than-average incomes as graduates through progressive taxation); and who support "their" universities through gifts and legacies.

Also in this domain, universities guard treasures (real and virtual) in their museums, galleries and archives. They provide a safe place for the exploration of difficult issues or challenging ideas. They also supply material for a branch of popular culture (the campus novel, film and television series).

Together these features add resonance to the university as a social institution in its own right: at its best a model of continuity and a focus of aspiration for a better and more fulfilled life; at its worst a source of envy and resentment.

"First order" considerations also imply that universities should strive to behave well, to be ethical beacons. They have not always done do; some examples of bad behaviour include the following. They can offer misleading promotion and advice, to staff, students and potential students, about their real performance and intentions. As powerful institutions they can undermine and intimidate their members, their partners and their clients. They can perpetuate self-serving myths. They can hide behind specious arguments (narrow constructions of academic freedom, *force majeure* and the like). They can displace responsibilities, and blame others. They can fail the "stewardship test" (for example, by not assessing and responding to risk, by cutting corners, or by "letting go"). They can be bad neighbours. Above all, they can fail to tell the truth to themselves at least as easily as failing to tell the truth to others.

Second order engagement is generally structured and mediated by contracts. In this domain the university produces graduates in required disciplines and professional areas (whether directly or indirectly required to do so). It responds to perceived needs for particular skills, or for professional updating, or to more general consumer demand for courses in particular subjects. It supplies services, research and development, and consultancy at either a subsidised or a for-profit rate. The university may run subsidiary businesses – some as "spin-outs" or joint ventures, others in the "service" sector of entertainment, catering, conference organising or the hotel business.

Also in this domain the university is often an important local and regional economic player. It supplies employment – from unskilled occupations to the highly skilled. It provides an expanded consumer base, as students and staff are attracted to the institution and its locality. The university offers a steady, well-indemnified customer for goods and services. It is a source of development, such as of buildings, amenities, office space and green spaces, although this has its downsides, like controversy over planning, car-parking, congestion or "studentification".

The first domain affects the second in some complex and significant ways. The university, as a kind of moral force, is expected to behave better than other large organisations (which are similarly concerned about the bottom line).

Some of these cross-over effects are mild: if the university were late in paying its bills the community would be shocked; if the local hotel did the same thing they would shrug their shoulders. Other effects are economically more serious. In major partnerships involving important sums of money, the university rarely walks away from a done deal. Meanwhile the commercial partner can do so with apparent impunity, citing the business cycle, a change of management or policy, or simply "market forces".

And so, if universities are to make a steady and a positive contribution to their communities, the key holistic concept, and an essential backdrop for questions of leadership and management, has to be the rather old-fashioned notion of *stewardship*, both intellectual and moral, as well as the concrete and practical assets of the university itself. Who is ultimately responsible for the security, the ongoing contribution and the performance of the university?

The simplest answer to this question in the United Kingdom is the university itself, through its *governance*. The governing body is straightforwardly responsible for safeguarding the assets, including setting the budget; for setting the strategy (often called "character and mission"); and for employing and admitting the members (in the case of students, through delegation to the senate or academic board).

But sometimes these perspectives can be too narrow, especially if they are permanently refracted through the lens of institutional survival. There is a wider social interest in the higher education enterprise (essential to the "first order" relationships set out above), for which governors ought also to feel responsible. This can mean not being too precious (or too competitive) about boundaries, about status or about the reputational risk of association with other institutions in the sector. *Autonomy* is important, and is a source of strength, but it does not apply in a vacuum. Autonomy should not be used as an excuse for pushing others around, and it should be used to serve the sector as a whole as well as the single institution.

Third order engagement relates to commitments between the university and its members. Universities are voluntary communities: around the world they are rarely part of the compulsory educational infrastructure of the state. Thus they should not be regarded as agents of the state in creating citizens or "subjects" This is not to say, following the precepts of "first order" relationships, that universities do not play a role in ensuring social cohesion, in promoting community solidarity and in problem-solving for policy makers and practitioners of all kinds.

University members have a similar set of obligations as individuals; this is the dimension of *academic citizenship*. To be a full member of a university requires more than completing basic, obvious tasks. For traditional academics this has meant collective obligations: to assessment, to committee membership and to strategic scoping. There is a growing body of literature about such professional academic practice.

Since the late 20th century, such practice has been recognised as no longer belonging exclusively to the ranks of the so-called "faculty". The teaching, research and service environments are increasingly recognised as being supported and developed by university members with a variety of expertise (*e.g.* finance, personnel, estates, libraries, and information and communications technology), each with their own spheres of professional competence, responsibility and recognition.

At the heart of academic citizenship is the concept of *membership*. As consumers, students have entitlements and expectations. Both students and staff have responsibilities, along with all of their rights, within the community. Such responsibilities include the following.

- A special type of academic honesty, structured most clearly around scientific procedure.
- Reciprocity and honesty in expression, for example avoiding plagiarism by accurately and responsibly referring to other people's work within one's own.

- Academic manners, such as listening to and taking account of other people's views.
- Self-motivation and the capacity for independent learning, along with "learning how to learn".
- Submission to discipline (most clearly in the case of assessment – for both assessors and the assessed).
- Respect for the environment in which members of the college or university work.
- Adherence to a set of collectively arrived at commitments and policies (on equalities, grievances, harassment, etc.).

Approaches to values and ethics

Aware and protective as universities are about such responsibilities or values, how far should they codify and declare them to the community outside? On what can communities rely, in moral and ethical terms?

In 1968, the late Lord Eric Ashby was Master of Clare College, Cambridge, and Vice-Chancellor of the University of Cambridge. At the Association of Commonwealth Universities in Sydney that year he delivered an address, part of which was later printed in the journal *Minerva*, under the title "A Hippocratic Oath for the Academic Profession" (Ashby, 1969). Nearly 40 years later, it has a contemporary resonance as we struggle with the question of whether or not society's legitimate expectations of higher education should be codified.

Ashby saw the fundamental commitment as the higher education "teacher's duty to his pupils" to inculcate "the discipline of constructive dissent". "It has to be a constructive dissent that fulfils an overriding condition: it must shift the state of opinion about the subject in such a way that the experts are prepared to concur." This led him to a firm defence of academic freedom: "Innovative thinking is unpopular and dangerous. So society has to be indulgent to its universities; it must permit some professors to say silly and unimportant things so that a few professors can say wise and important things" (Ashby, 1969).

Ashby's focus was on the teacher. Some institutions in the United States believe that such an oath applies even more to students, to the extent of requiring graduates to affirm certain propositions about how they will proceed to live their lives in the light of their academic experience.

A second approach is more relativistic. It stresses context, the potential effects of *force majeure*, or the need to respond to what funders, customers or stakeholders think and say they want. Institutions claim to have sticking points, but they are also willing to negotiate and to compromise. This approach to ethics is – at its best – one of progressive engagement rather than (literally)

dogmatic assessment and response. There is a powerful sense of such a tendency in the Institute of Business Ethics and Council for Industry and Higher Education document *Ethics Matters* (IBE/CIHE, 2005). The report states categorically: "Universities and colleges are complex and autonomous organisations, each with a distinct history and culture. Ethical issues and priorities will not be the same in all institutions and each HEI [higher education institution] will need to tackle ethical concerns in a way that makes sense for its own organisation" (*ibid*., p. 7).

To say this is to commit to the philosophical view that ethics are situational and, to an extent, provisional. It is a view that resonates well with certain characteristics of the university project and community: that the academic enterprise is always wrestling with complex and often "wicked" issues. It is not, however, the only view. Others would argue that ethical issues and priorities are the same in all institutions, painful and awkward though this might be for their managers and many of their members; that the question of managing ethical issues does not arise: the issue is simply to manage their consequences. If this dialogue is to be worthy of the name, one needs to accept that keeping ethical commitments is hard and may have negative effects on the bottom line, and one should not sink into the pre-emptive "damage-limitation" mind-set that has come to characterise some institutional reactions to some legal and related codes. That way may lie the "surface compliance" traps of speech codes and political correctness, as well as the "displacement effect" of hiding behind other people's responsibilities (in his recent book, Bruce Macfarlane reports on how many academics are relieved when the responsibility for ethical judgement is taken away from them, and dealt with formally at a different level in the organisation [Macfarlane, 2005, p. 118]).

So there are problems with both of these approaches. Yet a third approach has been provided by Bruce Macfarlane. Following Alasdair MacIntyre, he sets out a list of virtues in *Teaching with Integrity: The Ethics of Higher Education Practice* (Macfarlane, 2005, pp. 128-129). Each has a virtuous "mean", as well as potential defects of vice and excess.

- Respectfulness.
- Sensitivity.
- Pride.
- Courage.
- Fairness.
- Openness.
- Restraint.
- Collegiality.

The problem here is that it turns being an academic into a form of moral rearmament. Macfarlane's goal is "the development of the moral character of lecturers in higher education" (*ibid*., p. 145). Many are uncomfortable with an approach that stresses "what people should *be* rather than what they ought to *do*" (*ibid*., p. 35).

Ten commandments

As a contribution to the debate, ten commandments for a higher education institution are scoped out below. The intention is in no sense satirical, or even sceptical. In technical terms, this is to take a *deontological* view of ethics (concerned with obligation) rather than an *axiological* view (concerned with judgements of value). Universities and colleges can choose to behave well, or badly, and it is in our social as well as moral interests to help them to do the former.

1. Strive to tell the truth.

Academic freedom, in the sense of following difficult ideas wherever they may lead, is possibly the fundamental academic value.

2. Take care in establishing the truth.

Adherence to scientific method is critical here (as in the use of evidence and the "falsifiability" principle), but so too is the concept of social scientific "warrant" and the search for authenticity in the humanities and arts (leading, in particular, to concerns about rhetoric and persuasion independently of the grounds for conviction).

3. Be fair.

This is about equality of opportunity, non-discrimination and perhaps even affirmative action. As has been pointed out, along with "freedom" in the academic value-system goes "respect for persons".

4. Always be ready to explain.

Academic freedom refers to freedom of speech and not protection from self-incrimination (Watson, 2000, pp. 85-87). It does not absolve any university member from the obligation to explain his or her actions, and as far as possible their consequences. Accountability is inescapable, and should not be unreasonably resisted.

5. Do no harm.

This where the assessment of consequences cashes out and presents the nearest equivalent to the Hippocratic oath, to strive "not to harm, but to help".

It is about non-exploitation, either of human subjects, or of the environment. It underpins other notions like "progressive engagement". It helps with "wicked issues", like the use of animals in medical experiments.

6. Keep your promises.

As suggested above, "business" excuses for retreating from or unreasonably seeking to re-negotiate agreements are much less acceptable in an academic context.

7. Respect your colleagues, your students and especially your opponents.

Working in an academic community means listening, as well as speaking, seeking always to understand the other point of view, and ensuring that rational discourse is not derailed by prejudice, by egotism or by bullying of any kind.

8. Sustain the community.

All of the values so far expressed are deeply communal. Obligations that arise are not just to the subject or professional community, or even to the institution in which one might be working at any given time, but to the family of institutions that make up the university sector, nationally and internationally.

9. Guard your treasure.

University and college communities, and those responsible for leading and managing them, are in the traditional sense "stewards'" of real and virtual assets, and of the capacity to continue to operate responsibly and effectively.

10. Never be satisfied.

Academic communities understood the principle of "continuous improvement" long before it was adopted by management literature. They also understand its merciless and asymptotic nature: the academic project will never be complete or perfect.

Conclusion

Value domains that are special to higher education exist, and in wider contexts they constitute higher education's contributions to civil society in all of its endeavours. These domains represent the three types of engagement outlined above. One is clearly about how knowledge is effectively and responsibly created, tested and used. Another is about how people responsibly interact with each other, including what they take from the university when they move

outside it. And the third is about the institutional presence of universities and colleges in a wider society.

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Note

1. A fuller version of this argument appears in David Watson (2007), *Managing Civic and Community Engagement*, McGraw-Hill/Open University Press.

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League Tables as Policy Instruments: Uses and Misuses

by
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This article examines the role and usefulness of league tables that are increasingly used to measure and compare the performance of tertiary education institutions. The article begins with a general overview and a typology of league tables. It continues with a discussion of the controversies they have generated, including the basis and the range of criticism they have invited, the merit of indicators they use as measures of quality, and the potential conditions that place universities at an advantage or a disadvantage in ranking exercises. The paper ends with a discussion of implications of league tables for national policies and institutional practices both in the developing world and in industrial countries.

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Introduction

"Things which are perceived to be real will be real in their consequences."

William I. Thomas

In 1963, the faculty and administration of the University of California, Berkeley objected strongly when the campus' radical student newspaper, *Cal Reporter*, took the initiative to publish student evaluations of their courses and professors (SLATE, 2003-2005). Despite this initial resistance, student evaluations have steadily become part and parcel of many universities' internal accountability mechanisms, not only in the United States but in a growing number of countries around the world. Today, there are even websites where any student can post a rating of his/her professors, no matter where in the world (see for example *www.ratemyprofessor.com*). More generally, over the past 20 years, universities that had traditionally enjoyed considerable autonomy are now being challenged to become more accountable for their performance and the use of public resources. Demands for increased accountability of tertiary education institutions have come not only from the students, but also from other stakeholders such as governments wary of rising costs, employers in need of competent graduates, and the public at large eager for information about the quality of education and labour market prospects.

Accreditation, cyclical reviews, external evaluation by peers, inspection, audits, performance contracts based on predetermined indicators, benchmarking and research assessments are among the most common forms of accountability. Some are initiated by the institutions themselves; some are imposed on tertiary education institutions externally by funding bodies, quality assurance agencies, committees of presidents and vice chancellors, as well as stakeholders at large. One example of the latter is institutional rankings by league tables. At this point, there are no fewer than 30 noteworthy rankings, ranging from broad rankings of national universities, such as *Maclean's* and *US News and World Report*, to comprehensive international rankings, such as *The Times Higher Education Supplement* (*The THES*) and Shanghai Jiao Tong University (SJTU), to research specific rankings, such as those of New Zealand and the United Kingdom, and even to idiosyncratic rankings such as those that claim to identify the most wired or most politically active campuses. This does not even include the countless Master of Business Administration (MBA) and other professional school rankings that exist all over the world.

League tables, also referred to as institutional rankings and report cards (Gormley and Weimer, 1999), are constructed by using objective and/or subjective data obtained from institutions or from the public domain, resulting in a "quality measure" assigned to the unit of comparison relative to its competitors. For the most part, the unit consists of tertiary education institutions, primarily universities. However, rankings are also done of colleges or specific subject areas or programmes across all institutions. Most of the discussion offered in this paper is based on leagues tables used to rank universities.

A wide range of indicators is used in league tables. These indicators are intended to measure how the system is set up (input variables), the way it functions and its internal efficiency (process variables), and its productivity and impact (output variables) relative to the performance of other universities and programmes.[1] Various media and other agencies that conduct comparative rankings place different levels of emphasis on the variables selected for comparison and this is most apparent in the weighting they accord to the indicators. Some rankings are done within a class of universities, allowing institutions with various missions and orientation to compete on a level playing field.[2] Others are done across the board, and yet others compare only specific programmes rather than the institution as a whole.

In some countries, the ranking exercise is undertaken as part of the accreditation process, either by the accreditation agency itself, in countries where one exists, or by the authority in charge of tertiary education. At one extreme, there is only a ranking of universities into three or four accreditation categories (*e.g.* Argentina). At the other extreme, the agency involved conducts a full-scale ranking of the institutions under review (*e.g.* Nigeria).

The expansion of league tables and ranking exercises has not gone unnoticed by the various stakeholders and the reaction they elicit is rarely benign. Such rankings are often dismissed by their many critics as irrelevant exercises fraught with data and methodological flaws, are boycotted by some universities angry at the results, and are used by political opponents as a convenient way to criticise governments. One thing they do not do is to leave people unmoved. With leagues tables becoming a growing industry, even in the developing world, their accuracy, relevance and usefulness have become issues of concern (*e.g.* Bowden, 2000; Clarke, 2002; Dill and Soo, 2005; Eccles, 2002). Are they totally inappropriate measures of quality in tertiary education that should be discarded altogether? Can they be adapted to become relevant to the information needs of developing countries? Do they have any beneficial use for public policy, accountability and consumer information purposes?

To answer these questions, this paper examines league tables and similar instruments that classify tertiary education institutions with a particular focus on the role and usefulness of these instruments as public information

mechanisms and as a measure of the quality of education that institutions offer to their students. The article begins with a general overview and a typology of league tables: their beginnings, patterns of growth and distinguishing characteristics. It continues with a discussion of the controversies they have generated: the basis and the range of criticism they have invited, the merit of indicators they usually include as measures of quality, and the potential conditions that place universities at an advantage or a disadvantage, particularly in international ranking exercises. These discussions lead to the final section of the paper which considers implications of league table rankings for national and institutional policies and practices both in the developing world and in industrial countries. Since existing rankings deal essentially with the university sector, this paper follows the same approach, acknowledging that some initiatives have taken place in the non-university sector as well, albeit on a much smaller scale.[3]

A typology of rankings and related accountability mechanisms

The beginnings

In a recent comprehensive review of league tables, Usher and Savino (2006) trace the origin of media-initiated comparisons of universities to 1981 and to Bob Morse at the *US News and World Report*. However, ranking of tertiary institutions by media seems to have been initiated about three decades earlier by Chesly Manly of the *Chicago Tribune*. The first ranking of tertiary institutions by academics or educational organisations occurred even before that, at the turn of the last century. Table 1, which is based in part on an article by Stuart (1995), shows the evolution of this activity from 1870 to 1982 when this exercise gained wider popularity and became what it is today.

It is interesting to note that, at the outset, academic ranking of institutions was carried out as one of several types of evaluation to determine institutional effectiveness. Other approaches included accreditation, surveys, self-studies, alumni studies, and evaluation of student achievement and opinion (Pace and Wallace, 1954; Stuit, 1960). Also noteworthy is the importance placed on reputation as a measure of quality and the peer review process as a reliable source and mechanism for generating data based on the rankings. For instance, as early as 1959, Keniston's methodology involved asking 25 departmental chairs of institutions, who were members of the Association of American Universities, to rate the strongest departments in their respective fields, using the quality of PhD work and the quality of the scholarship of faculty as primary criteria (Stuit, 1960). Webster (1986) has suggested that one reason for the historical reliance on reputational/peer review measures was that current sources such as citation indices like Thomson's simply did not exist (Clarke, 2006).

Table 1. **Chronology of ranking activities in the United States, 1870-1982**

1870-1890	The Commission of the US Bureau of Education begins publishing an annual report of statistical data, classifying institutions.
1910	The Association of American Universities urges the US Bureau of Education to reinstate classifications.
1910-1933	James Cattell, one of America's first psychologists, professor at the University of Pennsylvania and then Columbia, publishes "American Men of Science" in which he ranks institutions on the basis of the number of eminent scientists associated with an institution either as a student or a faculty member, and factors in the ratio of scientists at a given institution to the total number of faculty.
1925	Raymond Hughes, president of Miami University and later chair of the American Council on Education and its Committee on Graduate Instruction publishes "A Study of the Graduate Schools of America" in which he uses reputational ranking of 26 disciplines in 36 institutions.
1957	Chesley Manly of the *Chicago Tribune* publishes six different rankings: ten best universities, co-educational colleges, men's colleges, women's colleges, law schools and engineering schools.
1959	Hayward Keniston of the University of Pennsylvania publishes reputational ranking of 25 universities in a range of disciplines.
1966	Allan Cartter of the American Council of Education publishes "An Assessment of Quality in Graduate Education" which ranks 106 institutions.
1973-1975	Blau and Margulies conduct reputation ranking of professional schools.
1982	The US National Academy of Science commissions an assessment of research and doctoral programmes in the United States.
1982	Rankings begin to be extended to undergraduate education (*e.g. Fiske Guide to Colleges*, 1982; *US News and World Report*, 1983; etc.).

Patterns of growth

The systematic use of league tables as a widespread phenomenon, however, has a history of less than a decade. Eleven of the 19 league tables included in Usher and Savino's 2006 report have come into existence since the year 2000. Among the exceptions in the list are *US News and World Report*, Canada's *Maclean's University Rankings*, Poland's *Perspektywy/Rzeczpospolita Uniwersytet*, the United Kingdom's *The Times Good University Guide*, and China's *Guagdong Institute of Management Science Rankings* which have had a more extended history. It would not be farfetched to associate the proliferation in league tables with the massification, or unprecedented increase in enrolments, in tertiary education around the world.[4] In addition, the flood of cross border private and distance providers, the trend towards internationalisation of tertiary education, and the related increased stakeholders' demand for greater accountability, transparency and efficiency have all contributed to increased incentives for quantifying quality. Even the potential for economic gain for the producers of rankings has been suggested as a reason for this proliferation.

A different way to look at patterns of growth of league tables is to consider their regional concentration. Table 2 shows this distribution and, in addition, provides insight into the type of institution in each country that initiates the

Table 2. **Ranking systems worldwide, 2006**

Region	National and international ranking system
East Asia and Pacific	Australia (B), China (B, C, IB), Hong Kong (C), Japan (B, C), Korea (A), Malaysia (A), New Zealand (A), Thailand (A)
Eastern Europe and Central Asia	Kazakhstan (A, B), Poland (C), Romania (B/C), Russia (B), Slovakia (B), Ukraine (B/C)
Latin America and the Caribbean	Argentina (D), Brazil (A), Chile (C,D)
Middle East and North Africa	Tunisia (A)
North America	Canada (B, C, B/C), United States (C, IC)
South Asia	India (C, D), Pakistan (A)
Sub-Saharan Africa	Nigeria (A)
Western Europe	Germany* (B/C, C), Italy (C), Netherlands (A), Portugal (C), Spain** (B, C, IC), Sweden (C), Switzerland (B/C), United Kingdom (A, B, IC)

A = Ranking prepared by a government agency (Ministry of Higher Education, Higher Education Commission, University Grants Council, etc.). B = Ranking prepared by an independent organisation, professional association, university or preparatory school. B/C = Ranking prepared and published through a partnership between an independent agency and a newspaper or magazine. C = Ranking prepared and published by a newspaper or magazine. D = Ranking prepared by an accreditation agency. I = International ranking (IA, IB, IC and ID linking the international dimension to the type of institution conducting the ranking).

* Austrian and Swiss universities are included in the German ranking prepared by the Centre for Higher Education Development (CHE).

** A consortium of Spanish, Portuguese and Latin American universities, Universia, computes a ranking of Iberian and Latin American universities based exclusively on publications in internationally recognised journals (http://investigacion.universia.net/).

Sources: World Bank and CEPES data, and the following articles: Rocki, M. (2005), "Polish Rankings: Some Mathematical Aspects", *Higher Education in Europe*, Vol. 30, No. 2, July, pp. 173-182. Clarke, M. (2005), "Quality Assessment Lessons from Australia and New Zealand", *Higher Education in Europe*, Vol. 30, No. 2, July, pp. 183-198. DeMiguel, J.M., E. Vaquera and J. Sanchez (2005), "Spanish Universities and the Ranking 2005 Initiative", *Higher Education in Europe*, Vol. 30, No. 2, July, pp. 199-216. Liu, N.C. and L. Liu (2005), "University Rankings in China", *Higher Education in Europe*, Vol. 30, No. 2, July, pp. 217-228. WENR (2003), "Nigeria: NUC Releases 2003 University Rankings", September/October, *www.wes.org/ewenr/03Sept/Africa.htm*, accessed 3 April 2006.

ranking. As can be discerned, the majority of league tables are prepared and published by newspapers and magazines (*e.g.* in Canada, France, the United Kingdom and the United States). However, they can also be initiated by a government agency such as the Ministry of Higher Education or University Grants Council (*e.g.* in the Netherlands, New Zealand, Pakistan, Thailand and the United Kingdom), by independent organisations (*e.g.* in Germany and Spain), by universities or professional associations (*e.g.* the Shanghai Jiao Tong University ranking), or by accreditation agencies (*e.g.* in Argentina).

Table 2 reveals that the proliferation of this activity is not evenly extended across regions and countries. In the Middle East and North Africa, in Central Asia, and in Sub-Saharan Africa, with the exception of Nigeria, league tables are still non-existent. In contrast, they are increasingly more prevalent in industrial countries.

The consequence of league table rankings varies depending on the authority that conducts the exercise. In the first instance it can influence public opinion, as is the case with magazine rankings. In some cases, rankings can be deemed as one step in the accreditation process as is the case in Argentina and Pakistan. Finally, rankings of research outputs, as practiced in New Zealand and the United Kingdom, have a direct impact on the level of government funding flowing to concerned institutions.

Characteristics of league tables

Extensive discussions of typologies and critical analysis of methodological flaws associated with league tables are available in a number of recent review articles (see, for example, Bowden, 2000; Brooks, 2005; Dill and Soo, 2005; Liu and Cheng, 2005; Provan and Abercromby, 2000; Usher and Savino, 2006; Yonezawa *et al.*, 2002). These reviews provide useful insight into the conceptual and theoretical underpinnings of league tables, elaborate on the indicators used as measures of quality, and offer a critical assessment of the methodologies involved and their respective shortcomings. In the section below, the most salient points from this literature are highlighted.

League tables share several common characteristics. The first is that they include a set of indicators or clusters of indicators as proxies of quality. The most simplified classification of categories of indicators is input, process and output indicators. Usher and Savino (2006) offer a more elaborate framework with seven sets of categories: beginning characteristics (*e.g.* student entry qualifications such as high school grade point average or selectivity), learning inputs (*e.g.* institutional resources, both financial and material, available to students and staff, nature of institutional funding, etc.), learning inputs (*e.g.* staff qualifications, ratio of staff to students, workload assignments, contact hours, etc.), learning outputs (*e.g.* skills sets gained, retention and completion rates), final outcomes (*e.g.* employment rates, success rate in graduate school acceptance, job satisfaction, etc.), research (publications, awards, citations, impact factor, research budgets, research based chairs, number of patents, etc.) and reputation (*e.g.* from a range of perspectives including those obtained from peers, academic administrators and employers). The more reputable league tables typically include multiple measures for each dimension.

A second characteristic associated with many though not all league tables is that a weighted score is accorded to each set or cluster of indicators. The weightings vary across league tables and typically reflect the view of the table's publisher rather than being grounded theoretically (Brookes, 2005; Clarke, 2002; Provan and Abercromby, 2000). These weights are then used to generate a single rating. In September 1996, Gerhard Casper, the sitting President of Stanford University, wrote an open letter to *US News and World*

Report, criticising this exact issue (Casper, 1996). There is general consensus that this arbitrary and subjective element is a fundamental flaw in the methodology of league tables (Brooks, 2005; Provan and Abercromby, 2000). In its exercise to determine the international standing of Australian universities, the Melbourne Institute of Applied Economic and Social Research also takes the view that "… allocation of weights is a subjective exercise but it can be informed by surveys of peers" (Williams and Van Dyke, 2004). As one measure to reduce subjectivity, the exercise requires that domestic and foreign university heads place a percentage weight on each of the six categories used as measures of performance (*i.e.* quality/international standing of academic staff, quality of graduate programmes, quality of undergraduate intake, quality of undergraduate programme, resource levels and subjective assessment). One can wonder, however, whether this actually reduces subjectivity or merely spreads the responsibility for it.

The arbitrary nature is brought to light further with the observation that weightings and ranking formula can change from one year to the next as was the case with *The Times* from 1992 to 1997 (Bowden, 2000). Clarke (2002) tracked four types of changes introduced to the *US News* rankings of graduate professional schools as well as undergraduate liberal arts colleges over a period of six years. She found that overall, 85% of the changes pertained to weight, definition or methodology rather than the addition or deletion of indicators. She also found that changes were less prevalent at the undergraduate level compared to graduate level professional programmes and more salient in some professional rankings (*e.g.* law) than in others (*e.g.* medicine). On average, there were six to eight formula changes in the six editions of the *US News* rankings reviewed in her study and most changes were concentrated in a small number of indicators. Clarke (2002) concluded that changes introduced to each ranking formula made it impossible to compare a given school's performance over a period of several years based on the rankings it obtained from one year to the next. Comparison, however, was possible if only a fraction of the indicators that remained stable over time were taken into account.

A third aspect of rankings that needs to be taken into consideration in that context is the extent to which differences in rank among pairs of institutions can be made to appear larger than they really are, hence giving rise to an illusion of significance of the differences across institutions. But in reality, however, small differences between ranking variable scores of pairs of ranked universities may not be statistically significant. In extreme cases, the ranking variable may be so unreliable that one would be hard-pressed to make meaningful (statistical) distinctions between an institution at the 90th percentile and another at the 60th. This could lead to misrepresentation of the ranking results. For consumers and other stakeholders who may not be aware of the magnitude of difference, the

manner in which rankings are presented and the implicit message they convey could be seriously misleading.

A fourth characteristic of rankings pertains to the unit of comparison, which can be the institution or a particular programme (*e.g.* MBA). The international league tables consider the institution as the unit of comparison and do not discriminate among different types of institution or taking their relative size into consideration. The comparison of institutions that have different missions and resources from one another is considered to be a methodological flaw and hence inappropriate (Eccles, 2002) as well a socially irresponsible undertaking (Hodges, 2002). This practice also inadvertently disadvantages smaller institutions and those that are not research intensive and, as a consequence, are less likely to get high scores on indicators related to research and reputation (Brooks, 2005). At the national level, however, some league tables do rank institutions within the same category. For instance, *Maclean's* of Canada ranks three categories of institutions: medical/doctoral, comprehensive and primarily undergraduate.[5]

A fifth characteristic is the considerable reliance of league tables on the peer review process for generating data. Academic peers and administrators as well as employers are asked to rank institutions based on their view of institutional or programme reputation. Even though the editor of *The THES* 2005 league table has claimed stability in the process, others have criticised the practice on a number of accounts, including the following three: being confounded due to the halo effect, a bias in which the assessment of one quality influences the judgment of other qualities (*http://en.wikipedia.org/wiki/halo* effect) (Cartter, 1966; Diamond and Graham, 2000), being subjective due to the absence of a common frame of reference of quality for raters (Brooks, 2005), and being inaccurate because of raters' lack of familiarity with programmes they have been asked to rate (Brooks and Junn, 2002). German researchers have found, however, that while reputation indicators as they are commonly used tend not to be very useful, measuring reputation among academics does seem to constitute a reasonable proxy for research productivity (Federkeil and Berghoff, 2006). In any event, reliance on reputational data will always mean a strong bias in favour of long established universities and a serious disadvantage for new institutions or programmes.

With these characteristics in common, league tables share important similarities to other approaches to institutional evaluation, such as accreditation. Many of the indicators that probe into institutional resources, such as faculty and student data and completion and retention rates, are common in both. Similarly, the heavy reliance on the peer review process is a shared attribute.

Exercises such as rankings and accreditation procedures are significantly different, however, in that accreditation processes typically place greater

emphasis on programmes and measure institutional performance against delineated, absolute standards and criteria. Performance in league tables, on the other hand, is a relative matter as institutions or programmes are compared to one another on a set of criteria and the result is a rank ordering. Accreditation and institutional rankings/league tables are also different in the degree of emphasis placed on reputation and research output.

A thin line between love and hate[6]

One thing is certain: rankings do not leave institutions and stakeholders indifferent. If their publication is eagerly anticipated by students, they are often dreaded by university administrators. International rankings generate pride and anger, and the press and political parties are eager to use them as weapons against the government. In numerous examples from around the world, governments and institutions have responded with words and deeds to the power of university rankings.

In September 2005, for instance, the latest league table published by *TheTimes Higher Education Supplement* showed Malaysia's top two universities slipping by almost 100 places compared to the previous year. In response, the leader of the opposition called for a Royal Commission of Inquiry, notwithstanding the fact that the dramatic decline was partly due to a change in the ranking methodology.[7]

At times, fierce controversies have erupted around league tables and rankings, leading even to boycotts or lawsuits. In the early 1990s, for example, a group of student activists at Stanford University formed the "Forget US News Coalition" in an unsuccessful attempt to persuade universities and colleges to join them in a boycott of the *US News and World Report* ranking. In 1997, the president of Alma College in Central Michigan carried out a survey of more than 150 university and college senior officials to establish their views about the *US News* rankings, in an unsuccessful attempt to have them join him in boycotting the rankings (Provan and Abercromby, 2000, p. 7).

After *Asiaweek* published its first rankings of Asian and Pacific region universities in 1997 and 1998, 35 universities refused to participate in the survey in 1999; more than half were from China and Japan. The boycott led to the actual termination of the initiative. *Asiaweek* attributed the negative reactions partly to the fact that many universities had taken offence to their low ranking and partly to political motivations, as in the case of some Chinese universities upset by the inclusion of Taiwanese universities in the ranking. Interestingly, the University of Tokyo, which had been ranked number one each time, also chose not to participate anymore in 1999. The explanation provided by its president, Hasumi Shigehiko, was that "the quality of our

education and research cannot be compared with that of other universities" (Provan and Abercromby, 2000, pp. 6-7).

Controversies surrounding the *MacLean's* ranking of universities began when it was first introduced in 1991 and continue to this day. When it was first published, the ranking elicited strong negative reactions from the academic community for its poor wording and design, for ranking all types of institutions together irrespective of their mission, size and mandate, and for using a weighted index to arrive at one global score without disclosing the methodological framework. A number of changes, some fundamental, were introduced in the survey in subsequent years. Among them were the rewording of survey questions and the ranking of universities into three categories: doctoral/medical, comprehensive and primarily undergraduate. Following the 1992 survey, *Maclean's* also provided an explanation of the methodology it used for the survey. In 1993, Memorial University and Carleton University refused to participate in the *Maclean's* rankings as a protest to the methodology used (MUN, 1995). The concerns of the academic community about the flaws and methodological shortcomings were collectively captured in a letter that the newly installed vice chancellor and principal of McGill University, Bernard Shapiro, wrote in 1994 to the then co-ordinating editor of the *Maclean's* annual university rankings, Anne Dowsett Johnson. In the same year, 15 universities withdrew their participation from the exercise and in 1995, the group of francophone universities in Quebec joined Memorial, the University of Manitoba and the *Université de Moncton* as non-participants. These universities, however, continued to provide data similar to those requested by *Maclean's* to the Association of Colleges and Universities of Canada (AUCC) for comparison purposes.

Earlier this year, Peter George, the president of McMaster University, suggested that "there are a lot of universities that are thinking about not participating in the fall rankings" carried out by *Maclean's* despite the positive effects that rankings have had in standardising data and identifying areas of strength and weaknesses (Drolet, 2006, p. 29). In retrospect, the earlier withdrawal of a number of top research universities including the University of Toronto from the Graduate Survey that *Maclean's* conducted in 2005 and 2006 and the departure of Anne Dowsett Johnson from *Maclean's* were precursors to a more drastic recent development: the decision by 11 universities to withdraw from *Maclean's* 2006 annual rankings (Alphonso, 2006b).[8] With growing discontent and dissent on the part of major players, the *Maclean's* annual rankings may soon become history. Interestingly enough, *Maclean's* editors announced in turn that they would use "freedom-of-access" laws to obtain the data necessary to compile the rankings from those universities who decided to no longer participate (Alphonso, 2006a).

In March 2004, two universities in New Zealand successfully sued the government to prevent the publication of an international ranking that found them poorly placed in comparison with their Australian and British competitors. The vice-chancellors were concerned that the rankings would negatively affect their ability to attract fee-paying international students. In the end, the government was allowed to publish only the rankings of the national tertiary education institutions without comparing them to their peer institutions overseas. The rankings focused on the research performance of the 5 570 researchers in New Zealand's 22 tertiary education institutions (Cohen, 2004).

A similar situation has developed in the Netherlands, although the controversy has been less public than elsewhere.[9] After the Ministry of Education prepared its first set of rankings in 2005 and shared them with the concerned universities, one of the most prestigious universities in the country, outraged at finding itself with a lower than expected ranking, threatened to sue the minister. In the end, the university did not go to court but the ministry still went ahead and made the rankings public on its website.

Opponents question every element of the rankings, from the very principle of participating in an exercise seen as a typical product of an "Anglo-Saxon" culture obsessed with competitiveness or as an intolerable infringement on the universities' independence, to a systematic criticism of flawed methodologies, including the conceptual design of the surveys, the choice of indicators, the relative weight attached to each indicator and the data bases on which the rankings are done. The results are often dismissed as irrelevant or wrong. In many if not most cases, the criticisms have come from institutions dissatisfied with their position in the rankings. Ironically, universities with good results increasingly use the rankings as advertisement arguments, especially those trying to attract international students.

When institutions have chosen not to participate in ranking exercises, the consequence has not always been negative or harmful to the institution. Reed College's experience in the United States is a case in point. After its refusal to submit data to *US News and World Report*, it found itself among the lowest ranking colleges in the country, based on estimates compiled by the magazine. However, its pool of applicants since the ranking not only increased significantly but it also found that students with higher SAT scores were applying and being accepted. Today, Reed College is considered among the best and most selective liberal arts colleges in the Unites States.[10]

And the winner is...

"There's always an easy solution to every human problem – neat, plausible and wrong."

H.L. Mencken

Is the ranking exercise a fair game with unbiased rules for all institutions? It only takes a close look at the top 100 institutions on two international rankings carried out in 2005, the Shanghai Jiao Tong University (SJTU) and *The THES*, to discern that this is not the case. High ranking institutions share several common features that raise serious doubts about the validity of international league tables.

The first is that successful institutions in both SJTU and *The THES* league tables are located in countries where English is either the official language or the language of instruction. In the SJTU 2005 world rankings, 70 of the top 100 universities were located in English-speaking countries (53 in the United States, 11 in the United Kingdom, 4 in Canada and 2 in Australia). Similarly, in the 2005 *THES* world rankings, 60 of the top 100 universities were located in English speaking countries (31 in the United States, 13 in the United Kingdom; 12 in Australia; 3 in Canada, and 1 in New Zealand). Moreover, an additional 11 universities in the top 100 rankings conducted at least some their graduate programmes in English (Denmark, Finland, Israel, the Netherlands, Norway, Sweden and Switzerland). And these countries, along with institutions in Hong Kong, India and Singapore having graduate programmes offered in English, account for an additional 16 institutions in *The THES* top 100. The point here is not to isolate language of instruction as the cause of institutional success or lack thereof in international rankings. It is rather to state an apparent fact that one way in which institutions and academics advance their reputation is by their presence in scientific publications. Since citation indices compile data primarily from journals published in English, the facility with which academics can disseminate research results in English becomes a critical factor in enhancing institutional reputation. Needless to say that institutions functioning in English are more likely to engender such success.

The second is that the majority of institutions ranked in the top 100 in the two international rankings are those that have adopted key aspects of the American research university model and are located in countries that conduct national rankings of their own institutions, such as Australia, Canada, China, Japan, the United Kingdom and the United States (Table 3). It is reasonable to deduce that their inherent appreciation for indicators of quality which are more or less the same indicators used in ranking exercises, combined with their familiarity with rankings, a well-developed capacity to compile and report data, and the ease with which they can package their data, provides these institutions with an edge in international league tables.[11]

Table 3. **Top 100 international rankings by region and date of initiation or duration of ranking exercise, 2005**

Regions	SJTU	*The THES*	National league tables
Americas	57	35	
Canada	*4*	*3*	*Maclean's* (1991)
Mexico	*0*	*1*	
United States	*53*	*31*	*US News and World Report* (1983)
Asia/Pacific	8	29	*Asiaweek* (1997-2000)
Australia	*2*	*12*	
China	*0*	*4*	Guangdong Institute of Management Science (1993); Netbig Chinese University Rankings (1999)
Japan	*5*	*3*	*Asahi Shimbum* (1994)
New Zealand	*0*	*1*	
Hong Kong	*0*	*3*	
India	*0*	*2*	
Singapore	*0*	*2*	
South Korea	*0*	*1*	
Europe	35	36	
*Continental Europe**	*24*	*21*	*La Repubblica* (Italy, 2000); *Excelencia* (Spain, 2001)
United Kingdom	*11*	*15*	*The Times Good University Guide* (1993)

* Number represents institutions spread across 17 countries in the SJTU ranking and across 22 countries in *The THES* ranking.

Universities in Europe and North America combined comprised 92% of the top 100 rankings of SJTU. In this exercise, Japan was the only country outside the western world with five universities ranked in the top 100. In *The THES* rankings, the distribution was more even across universities in the Americas, the Asia/Pacific region and Europe. Tables 2 and 3, viewed together, highlight stark regional disparities and, in particular, the absence of nationally initiated rankings in some regions. Perhaps it is not a coincidence that no university made it to the top 200 ranking by *The THES* or to the top 500 by SJTU from countries and regions which do not have their own tradition of ranking tertiary institutions.

A third feature common to high ranking institutions is their research capacity supported by research funding and endowments and direct and indirect national investment in higher education research and development (R&D) expenditure. For instance, top ranking Canadian universities in international rankings are also the top universities in research income (CAUT, 2006).[12] Similarly, countries where the tertiary education R&D expenditure as a percentage of total domestic R&D is high stand a better chance of having the required resources to compete favourably in international rankings.[13] Clearly, international rankings favour research-intensive universities at the cost of excluding excellent institutions that are primarily undergraduate institutions and even those that are classified as "comprehensive" despite having extensive research activities and a wide range of programmes at the graduate

level. The top three universities in the comprehensive category in *Maclean's* 2005 rankings compared with *The THES* and SJTU rankings speak to this disadvantage (Table 4). The higher regard for research institutions arises from the academy's own stance toward research and teaching. That teaching is not regarded as highly as research has been voiced nowhere stronger than in Boyer's plea to fully recognise the scholarship of teaching as both legitimate and of equal importance to research (Boyer, 1990). This leaves the academy with the daunting task of developing objective and reliable metrics that can be accepted universally for assessing the quality of teaching.

Table 4. **Canadian universities rankings across different league tables**

Maclean's top three universities in the "comprehensive" category	SJTU ranking	*The THES* ranking
1. Waterloo	293	159
2. Victoria	291	–
3. Guelph	256	–

In a similar fashion, the process seems to recognise elite private institutions that receive significant research funding and are in a better financial position to attract top professors and researchers. Among the 20 top ranked universities in the United States, only two – Michigan State and Berkeley – are public. (In the United States, private universities pay their professors 30% more than public universities on average, [Chronicle of Higher Education, 2006].) In Japan, "the University of Osaka can be regarded as a top public institution that has improved its prestige and performance for almost 30 years. Even so, it would be almost impossible for it to be ranked above the University of Kyoto or the University of Tokyo" (Yonezawa *et al.*, 2002, p. 381). It is interesting to observe that countries where institutions secure a large proportion of their funding from private sources also stand out in international rankings. These include Australia (with about 52% private funding), Japan (around 51%), the United States (about 45%), Canada (about 42%) and the United Kingdom (about 28%) (OECD, 2005).

The points highlighted above raise serious questions about the validity of the impact of league tables on national and institutional policies, depending on the value that countries or institutions place on international or national rankings. For instance, if publishing in English is a condition of success in international rankings, will it be necessary for any institution aspiring to obtain higher rankings to consider adopting English as the language of instruction to reinforce scientific "thinking" in English despite a strong desire to strengthen or protect national identity? This was the case in Malaysia until the government recently signalled the need to put more emphasis on English. Should national governments increase investments in higher education and

R&D if they wish to see their institutions improve in the rankings? If internationalisation is an important element in league tables, should they support student and staff mobility programmes such as Erasmus Mundus, Canada-US-Europe Mobility and NAFTA Mobility programmes? Should all countries implement national rankings to prepare their universities for this activity at an international level? Should all institutions be encouraged to increase their revenues even if this entails increased privatisation in order to be able to provide the requisite resources for improved institutional performance as measured by a higher ranking?

Do league tables measure quality?

"*It is true that left-wing CEOs and flying fishes do exist, but neither is exactly representative of its species.*"

Michel Audiard

The correlation between indicators used in league tables and indicators of educational quality remains an illusive one for several reasons. Most significantly, there is no commonly accepted static definition of quality that would fit all institutions, regardless of type and mission. With a few exceptions (*e.g. Maclean's,US News and World Report*) league tables treat all universities alike. Turner (2005) has asserted that in the absence of both absolute standards of efficiency and the ability to differentiate between inputs, process and outputs, league tables end up comparing institutions with dissimilar comparators (p. 353).

The ambiguity of the construct of quality is best observed in the selection of indicators used in various league tables. In a comparative study, Dill and Soo (2005) took into account four dimensions, namely input, process, output and reputation variables to ascertain the degree of convergence (*i.e.* conceptual representation of quality) between the five league tables they had selected for their study: *Good Universities Guide* (Australia), *Maclean's* (Canada), *The Guardian* and *The Times Higher Education Supplement* (United Kingdom), and *US News and World Report* (United States). They concluded that there was convergence amongst the different league tables primarily because they included more or less the same input measures (*e.g.* faculty, students, financial resources and facilities). The divergence in process and output measures apparently did not influence their conclusion. In a more recent comparative study, however, Usher and Savino (2006) reported contradictory findings. Examining the indicators used across 19 league table, they assert that there is no convergence in the way quality is conceptualised by league tables. They associate the discrepancy between their findings with past findings to both their larger

sample (19 league tables) and the wider range of categories of indicators based on which comparisons were done (seven clusters of indicators).

Another measure of inconsistency in defining the construct of quality is the yield of rankings across various tables. Looking at the top 50 institutions ranked on *The THES* and SJTU rankings, only 42% appear on both lists: only one institution received the same ranking; 24% were within a range of five positions; 8% were within ten positions; and 22% were more than ten positions apart. Comparing the rankings given to Canadian universities in *The THES* and *Maclean's* rankings in the year 2005, the results were identical in the ranking of the top two institutions. Between *Maclean's* and *SJTU*, only one institution shared a common ranking, in the sixth position. In general, rankings were closer up to number eight and completely scattered beyond.

Similarly, the dramatic shift in position of institutions on the same league table from one year to the next reinforces the view that little relationship exists between an institution's ranking and its quality. Universities are complex organisations, notorious for their inability to change quickly. Nevertheless, in both *The THES* and the SJTU rankings, there have been institutions that have had spectacular rises and falls from one year to the next. For instance, in the 2005 *THES* rankings, Duke University in the United States jumped to 11th from being ranked 52nd in the previous year. Such drastic shifts are more likely due to manipulations in methodology rather than to a significant change in quality.

It is also enlightening to compare the results of accreditation and rankings in countries where data are available for that purpose. In South Africa, for example, the daily newspaper the *Financial Mail* has compiled and published a ranking of MBAs for several years. In 2005, the Commission of Higher Education's accreditation arm conducted an assessment of all MBAs in South Africa and ended up closing down a third of the existing programmes, including two foreign ones. Another third got only conditional accreditation. Interestingly, there was little correspondence between the rankings and the outcome of the accreditation process. In fact, quite a few among the shut down programmes were among the highest ranked MBAs. Since that episode, the *Financial Mail* has adjusted its methodology and changed the relative weights of indicators.

A second concern pertains to the choice of constellation of indicators and their validity and reliability as well as their comprehensiveness as a measure of quality (Brooks, 2005; Clarke, 2002; Dill and Soo, 2005).

> Ranking systems' authors believe that each indicator is a reasonable proxy for quality and that, suitably aggregated and weighted, these indicators constitute a plausible, holistic "definition of quality". What our results here show is that most indicators are probably epiphenomena of some underlying feature that is not being measured (a hidden X factor,

> which might be the age of the institution, faculty size, per student expenditures). (Usher and Savino, 2006, pp. 32-33)

Pike (2004) found that the National Survey of Student Engagement data did not bear a strong relationship to *US News* rankings, suggesting that student impressions of their educational experiences are influenced by different inputs than the institutional characteristics measured in the rankings (p. 14). Other findings related to the indicators and their validity and reliability as appropriate measures of quality have, at best, been inconsistent.

For instance, research related to beginning characteristics (attributes and abilities of incoming students, performance on national standardised tests, percentage of students receiving scholarships, institutional selectivity, international students) has shown that high school grade point average (GPA) correlates positively with academic performance (Hoschl and Kozeny, 1997; Houglum *et al*., 2005; Jensen, 1989; Meeker, 1994) and that generally, past performance is the best predictor of academic success (Himmel, 1967). However, there is also some evidence that is less conclusive. For instance, Ting (2003) found that for students of colour, non-cognitive variables were better predictors of academic success. Jenkins (1992) indicated that, in Canadian contexts, SATs were somewhat reliable in predicting academic success when they were used as a supplement to high school GPA. Similarly, Watkins (1986) found that Approaches to Studying Inventory (used in Australia) contributed to the prediction of freshman grades beyond entry achievement. Finally, van der Wende (forthcoming) found no empirical evidence that internationalisation was correlated with improved quality.

With respect to learning inputs related to financial and material resources, although Ramsden (1999) has suggested that these are "contributing factors to successful completion, levels of scholarly productivity, types of professional socialization, and rate of academic progress" (p. 13), he has not provided empirical evidence to support his assertions. As to learning inputs related to staff (faculty-student ratio, staff qualifications, contact hours, the way staff are deployed), Graunke and Woosley (2005) found that satisfaction with faculty was a significant predictor of GPA in the sophomore year. Similarly, Ramsden (1999) found that favourable student-staff ratios, a high proportion of graduating students continuing into further study and a high proportion of research qualified staff accounted for a large proportion of variability in research performance.

Concerning the final outcomes category of indicators (employment rates, percentage returning for graduate studies, income and job satisfaction), Bowen and Bok (1998) have asserted that even though results are generally positive, studies have not used national samples and have left out master's and professional school students.

Finally, regarding the categories pertaining to learning outputs (skills sets gained, retention, completion rates) and research and reputation, Brooks (2005) has asserted that there is no theoretical or empirical justification to link reputation, faculty research productivity, and student experiences and outcome with quality. Other criticisms point to the fact that not all disciplines value the same kind or source of publication. For instance, Bergh *et al.* (2005) have pointed out that certain types of articles are cited more frequently, disadvantaging certain disciplines and depicting a distorted view of institutional quality. Similarly, Moore *et al.* (2001) have stated that a smaller number of frequently cited papers enhance reputational capital more than a greater number of less frequently cited papers. Finally, based on alumni surveys and graduate employment records, Goddard *et al.* (1999) have claimed that employability is linked with degree rather than with attended university.

A third concern is related to the methodologies used to generate an aggregate and global score based on indicators that have completely different scales and are theoretically flawed, excessively simplistic and "in mathematical terms … indefensible" (Turner, 2005, p. 355).

Can rankings be used in a constructive way?

How does one explain the passion for university rankings, despite the fact that they have so many conceptual and methodological limitations? What advice should be given to governments, tertiary education institutions and the public at large for using the information provided by rankings in a constructive and critical way?

At the government level: rankings as proxy for quality assurance mechanism

In 1990, after the fall of the Berlin Wall, teams of academics from the West German Science Council were given the task of evaluating their counterparts in East German universities. As they proceeded to perform this mission, they realised that, in the absence of a tradition of evaluation in West German universities, they had to invent an appropriate methodology as they went. More recently, the ranking exercise conducted since 1998 by the Center for Higher Education Development (*Zentrumfür Hochschulenentwicklung*), an independent policy research agency, along with the German Academic Exchange Service (*Deutscher Akademischer Austausch Dienst*) and their media partner *Die Zeit* has become the first comprehensive system providing a panorama of quality indicators in Germany, a federal country where the main responsibilities for financing and overseeing the universities belong to the states. The survey incorporates data on a total of 132 universities and 148 technological institutes (*Fachhochschulen*), and more than 210 000 students and 21 000 professors (*www.daad.de/deutschland/studium/hochschulranking/04690.en.html*). Instead of

calculating a global ranking of institutions based on weighted indicators as *The THES* and SJTU do, the Centre for Higher Education Development (CHE, *Centrum für Hochschulentwicklung*) presents detailed survey data from thousands of teachers and students as well as third-party data, dealing with the universities and the technological institutes separately. To facilitate using the information generated by the collected data, the CHE rankings provide six main categories of indicators, along with sub-groupings. These include:

- *Academic studies and teaching*: e-learning, contact between students, contact between students and teachers, courses offered, study organisation, practical semester support, counselling, teaching evaluation.
- *Equipment/capital resources:* computers, media equipment, classrooms, library facilities, workstations.
- *Job market and career-orientation:* employment market-related programmes.
- *Overall opinion of students and professors*: overall assessment, research reputation, professors' (insider) tip.
- *Research*: doctorates, internationally visible publications, other publications, third party funding.
- *Study location and higher education institution:* intramural-level sports, low rent/cost of living, small college location, intercollegiate sport.

Anyone who wants to consult the data (published by the German newspaper *Die Zeit* and also available online) can look at the standing of each university, or even a specific academic subject, against a particular indicator or set of indicators.[14] Readers can even constitute their own ranking based on the indicators most relevant to them. The approach developed by CHE presents the additional advantage of avoiding data biases linked to self-reporting by universities. The Austrian and Swiss universities have recently joined this exercise, accepting to be benchmarked against the German universities, with the exception of the Austrian medical schools that have participated but refused to have their results published.

In Pakistan, after a national task force set up in 2000 presented a distressing diagnosis of the tertiary education situation in the country – one of the lowest enrolment rates in the world (3%), poor quality, insufficient funding –, the government launched a large-scale reform spearheaded by the newly-established Higher Education Commission (HEC). Besides drastic changes in governance and financing arrangements (election of university leaders, creation of boards of trustees, increased financing, introduction of a funding formula, etc.), the reform also envisages setting up an accreditation agency to monitor and enhance quality in both public and private universities in Pakistan. But conscious that it will take a few years to effectively accredit a significant number of programmes, the HEC decided to carry out a ranking exercise as a shortcut to

assess the quality of existing tertiary education institutions (based on direct observations and interviews conducted in August 2005 and March 2006).

The ranking of universities in Pakistan developed out of a direct mandate given to the HEC in 2002 to evaluate the universities in a way that promoted rapid and comprehensive development of the entire tertiary education system, particular to support the country's place in the world economy (*www.hec.gov.pk/quality/Mandate.htm*). By comparing the inputs and outputs of the country's institutions, Pakistan has established a mechanism for rewarding excellence and investing in improvement in institutions that are currently lacking. The five main ranking criteria used by the HEC are similar to ranking indicators in many other countries. The breakdown of indicators is *i)* faculty qualifications (25%), *ii)* research output (25%), *iii)* students (20%), *iv)* facilities available (15%) and *v)* finances (15%). The fact that these rankings favour research output and faculty qualifications over other indicators, such as the quality of student inputs and campus infrastructure, may imply that Pakistan has fully adopted the Western ideals for universities, and this weighting of indicators certainly warrants further debate about its relevance for developing Pakistan's tertiary education system today.

The Advisory Committee overseeing this ranking exercise, comprised of HEC officials and university representatives, had to decide whether or not to make the results public. Under vehement protests from one of the leading vice-chancellors, whose public university had scored low, the committee agreed not to publish the results. What the HEC did instead was to share key benchmarking data with each university, notably its relative position against each criterion used in the rankings. For example, University X was told that, with respect to the proportion of professors with a doctorate, it scored in the lowest quartile compared to all universities in Pakistan.

Despite the general outcry against the publication of the rankings, this experience has had at least two positive consequences. In the first place, it has forced the universities to take data collection much more seriously. When confronted with the first draft of ranking results, most university representatives dismissed them, arguing that the data were blatantly wrong. But when it was proven to them that the data were exactly those submitted by their respective university, they realised the importance of collecting and sharing accurate data. It appears that the second round of data collection has yielded a much more reliable set of data.

These rankings have allowed the government, for the first time in Pakistan's history, to engage in a professional dialogue on the quality of education with the universities based on an instrument that has been jointly developed. Imperfect as these HEC rankings may be, the conversation around specific factors that are somehow related to the quality of teaching and learning is an important first

step towards developing a culture of quality in the Pakistani tertiary education system. It should also be noted that some of the criteria included in the calculation of the rankings, such as the proportion of professors holding a PhD, are also part of the new funding formula used for the distribution of the budget to the public universities.

Thus, the Germany and Pakistan examples illustrate that, in countries without established evaluation or accreditation mechanisms, rankings can be used effectively to monitor and enhance quality. But it is important to underline that governments cannot expect universities and other tertiary education institutions to work towards improving the quality and relevance of their programmes on the basis of rankings or any other quality assurance mechanism unless they enjoy sufficient autonomy to be able to introduce significant curriculum and pedagogical reforms on their own initiative. Having access to additional resources to support these reforms, including the ability to finance the recruitment of top professors/researchers from the country or from overseas, is also essential. In the case of Pakistan, for instance, the Higher Education Commission has set up several financial windows to help those universities willing to upgrade the quality of their programmes.

Finally, it is interesting to note that rankings are not used only by governments in their national context, but also increasingly in an international perspective. In Mongolia and Qatar, for example, the authorities have decided to restrict scholarships for studies abroad to students admitted to a highly ranked university. Qatar's Institutional Standards Office compiles a list of eligible universities in destination countries based on the Shanghai and *The THES* rankings (*www.english.education.gov.qa/section/sec/hei/sco/univlist*). In the same vein, donor agencies and foundations that provide scholarships for students from developing countries are looking at the results of rankings to establish their list of eligible destination institutions. The UK Treasury has even offered to issue fast track visas to graduates of the top MBA programmes based on the *Financial Times'* ranking. Even some of the Canadian universities that have recently decided to withdraw from the *Maclean's* rankings continue to rely on the results of international rankings to choose foreign institutions considered worth establishing a partnership with.

Utilisation by tertiary education institutions: rankings as a benchmarking tool

In spite of the controversial nature of rankings, there seems to be a persistent desire on the part of universities to assert their international rank by the position they clinch on league tables. In the year 2000, the University of Toronto's president expressed that he was "both relieved and gratified that we have once again received the number one ranking among research universities in Canada" (*The Bulletin*, 2000, cited in Provan and Abercromby, 2000, p. 4).

Universities in emerging economies are equally eager to become "world-class" universities, and they usually define their goal as being recognised among the top universities in international rankings.

Rankings are increasingly used by institutions for goal setting purposes, as the following example illustrates. Clemson University, a land grant university in South Carolina traditionally focused on agriculture and mechanical engineering, has undertaken a radical transformation process in recent years. Based on an in-depth analysis of the transformation of South Carolina into one of the leading automotive regions in the United States, Clemson University formed a strategic partnership with BMW aiming to recreate itself as the premier automotive and motor sports research and education university. Its new vision statement specifically mentions the target of becoming one of the country's top-20 public universities (as measured by *US News and World Report*), up from rank 74 four years ago and 34 in 2005 (Przirembel, 2005).

Marc (2004) examined the impact of the *US News and World Report* rankings on a variety of variables and concluded that even though rankings have differential impact on public and private schools, "many schools' admission outcomes are responsive to movements in the rankings". The following two excerpts from the minutes of senate and board of governors meetings of two Canadian universities illustrate well the extent to which rankings are deemed important and ways in which the highest academic bodies seek to respond to them.

If rankings prompt a retrospective analysis of institutional performance, leading to setting goals to support institutional and national visions, then they can be considered as having a positive impact toward improvement. For instance, countries such as Japan have found rankings carried out at the national level to be a useful exercise, forcing systematic data collection and benchmarking, and leading to implementation of important reforms toward quality improvement (Yonezawa *et al.*, 2002).

As the relative score on various indicators shows, institutions can excel in different areas even though their overall ranking may convey a different message.

> The various disciplines also throw up different leaders. Academics see Harvard as pre-eminent in the arts, medicine and social sciences, but Cambridge leads in the sciences and MIT in technology. Such variety of outcomes underlines that universities have different missions and different strengths that make them difficult to compare. There is no sign that a high-ranking university in our table is better than one more lowly ranked. (O'Learny, 2005)

One of the major risks of relying on ranking results is when the exercise becomes the goal itself instead of serving as a measure of progress towards

Box 1. **Excerpts from senate and board of governors meetings in Canadian universities**

Laurentian University

Minutes of the 204th Regular Meeting of the Board of Governors of 29 November 2002.

3.2 *Maclean's* Rankings.

Dr. Woodsworth reported on the encouraging results published in *Maclean's*, and further that our institution has improved in a number of categories including Alumni support and the reputational survey. A special meeting of the Management Team has been called to discuss mechanisms and methods to improve the University's performance in the rankings (*www.laurentian.ca/president/governors/minutes_e.php?id=204, accessed 6 May 2006*).

Simon Fraser University

Senate Meeting of 1 December 1997.

14. Classes Taught by Tenured Faculty.

Reference was made to the *Maclean's* issue relating to university ratings. Although it was nice to see that Simon Fraser University was ranked at the top of the overall ranking in the comprehensive category for the second year in a row, concern was expressed about the low ranking SFU received in the "First Year Classes Taught by Tenured Faculty" category. Senate was advised that the *Maclean's* information is provided by Analytical Studies and SFU has consistently been below 40% in this category in recent years. Senate was informed that the Vice-President Academic has previously raised this issue with the Deans and that these statistics were of concern to his office. The methodology used by *Maclean's* to collect and analyze the data was questioned and the Vice-President Academic was asked to make further investigations into this issue (*www.sfu.ca/Senate/archives-Senate/SenateMinutes97/Sum_1297.html, accessed 6 May 2006*).

quality. It would be to the advantage of academic institutions to take a proactive role in identifying indicators that are true measures of quality education. Academics, after all, possess the expertise and know-how to arrive at evidence-based conclusions. For instance, by generating meaningful and appropriate indicators of teaching quality, they can begin to take a resolute step toward realising the scholarship of all academic activities including research, teaching and learning (Boyer, 1990). Institutions also have a role in this regard: they need to assume a leadership role in collaborating with media, governments and other agencies that initiate rankings to ensure that the vision of quality used

in rankings is grounded both theoretically and empirically, is comprehensive and is accepted by all stakeholders.

Within universities, departments and academic units are in the best position to identify the peers with whom they choose to benchmark their own performance. If institutions want to be recognised as high performing, they must also be able to provide the resources to their units in order to enable them to benchmark with their strongest peers. By being explicit about their mission, honest about their performance and transparent about the way in which they use their resources, institutions as well as academic units can be much more effective in delivering what the popular media set out to do by disseminating league tables widely.

One caveat, though, is that smaller, regional universities may feel a perverse incentive to acquire more of a research focus and consolidate into larger universities that would fare better in world rankings for sheer reasons of size. Mergers to that effect seem to be under consideration in Denmark and Finland, and even in larger countries like France where the Department of Higher Education is openly encouraging universities to regroup themselves into larger and stronger regional "poles of excellence".

When the public applies pressure

The press is often criticised for using rankings as a gimmick to boost sales. The commercial aspect was indeed an important consideration when *US News and World Report* started its college ranking 20 years ago (Morse, 2006). However, the mass media can play a genuine educational role by making relevant information available to the public, especially in countries lacking any form of quality assurance mechanism. In Poland, for example, when the transition to the market economy started in the early 1990s and many private education institutions began to operate, there was a thirst for information about the quality of these institutions, which pushed the owner of the *Perspektyvy* magazine to initiate the country's first ranking (Siwinski, 2006). Similarly, in Japan, for many years the annual ranking published by the *Ashi Shimbun* newspaper fulfilled an essential quality assurance function in the absence of any evaluation or accreditation agency.

The Colombian accreditation experience is also a valid illustration of this point. Colombia was the first country in Latin America to set up a national accreditation system in the mid 1990s, but the number of programmes reviewed by the new accreditation agency remained relatively low in the first years. Since the accreditation law made the process voluntary, the most prestigious universities, public or private, did not feel any compulsion to participate. Starting in 2000, however, the country's main newspaper, *El Tiempo*, started to publish the full list of accredited programmes twice a year to help students

choose among the various offerings; since then the universities have felt increasing pressure to join the accreditation process as students have showed a marked preference for accredited programmes.

Another important merit of rankings is to stimulate public discussions around critical issues affecting the tertiary education system that are often ignored either for lack of a broader perspective or out of reluctance to challenge established practices or vested interests. A good example is the debate that started in France when the Shanghai Jiao Tong University world rankings were published for the first time. After observing that the best French university was ranked 65th, the daily paper *Le Monde* ran an article on 24 January 2004 entitled "The Great Misery of French Universities". Surprisingly, none of the university presidents or union leaders interviewed for this article criticised either the principle of calculating a ranking or the methodology of the SJTU ranking. Instead, they focused on the problems facing their institutions, looking especially at the lack of budgetary resources as one of the main explanations for the demise of the French university system.

Box 2. **Watching the rankings: The French experience**

Each year, when Shanghai's Jiao Tong University publishes its world ranking of universities, France responds with a mix of indignation and consternation. Indignation, because French educators complain that the system favours "Anglo-Saxon" universities and makes no allowance for France's unusual division into elite *grandes écoles* and mass universities. Consternation, because not a single French university makes it into the world's top 40. Its best-placed institution – Paris VI – manages only 45th place.

Source: The Economist (2006), "Lessons from the Campus", Special Survey Section on France, 28 October.

A few months later, one of the country's leading education economists, François Orivel (2004), wrote a very lucid article analysing the reasons why French universities are not internationally competitive. One of the principal factors identified was the fact that French universities are not allowed to select the most academically qualified students. A unique feature of the French tertiary education system is the dual structure which separates the top schools (*grandes écoles*), which recruit the best students through competitive national examinations, and the universities to which all secondary school graduates have automatic access. Since the *grandes écoles* are predominantly elite professional schools that conduct little research, most doctoral students in the research universities do not come from the most academically qualified

student groups, unlike the practice in more successful university systems in Japan, the United Kingdom or the United States. The other important factor is the absolute lack of competition among universities. All universities are treated equally in terms of budget and assignment of personnel, with the result that there are few centres of excellence with a large concentration of top researchers.

Another interesting example comes from Brazil where in 1996 the Ministry of Education introduced an assessment test meant to compare the quality of undergraduate programmes across universities. In a way, it could be described as a ranking exercise in the sense that university programmes could be categorised based on the average score of their participating students (on a scale from A to E). Even though the results of the *Provão* did not count towards the marks of graduating students, at first it met with opposition and resistance. The students were reluctant to take the test, and the universities themselves were not keen to encourage their students to participate, especially after the first rounds showed that some of the top public universities had scored less than expected while some students from lesser known private universities had achieved good results. But, over time, the *Provão* became more accepted and, increasingly, employers asked job applicants to share their test results, thus making it a strong incentive for students to participate (Renato de Souza, 2006). The *Provão* results even influenced students in their choice of tertiary institution. Between 1996 and 2002, the demand for courses in private institutions that had been evaluated positively (grades A or B) grew by about 20%, whereas the demand for courses with a negative assessment (grades D or E) declined by 41% (JBIC, 2005).

Similarly, in Nigeria, after the National Universities Council initiated a ranking of professional programmes in 2001, even going as far as closing down a number of programmes among the weakest, private sector employers started to regain confidence in local universities and to hire graduates of the highest ranked programmes (Okebukola, 2006).

Conclusion: the way forward

> "*I come to the dialogue about rankings with a good deal of scepticism about their ability to serve as effective indicators of institutional quality. But I think it's fair to say that whether or not colleges and universities agree with the various ranking systems and league tables findings is largely irrelevant. Ranking systems clearly are here to stay. As a result, I've come to the conclusion that it is important to learn all that we can about how these ranking systems work, and to provide a framework for those who do ranking so that they can improve and enhance their methodologies.*"

Jamie P. Merisotis, President, Institute for Higher Education Policy, at a meeting of the Council for Higher Education Accreditation, 26 January 2006

The world seems to be obsessed with rankings in every walk of life. Countries are ranked for their performance in all possible domains, from the Olympics to the quality of life. Even Mozart's musical pieces were ranked as the planet celebrated his 250th birth-year anniversary. It is therefore not surprising that, in the present tertiary education world characterised by increased global competition for students, the number of league tables of universities has grown rapidly in recent years.

The stakes are high. Governments and the public at large are ever more preoccupied with the relative performance of tertiary education institutions and getting the best perceived value as consumers of education. Some countries are striving to have "world-class" universities that will spearhead the development of a knowledge-based economy. Others, faced with a shrinking student population, struggle to attract increasing numbers of fee-paying foreign students. Just as scarcity, prestige and having access to "the best" increasingly mark the purchase of goods such as cars, handbags and blue jeans, the consumers of tertiary education are also looking for indicators that enhance their capacity to identify and access the best universities.

At the same time, many analysts consider ranking across countries worthless given the huge differences in essential characteristics of tertiary systems and their respective social and cultural contexts. Sources of funding, governance patterns, degree of management autonomy, differences in institutional missions, availability of reliable data and the potential to manipulate statistics are important dimensions that contribute to variation and that support their claim for the meaninglessness of this activity.

Notwithstanding their controversial nature and methodological shortcomings, university rankings have become widespread and are unlikely to disappear. Possible reactions, in the face of this rapidly expanding phenomenon, are to ignore, dismiss or boycott any form of ranking. Another, less extreme response is one that seeks to analyse and understand the significance and limitations of ranking exercises. The recent international experience with league tables, which this article has tried to review, provides a set of lessons that can help policy makers, institutional leaders and the public at large make more informed decisions about the usefulness of ranking mechanisms. Based on the discussion presented earlier, the following general recommendations can contribute to making the ranking exercise beneficial to institutions, governments, students, parents and the public, as they were originally intended to.

Be clear about what the ranking actually measures. Notwithstanding the ambiguities surrounding the construct of quality, organisations, government bodies or media that rank institutions should be explicit about their definition

of quality. They should also specify what is it they measure or do not measure, the purpose of their ranking, and the audiences for whom they do the ranking. The validity, reliability and comprehensiveness of selected indicators can be better discerned in light of this information and taking into account the scope of the academic tasks (*e.g.* teaching, research, etc.) and the types of institutions being assessed. Furthermore, they should make the raw data upon which they base the ranking widely available and the calculation process transparent so that their derived rankings can be verified independently. Information on the statistical significance of pair-wise comparisons of institutions being ranked should be provided in a transparent way. An example of good practice in this regard is how the International Association for the Evaluation of Educational Achievement (IEA) publishes multiple comparison tables for means of countries ranked on their assessments. From this kind of information one can learn, for example, that although Australia was ranked 14 out of 46 among participating countries in the IEA's 2003 eighth grade mathematics assessment, its mean score was not statistically significantly higher than that of New Zealand, with a rank of 21.

Use a range of indicators and multiple measures rather than a single, weighted ranking. The definition of quality in the context of tertiary education implies enabling students to succeed in meeting their aspirations, the expectations of society, the demands of governments, business and industry, and the standards set by professional associations (Gola, 2003). League tables should thus use a wide range of indicators, placing greater emphasis on output and outcome indicators to ensure that every dimension of quality gets factored in the evaluation. Multiple sets of indicators will yield multiple scores rather than a global score, thus bringing to light areas of strengths as well as areas of weaknesses. The inconsistency between ranking results of different league tables and the absence of significant differences between institutions, despite wide spreads in their position relative to one another, suggest that rank ordering entire institutions is meaningless. It is more appropriate to rank in clusters of institutions/programmes, as is done through the German approach or the Australian star approach, than to assign a discrete rank to each institution.

Compare similar programmes or institutions. Because of their methodological limitations, rankings are more meaningful when the unit of comparison is smaller. Ranking programmes is, therefore, preferable to ranking institutions. And if it is absolutely necessary to rank institutions, care must be exercised to compare similar institutions. This means going beyond looking at institutions that are similar in name (university with university, community college with community college) and making sure that they are also similar in mission, organisation and programme focus, for example research universities with research universities, or teaching colleges with teaching colleges.

At the institutional level, use rankings for strategic planning and quality improvement purposes. Tertiary education institutions that look at detailed ranking data for benchmarking purposes, whether within a single country, across countries and over time, can use the results to inform their strategic thinking and planning. Areas of weakness and strength can be identified in that manner, and corrective actions can be defined. The important point to bear in mind is that individual universities should not agonise over their overall rank *per se* or set themselves a specific rank to beat, but rather look at specific indicators in order to understand better the determinants of their performance and work towards improving the quality of teaching, learning and research as may be the case.

At the government level, use rankings to stimulate a culture of quality. In countries that do not yet have a well-established evaluation and/or accreditation system, rankings can be used as a proxy for quality. Similarly, at the international level, in the absence of a single global quality assurance agency, ranking systems (public and private) take on some characteristics of a quality regulator for international students. To this end, it is important to adopt a robust methodology based on the principles described in the preceding paragraphs. Involving the tertiary education institutions themselves in defining the methodology is important to create a sense of ownership and common purpose. After Nigeria introduced institutional rankings in 1999, there was little resistance because the University Grants Commission in charge of the exercise had given the universities the opportunity to criticise and modify the criteria with which they did not agree.

Use rankings as one of the instruments available to inform students, families and employers and to fuel public debates. Rankings that rely on multiple indicators rather than a single weighted measure can provide useful information about programmes to prospective students as well as to employers in search of graduates with appropriate professional and academic qualifications. But rather than being considered as the ultimate measure of quality and/or relevance, rankings should be complemented by information on accreditation and labour market outcome data collected through surveys of employers and tracer surveys. Finally, the results of league tables can also serve to generate a national debate about long-term strategic priorities and policies for tertiary education, as the French example illustrated.

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Notes

1. Examples of input variables are: autonomy in governance, resources allocated, cumulative grade point average of admitted students, qualifications of faculty, available budgets and types of programme. Examples of process variables are: methods of instruction and assessment and educational experiences of students. And most importantly examples of outcome variables are: graduate employment rates, number of awards won by students and faculty, and number of publications.
2. *Maclean's* weekly news magazine which performs an annual ranking of Canadian universities, places them in one of three categories, primarily undergraduate, comprehensive and medical-doctoral. The Carnegie classification of universities released five new classification schemes for use by the higher education community in November 2005. The new classifications include all accredited, degree-granting, non-specialised institutions of tertiary education in the United States.
3. In Ontario (Canada), for example, community colleges are assessed in terms of their performance on five key performance indicators: *i)* students' satisfaction, *ii)* graduates' satisfaction, *iii)* employers' satisfaction, *iv)* graduation rate and *v)* employment rate. The government uses the results of such assessments to reward good performance through performance-contingent additional funding allocation (Cunningham, 2002; PEQAB, 2006).
4. Average tertiary gross enrollment ratios in 1965 and 1995 in low, middle and high income countries were 0.02:0.05; 0.05:0.25; 0.12:0.40, respectively (The Task Force on Higher Education and Society, 2000).
5. Institutions that *Maclean's* classifies in the medical/doctoral category have a broad range of PhD programmes and research, as well as medical schools. Those classified as comprehensive have extensive research activities and a wide range of

programmes at the undergraduate and graduate levels, including professional degrees. Those classified as primarily undergraduate are largely focused on undergraduate education, with relatively few graduate programmes.

6. From the title of an insightful article on ranking controversies: Jennings, M.V. (2004), "A Thin Line Between Love and Hate", *Currents,* Vol. 30, No. 9, October, pp. 22-27.
7. The drop in Malaya University's standing from the 2004 ranking can be in part attributed to extremely low scores obtained on two indicators: citations per faculty and recruiter review. "Recruiter review" was a new indicator introduced in the 2005 ranking. It reflects the opinion of employers about the quality of graduates. The sample of employers include financial institutions, airlines, manufacturers in areas such as pharmaceuticals and the automotive industry, consumer goods companies, and firms involved in international communications and distribution.
8. The universities are: Dalhousie University, McMaster University, Simon Fraser University, University of Alberta, University of British Colombia, University of Calgary, University of Lethbridge, University of Manitoba, *Université de Montréal*, University of Ottawa and University of Toronto.
9. This account is based on interviews with Dutch Ministry of Education officials who have asked not to be identified by name because of the sensitive nature of the case.
10. "College and University Rankings", *http//en.wikipedia.org/wiki/University_rankings*, accessed 5 April 2006.
11. Italy and Spain are exceptions in that, despite local experience, they were not ranked in the top 100 in *The THES,* and only Italy ranked in the SJTU, in the 97th position.
12. In 2004, five Canadian universities which topped the list in terms of research funding included the University of Toronto (USD 623 532 000), McGill University (USD 543 497 000), *Université de Montréal* (USD 383 764 000), University of British Columbia (USD 363 337 000) and University of Alberta (USD 360 009 000).
13. R&D expenditure as a percentage of total domestic R&D in 2003 was 35.7% in Canada, 28% in Australia (2002 data), 21.4% in the United Kingdom and 16.8% in the United States.
14. The rankings are available on the CHE site at *www.che.de/cms/?getObject=2&getName=CHE-Ranking&getLang=de* as well as on the site of the German Academic Exchange Agency at *www.daad.de/deutschland/studium/hochschulranking/04690.en.html*.

ANNEX A

Selected List of Agencies and Organisations Responsible for Rankings (as of November 2006)

Country	Institution conducting ranking
International	Shanghai Jiao Tong University world university ranking *The Times Higher Education Supplement* world university ranking *Asiaweek*, ranking of universities in Asia and the Pacific (between 1999 and 2002) *Newsweek* (weekly magazine)
Argentina	*Consejo Nacional de Evaluación y Acreditación de las Universidades* (government accreditation agency classifying universities into three categories)
Australia	International Standing of Australian Universities, prepared by the Melbourne Institute of Applied Economic and Social Research (Melbourne University)
Brazil	*Provão*, annual standardised examination ranking university programmes on a five-grade scale from A to E, administered by the National Institute for Educational Studies and Research (between 1993 and 2003)
Canada	*Maclean's* (weekly magazine) Ranking of research universities prepared by Research Infosource Inc., a division of a consulting firm University Report Card Navigator, prepared by the Educational Policy Institute in partnership with *The Globe and Mail* (daily newspaper)
Chile	*El Mercurio* (daily newspaper) *Que Pasa* (daily newspaper) *Consejo Nacional de Acreditación* (National Accreditation Agency, grants accreditation for different lengths of time from three to seven years)
China	Guangdong Institute of Management Science (university) Netbig Chinese University Rankings published by *China Youth Daily* (newspaper) Research Center for China Science Evaluation, Wuhan University Chinese Universities Alumni Association ranking Shanghai Institute of Educational Science Ranking China Academic Degrees and Graduate Education Development Center Ranking
Germany	Center for Higher Education Development (independent policy research institute), in partnership with *Die Zeit* (weekly magazine) *Karriere* (monthly magazine)
Hong Kong	Education 18.com (media agency)

Country	Institution conducting ranking
India	National Assessment and Accreditation Council (autonomous accreditation agency established under the University Grants Commission, classifying tertiary education institutions into categories A, B and C) *India Today* ranking (daily newspaper)
Italy	*La Repubblica* (daily newspaper)
Japan	*Ashi Shimbum* (daily newspaper) Kawaijuku rankings, prepared by preparatory school (2001)
Kazakhstan	National Accreditation Commission (Ministry of Higher Education) Center for Economic and Social Research
Korea	Korean Council for University Education
Malaysia	Qualifications Framework Agency, Ministry of Higher Education
Netherlands	Ministry of Education (in charge of higher education)
New Zealand	Performance-based research fund, prepared by Ministry of Education
Nigeria	Ranking of Nigerian Universities, prepared by National Universities Commission as part of accreditation exercise
Pakistan	Ranking of universities, prepared by Higher Education Commission
Poland	*Perspektyvy* (weekly magazine)
Portugal	*Jornal Público* (daily newspaper)
Romania*	Babes-Bolyai University, to be published by *Adverul* (daily newspaper)
Russia	ReitOR (private foundation)
Slovakia	Academic Ranking and Rating Agency (independent organisation)
Spain	GRS Research Group (independent research organisation) *El Mundo* (daily newspaper) Universia (consortium of universities)
Sweden	*Moderna Tider* (weekly magazine)
Switzerland	SWISSUP ranking, published by *L'Hebdo* newspaper
Thailand	Ministry of Higher Education ranking
Tunisia	*Comité National d'Évaluation* (government university evaluation agency)
Ukraine*	UNESCO Chair, Kyiv Polytechnic Institute, to be published by *Zerkalo Nedeli* (weekly magazine)
United Kingdom	*The Times' Good University Guide* (daily newspaper) *The Sunday Times* (weekly newspaper) *The Guardian* (daily newspaper) *The Daily Telegraph* (daily newspaper)
United States	*US News and World Report* (weekly magazine) *Washington Monthly* (monthly magazine)

* New ranking under preparation.

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Universities on the Catwalk: Models for Performance Ranking in Australia

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National and international rankings of institutional performance are playing a growing role in contemporary higher education. It is critical that researchers develop pragmatic, educationally sensitive and methodologically informed approaches for managing this aspect of higher education. This paper compares three approaches for modelling key indicators which underpin a national evaluation of university education in Australia: rankings of aggregate institutional performance; comparisons of institutional change over time; and performance variations within fields of education. The results show that simple institution-level aggregations are misleading, and that contemporary analytical methods must be used to account for the influence of fields of education. More broadly, the findings expose the need for a more robust methodological development of university rankings.

Investigating the modelling of university performance

Despite its critics and inherent difficulties, it seems very likely that university rankings are here to stay. Higher education markets are becoming more open and competitive, with increasing calls for information about quality and effectiveness. Government, business, potential students, the general public and institutions themselves want more and better information to help differentiate varying levels of quality and performance. It is critical, as such, that researchers develop pragmatic, educationally sensitive and methodologically informed approaches for managing this increasingly prominent aspect of higher education.

Much energy has been invested in producing rankings over the last decade. National rankings have been produced to capture research and educational performance (US News, 2006; Hobsons, 2006; Siwinski, 2002; Williams and Van Dyke, 2005; DEST, 2005). Two prominent international rankings (THES, 2004; IHE, 2004) have emphasised university research, although the OECD has begun conversations about possible cross-national assessments of student performance (Ischinger, 2006). In Canada, an innovative attempt is underway to develop a "composite learning index" that represents the current state of learning across the country (Cartwright *et al.,* 2006). As Guthrie (1993) portended, education systems may well be on the road to a "Dow Jones" index.

While not designed explicitly as a ranking mechanism, attention in Australia has been focused on development and administration of the Learning and Teaching Performance Fund (LTPF) (Nelson, 2003). In 2003, the Australian government signalled its interest in evaluating and rewarding higher education teaching and learning at the national level. The LTPF was developed from 2003 to 2005 to "reward those institutions which best demonstrate excellence in teaching and learning" (Nelson, 2003, p. 29). Three annual funding rounds will have been conducted by the end of 2007, distributing around AUD 250 million to a selection of 38 eligible Australian institutions. The results have also been used to generate "learning and teaching" rankings of institutions. The LTPF is an interesting policy initiative, not least because it includes and affects an entire national system.

Such ranking activities generate substantial discussion and debate. As part of this, ranking methodology is emerging as a significant area of higher education research. One area of focus has been the policy contexts which surround ranking (Merisotis, 2002a; Merisotis and Sadlak, 2005; Yonezawa

et al., 2002; Cai Liu and Cheng, 2005). Work has also focused on understanding the nature and selection of indicators, which is important given that rankings are ultimately only as valid as the data on which they are based (Coates, 2006; Van Dyke, 2005; Clarke, 2002). Developing appropriate statistical approaches for modelling indicator data is a further growing concern of ranking methodology research (Clarke, 2002; Van Dyke, 2005; Filinov and Ruchkina, 2002). Researchers have also considered standards for how reports and data are best used (Clarke, 2005; IREG, 2006), and early meta-analytic work has been done on the development of rankings frameworks and typologies (Usher and Savino, 2006; Dill and Soo, 2003; Merisotis, 2002b; OECD, 2006). Relatedly, international work has been initiated by the Institute for Higher Education Policy and UNESCO-CEPES (the European Centre for Higher Education) (Merisotis and Sadlak, 2005; Merisotis, 2002b) to develop an International Rankings Expert Group to monitor ranking activities.

This paper contributes to the methodological discussion of university rankings by investigating alternative approaches for modelling key indicators which underpin a national evaluation of university education. It develops findings based on the analysis of data used in the Australian Learning and Teaching Performance Fund. The findings are used to explore approaches to the large-scale evaluation of university education which are of relevance to institutional researchers around the world. Large-scale analysis of educational performance is invariably high-stakes, and conducting data analyses in valid and appropriate ways is critical.

The teaching and learning focus of this paper is largely incidental to its main methodological intent, but does add an extra dimension to the analysis. As suggested in the above overview, rankings have tended to focus on the research rather the educational function of universities. This raises interesting questions about the "research/teaching nexus" and determinants of higher education quality, which lie beyond the scope of this paper. Indirectly, however, this paper does offer a timely juxtaposition to the general focus on research in discussions of higher education rankings.

The broader intention of this paper is to stimulate awareness of state-of-the-art statistical techniques in higher education policy circles. While aspects of large-scale evaluation are relatively new to higher education, methods used to monitor educational effectiveness have been widely used and rigorously tested over many years. Examples include school effectiveness research (Woodhouse and Goldstein, 1988; Bottani and Tuijnman, 1994; Hill and Rowe, 1998) and large-scale studies of educational achievement (OECD, 2005; NCES, 2006). In contrast, only a few methodological studies have been published in higher education journals (Guarino et *al.,* 2005; Rocki, 2005). While a certain re-learning is required when techniques are transported into new contexts with

new audiences, the use of contemporary analytical methods to maximise the validity of large-scale evaluations of university education is imperative.

The data and its context

The paper analyses data from the Course Experience Questionnaire (CEQ). The CEQ is conducted in a census of all coursework graduates administered around four months after graduation. The data is collected by participating institutions, then compiled and analysed by national agencies. The national reports are distributed to institutions, the public and government, and provide baseline figures for many intra- and cross-institutional activities. The results in this paper are based mainly on data collected from the 2005 census of 191 998 coursework graduates at 42 institutions which returned 98 138 usable responses (GCA/ACER, 2006).

The CEQ was developed in the early 1990s (Ramsden, 1991) and a series of new scales were added a decade later (McInnis *et al.*, 2001). While the full CEQ measures 11 qualities of the educational experience, this paper focuses on two scales and a single item indicator that have been administered by all Australian universities since 1992: Good Teaching Scale (GTS), Generic Skills Scale (GSS) and Overall Satisfaction Item (OSI). Since 2005, these three indicators have been included in the seven analysed for the LTPF.

For current purposes, the 13 items spread across the GTS, GSS and OSI have been combined to form a single Quality of Teaching and Skills (QTS) scale. The QTS has good measurement properties. Its alpha reliability is 0.91, and its congeneric reliability estimate (Werts *et al.*, 1978; Reuterberg and Gustafsson, 1992) is 0.95. Congeneric measurement modelling affirmed the construct validity of the QTS scale. All estimated parameters are statistically significant and have a mean standardised value of 0.78. The root mean square error of approximation for the model is 0.07, the non-normed fit index is 0.89 and the goodness of fit index is 0.98. In summary, the QTS provides a consistent composite measure of selected aspects of university education.

All Quality of Teaching and Skills items are answered using a five-point response scale which runs from “strongly disagree” to “strongly agree”. The analyses reported in this paper are based on a rescoring of the five response categories to –100, –50, 0, 50 and 100. This metric expands the range of the reporting scale and eliminates the need to analyse decimal-place differences. For parsimony, the QTS scores analysed in this paper have been calculated using simple summative methods even though other psychometric methods would produce more reliable measures.

QTS scores can be interpreted in a range of ways. While the data is collected as part of a census, the extent of survey non-response makes it appropriate to use statistical methods to analyse the sample of secured data.

Given the large number of QTS responses, the standard errors at the respondent level are around 0.5 and hence a difference of just over 1.5 on the –100 to +100 scale is likely to be statistically significant. This statistical significance is an artefact of the large number of observations, however, and small differences are likely to carry little meaning in practice. In large-scale surveys, statistical significance is an artefact of the large number of observations and many statistically significant differences are likely to carry little meaning in practice. A preferable approach is based on "effect size" (Cohen, 1969). Measures of effect size indicate the magnitude of the difference between two scores in standard deviation units which are independent to the number of observations. By convention, a difference of 0.2 standard deviation units is considered to be a small effect, a difference of 0.5 units a medium effect and 0.8 units a large effect size. As the standard deviation of the QTS scores is 34.5, differences of 12 points or more may be of interest as they represent a margin of at least a fifth of a standard deviation.

Three approaches for identifying educational quality

This paper explores three approaches for using data from the Course Experience Questionnaire to identify fields of educational performance in Australian higher education. It analyses aggregate institutional performance, change in institutional performance over time and institutional performance within broad fields of education. Results from these analyses are considered in terms of their implications for ranking institutional performance.

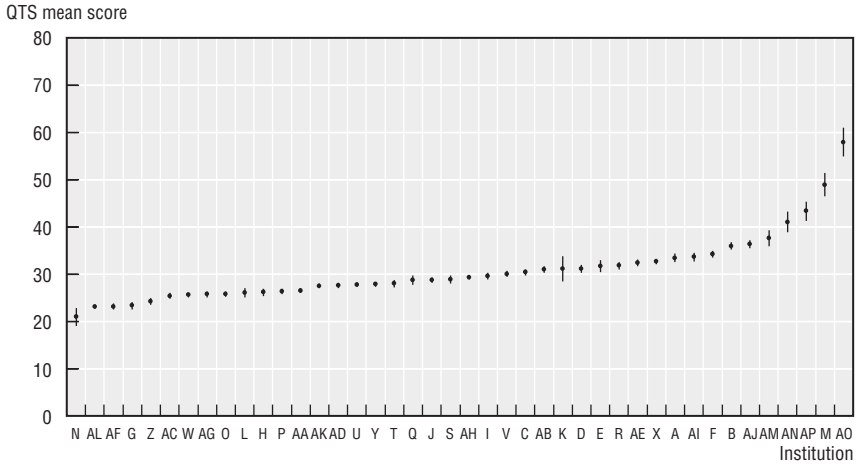
Aggregate institutional performance

The first approach tests the value of aggregating information from indicators such as the CEQ to the institutional level. There is often a strong interest in reviewing CEQ results at the institutional level. Institutions are often viewed and branded as relatively homogeneous corporate entities, even though they may in fact comprise heterogeneous and dynamic educational communities.

Figure 1 presents each institution's aggregate QTS score sorted in ascending order with 95% confidence bands. Each band marks out the interval which is very likely to include the true population mean score for each institution. The confidence bands have been adjusted for pairwise comparisons and the finite nature of the population. The 42 institutions have been coded randomly from A to AP for reporting purposes.

Figure 1 shows a large number of differences between institutions from a purely statistical perspective. A few "stand out" institutions have high QTS scores, around half have "above average" scores (greater than 28.3), while there is less differentiation between institutions towards the lower end of the

Figure 1. **Quality of Teaching and Skills scores by institution, 2005**



scale. These differences are marginal when considered in terms of the rescaled response category units of 50, however such variation is often treated seriously by stakeholders and funding agencies.

Fewer differences between institutions exist in terms of meaningful effect size. Only a few have score differences of 12 points or more, such as institutions A and AN. From an effect size perspective, the results in Figure 1 expose only around two to three different levels of institutional performance. While various groupings are possible, institutions M and AO could be placed in an upper band, A to AP in a middle band, and N to X in a lower band. With further psychometric modelling, such levels could be differentiated into qualitatively interpretable performance thresholds and hence quality benchmarks. While beyond the scope of this paper, such modelling would offer a much more sophisticated alternative to the use of statistical methods alone.

Institutional change over time

Measures of "improvement" or "value added" are the most powerful indicators of educational performance. Determining improvement, however, requires identifying a baseline against which it can be assessed. Since individuals complete the CEQ only once after their course, the cross-sectional nature of the data makes estimating net effects for individual students or graduates impossible. However, calculating improvement at the institutional or field of education level in terms of change over years is possible. It must be stressed that measures of "improvement" and "value added" are measures of growth and performance, and are not the same as "industry" or "effort".

Linear regression was used to estimate institutional change relative to performance set by population expectations. Such estimates are called "residual change scores". Residual change scores have a number of desirable properties and are used widely to measure educational effectiveness (Glass and Hopkins, 1996; Goldstein, 1995; Woodhouse and Goldstein, 1988). They are preferable to change or difference scores calculated using simple subtractive methods, as the reliability of these simpler measures tends to be low and they are perturbed by floor and ceiling effects (Linn, 1988; Cronbach and Furby, 1970).

Regression analysis exposed a strong linear relationship between the 2004 and 2005 scores. The 2004 scores account for 82.2% of the variation in the 2005 scores, and the correlation between the scores is 0.91. The relationship between the scores and the linear line of best fit is shown in Figure 2. The line of best fit represents expected performance. Institutions represented by points above the line have performed above expectation, and those represented by points below the line have performed below expectation.

Figure 2. **Quality of Teaching and Skills mean scores by institution, 2004-05**

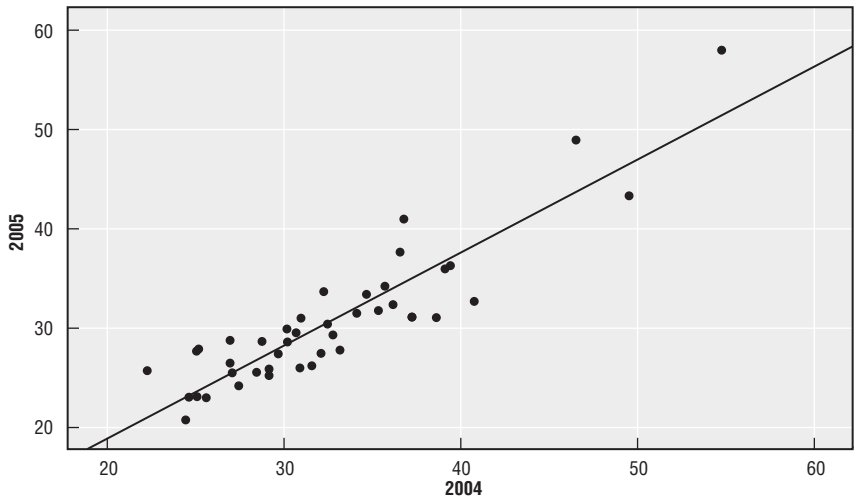
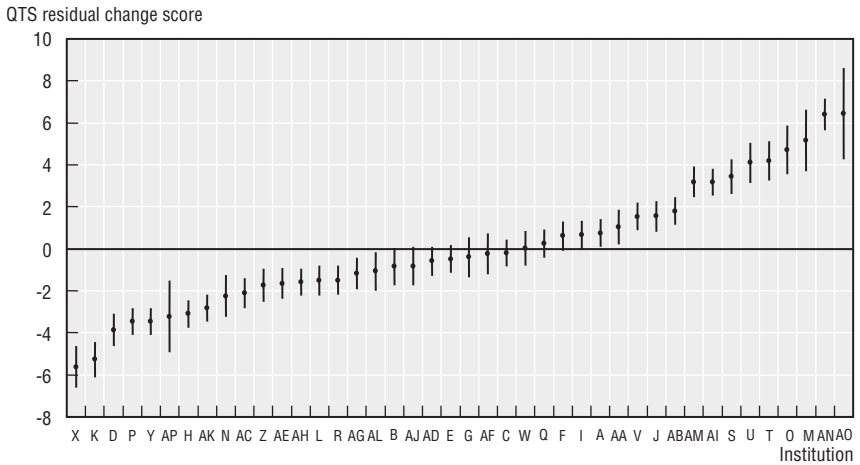


Figure 3 shows the residual change scores for each institution along with confidence bands sorted from lowest to highest. There appear to be three different types of change. Figure 3 exposes about 15 institutions with greater than average change, around 10 with score changes in line with expectations, and about 17 with 2005 QTS scores less than expected given their 2004 performance. Differentiation is greater among institutions at the lower and upper ends than in the middle of the distribution.

Figure 3 also enables analysis of the rate of QTS score change across years. While institutions V to AO have a relatively fast rate of change, Z to AA are changing little, while X to AC are sliding backwards. Institutional performance could be measured in terms of such change gradients, which indicate the extent of improvement or decline in teaching quality as measured by the QTS. Absolute performance aside, there is often much value in educational organisations which are experiencing conditions of growth and productivity.

Figure 3. **Quality of Teaching and Skills residual change scores by institution, 2004-05**



It is interesting to note the differences between the measures of aggregate institutional performance and the residual change scores. The overall correlation between the rankings is quite low at only 0.26. Despite this, there are telling patterns in the lists. While institution AO is at the top of both rankings, only three common institutions rank in the top five of each. Only four common institutions rank in the top ten. While these rankings differ, they do indicate that it is possible to have high levels of both aggregate performance and change. They also indicate that, independent of important questions about the appropriateness of institutional aggregations, the measurement of absolute performance and of change in performance across consequence years are two complementary approaches for reviewing educational quality using CEQ data.

Performance within fields of education

In reviews of educational performance, employing analytical approaches which are sensitive to the phenomena being analysed is critical. While higher education institutions tend to have complex and idiosyncratic structures, CEQ

scores in large part reflect the perceptions of graduates who learned within fields of education, within institutions. To minimise bias, therefore, it is essential that analyses account for the hierarchical structure inherent in the data.

Applying a single-level analytical perspective, such as in the analysis of aggregate institution scores, can cause a range of problems. First, single-level analyses ignore the effects of clustering and treat all observations as independent. In doing this, they overestimate the number of unique observations and hence the amount of information being analysed. Overestimating the information being analysed leads to underestimating standard errors, which in turn makes the identification of spurious differences more likely.

Second, and most importantly, it is fallacious to assume that relationships identified at aggregate levels hold for subgroups or for individual members. In technical terms, single-level analyses run the risk of committing the "ecological fallacy" (Robinson, 1950). While a whole may be the sum of its parts, it may not be equivalent to them. Ignoring the heterogeneity among elements within groups not only leads to the misapplication of general structure over group particularity but also ignores, as suggested above, the rich possibilities made available by studying such difference. Put simply, aggregate pictures of educational performance misrepresent the diversity within institutions.

A further reason for taking a multilevel perspective is that higher education institutions vary in their composition. Not all universities, for instance, include medical, physiotherapy or education schools. Drawing comparisons between organisations with different structures and academic units can be misleading, perhaps even more so than representing an institution by a single number. Disaggregated reports require the analysis of more information, but they enable interpretations to be drawn between comparable faculties and schools.

Covariance analyses of Course Experience Questionnaire data (GCA/ACER, 2006) indicate that both the institution itself and the field of education underpin patterns of score variation. Analyses (specifically multilevel variance components modelling) of graduates within fields of education within institutions suggest that individual respondents account for 94.7% of variation in QTS scores, the broad field of education accounts for 3.1%, while institutions account for only 2.2%. The results of this variance decomposition are pivotal. They indicate that the field of education causes more variation in educational performance, as measured by the QTS, than does an institution. This suggests that analyses of educational performance based on CEQ data should not ignore the field of education. While parsimony is important, explanatory statistical models should aim to explain as much meaningful variation in the data as possible.

This important point is exemplified in Figure 4, which shows QTS mean scores and 95% confidence bands for three institutions across the ten main

broad fields of education. The selected institutions are the same type of university, share many common characteristics and have a large number of CEQ responses in each field of education. They are also spread across the distributions of institutions shown in Figures 1 and 3. What Figure 4 shows is that the institutions perform in different ways depending on the field of education. Institution AK, which has QTS scores well below those of institution X in the Information Technology field, has a much higher QTS score in the Agriculture, Environmental and Related Studies field. Institution X appears to have consistently high scores, although the difference is marginal in six of the ten fields.

Figure 4. **Quality of Teaching and Skills mean scores for sample institutions by field of education, 2005**

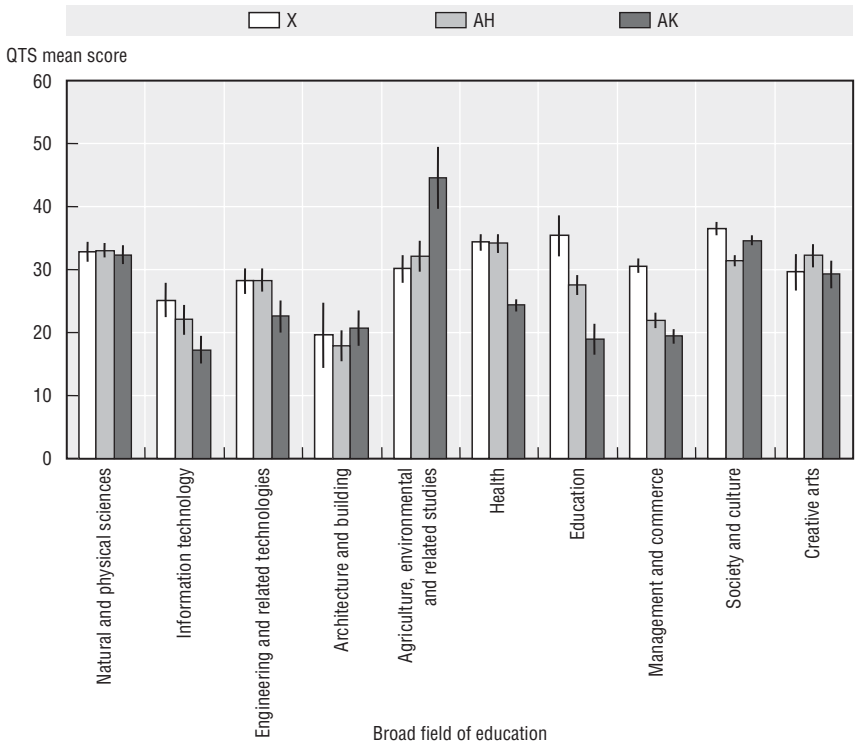
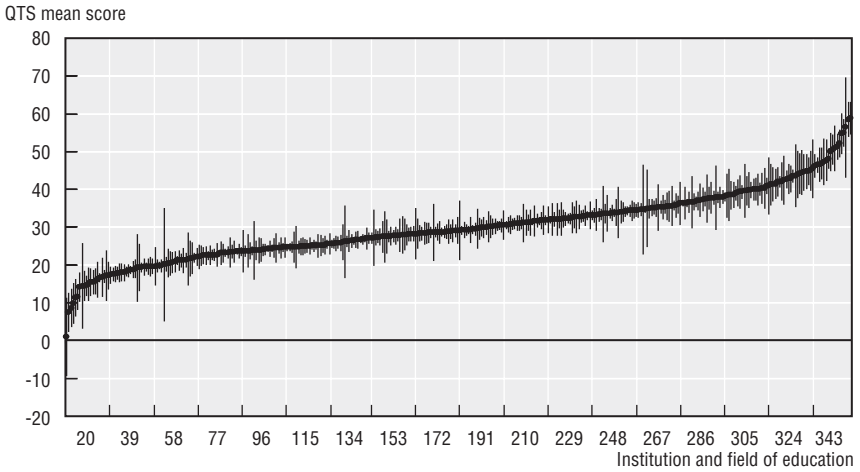


Figure 5 presents a national picture of the performance of three institutions within fields of education. It shows QTS mean scores with greater than ten responses for each combination of institution and broad field of education. The labels on the horizontal axis reflect the rank order of the observation. The mean scores have been sorted in ascending order and are shown with confidence

Figure 5. **Quality of Teaching and Skills mean scores by institutions and fields of education, 2005**



bands adjusted for the finite population and pairwise comparisons. The plot exposes a wide range in performance across fields of education in Australian institutions as measured by the QTS, in terms of both statistical significance and effect size.

A summary of the different rankings

In Table 1, the 42 institutions are sorted in order of descending QTS mean score or residual change score. This presentation does not include information about sampling error or effect size, therefore many of the differences between institutional QTS scores may be inconsequential.

Despite its limitations, Table 1 provides a useful summary of the analyses explored in this paper. It shows, for instance, a considerable variation in institutional order across the lists, a result which reinforces the need to use robust analytical methods. There is also variation in the amount of detail given by each approach. While the aggregate institutional and annual change approaches provide a result for each institution, the multilevel approach provides a result for each field of education taught at each institution. This latter approach offers more sensitive and accurate information to assist subsequent interpretations of educational performance.

Developing ranking methodology for higher education

This paper has explored different ways in which indicator scores might be used to measure variations in the quality of university education. By investigating different approaches, the analysis has sought to advance

Table 1. **Institutional performance rankings, 2005**

		Broad field of education									
Whole institution	Annual change	Natural and physical sciences	Information technology	Engineering and related technologies	Architecture and building	Agriculture, environmental and related studies	Health	Education	Management and commerce	Society and culture	Creative arts
AO	AO	AE	AM	M	AC	AJ	AM	AO	M	AO	AJ
M	AN	AJ	A	B	J	D	AN	J	AP	M	AP
AP	M	N	B	N	AF	AE	M	M	K	AM	B
AN	O	S	AP	E	C	S	C	AJ	B	AN	D
AM	T	A	AE	F	R	AK	F	AN	AN	F	R
AJ	U	I	S	R	AD	AC	T	U	AM	AP	Q
B	S	AM	AB	AE	F	AG	E	R	F	G	Y
F	AI	H	F	A	AA	A	X	AI	AI	B	A
AI	AM	R	P	AC	U	V	AH	X	I	A	F
A	AB	D	AI	AB	O	E	H	D	X	R	H
X	J	L	J	AH	AJ	AI	B	W	Q	AB	E
AE	V	F	R	X	V	I	L	E	R	D	AB
R	AA	B	X	T	W	T	AJ	C	A	V	P
E	A	AC	I	I	AK	U	V	Z	AJ	AJ	C
D	I	E	E	J	X	J	P	AA	AB	Q	AE
K	F	V	D	U	S	AF	A	V	AD	X	AH
AB	Q	C	G	O	AH	C	AI	H	V	Y	L
C	W	U	AH	C	AL	AM	J	AD	J	E	O
V	C	G	AJ	G	L	AH	AD	AH	U	C	AF
I	AF	T	AD	D	T	AA	AG	G	S	I	W
AH	G	AG	C	W		P	I	Q	Y	AI	X
S	E	AH	V	AK		AL	D	A	O	H	AM
J	AD	X	AA	V		X	W	AF	AA	AK	AA
Q	AJ	AA	W	H		B	AA	I	AE	AF	AK
T	B	AK	AC	AD		Y	AB	P	E	J	N
Y	AL	AF	U	K		Z	R	L	AC	S	AI
U	AG	W	O	AL		O	AC	AC	D	O	AL
AD	R	AL	AF	AA		K	Y	AB	AG	L	J
AK	L	AB	AK	Y		AD	AK	AG	C	AE	V
AA	AH	J	AG	AG		AB	S	Y	AL	AD	U
P	AE	Z	AL	AF			Q	S	L	U	AD
H	Z	AD	H	S			G	AP	P	AH	I
L	AC	Y	Y				O	O	W	T	S
O	N	O	Q				AL	AK	AH	Z	AG
AG	AK	P	L				U	AL	T	N	AC
W	H		Z				AF	N	G	AG	Z
AC	AP		T				Z	B	Z	AA	G
Z	Y		N				N	T	AK	W	T

Table 1. **Institutional performance rankings, 2005** *(cont.)*

		Broad field of education									
Whole institution	Annual change	Natural and physical sciences	Information technology	Engineering and related technologies	Architecture and building	Agriculture, environmental and related studies	Health	Education	Management and commerce	Society and culture	Creative arts
G	P								H	AL	
AF	D								AF	AC	
AL	K								N	P	
N	X										

understanding of the methodology which underpins ever increasing large scale evaluations of educational quality. The analysis has shown that, as expected, different approaches to analysing indicator data produce different results. This observation is simple but not trivial, for the consequences of such quality determinations can often be enormous. As recent national and international exercises demonstrate, rankings can have significant effects on higher education funding, perceptions of quality, enrolments and trade.

The modelling in this paper has shown that it is essential to use forms of analysis which provide valid, reliable, efficient and informative results. Simple institution-level indicator scores alone are unlikely to achieve this goal. While they provide insight into overall institutional performance and allow an efficient means of reviewing change over time, they conflate the important patterns of variation which are due to the field of education. A multilevel form of analysis which reflects the reality that students learn within fields of education within institutions enables the production of more robust performance estimates. The estimates also provide more valuable information to institutions, managers students and the public, as they offer evidence at the level at which educational decisions are often made.

Ranking methodology is a relatively new field of inquiry in higher education. Much ongoing work is needed to explore other issues central to producing university rankings. While this paper has focused on the modelling of indicator data, research on rankings should be multifaceted and consider a range of practical, methodological and substantive issues.

Further education-focused and policy-level reviews should be conducted to examine which indicators are best used in large-scale university classifications and rankings. This may require the development of data on learning processes and outcomes to augment the systemic collections established over the last few decades. Rankings of university quality must not rely on indicators which are

simply ready-to-hand, but rather reflect the important aspects of university education.

Researchers need to consider what psychometric methods should be used to produce indicator scores. While rankings are often composed by analysts with expertise in secondary data analysis, it is critical that measurement considerations are not overlooked. Work is required to identify scaling procedures which extract the maximum amount of meaningful variation in indicator scores. Funding and educational decisions which flow from institutional rankings may be based on little more than chance if variations in indicator scores are unreliable and reflect random measurement error.

An important progression will involve linking ranking processes with more general higher education research. While the US National Survey of Student Engagement (NSSE, 2006) exemplifies the projection of research into practice, most rankings connect in very tangential ways if any with what is known about the nature and development of quality in university education. While reputation and resource indices frequently factor into rankings, for instance, empirical research (Pascarella and Terenzini, 2006) has shown that the relationship between these and the effectiveness of undergraduate education is low. At the same time, no rankings include the results of psychometrically validated student assessments of subject-specific knowledge or generic skills.

The development of frameworks and typologies will play an important part in enhancing research on rankings. Frameworks might provide classification of the different types of rankings, of the composition of different rankings, of the relevance of rankings for different institutions, or of how analysts and consumers might equate different rankings. They can provide a lens for reviewing the contexts, nature and implications of different rankings, and a structure against which progress in developing rankings can be planned and measured.

Rankings are attractive because they provide easily consumed information on selected aspects of higher education quality. Such simplicity can be problematic, however, as rankings which are computed or used in inappropriate ways can cause much harm to institutions and national systems. While numbers themselves are often context-free, it is critical that they are used in contextually sensitive ways. One of the most important areas for development will be to define standards for the appropriate reporting and use of rankings. Given the national and international scope of most rankings, such standards are likely to grow through ongoing discussion and debate.

Universities at the top of rankings can leverage much more than they should from the small differences which often place them there. University rankings are persuasive and increasingly form part of everyday conversations

about higher education. Therefore, and as suggested in this paper, researchers must develop robust methodologies to assure the validity of such lists.

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The Impact of League Tables and Ranking Systems on Higher Education Decision Making[1]

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As the battle for "world class excellence" accelerates, competition for students, faculty, finance and researchers between higher education institutions, nationally and internationally, has intensified. In this environment, the results of formally and relatively benign benchmarking exercises have taken on increased prominence and importance elevating the popularity and notoriety of league tables and ranking systems. To date, critical attention has focused on assessing the methodology behind these different systems and asking whether the resultant tables provide reliable information or denote quality. In contrast, this paper examines what impact, if any, league tables and ranking systems are having on higher education institution decision making. Drawing on a comprehensive survey of higher education leaders and senior managers worldwide, the paper aims to better understand the influences on strategic and operational decision making and choices, and institutional reputation and prestige. The study raises important challenges for both institutional leaders and governments.

Introduction and context

Increasing globalisation of higher education has been credited or blamed, depending upon one's perspective, for the myriad changes and challenges facing higher education. Irrespective of such differences of opinion, policy makers, institutional leaders and commentators do agree that the level of competition between higher education institutions (HEIs) within national jurisdictions and on a worldwide scale for "good" students, faculty and researchers and for finance has accelerated in recent years. As governments seek to extend their national presence in the knowledge marketplace, and higher education and academic research is recognised as a vital engine for economic growth, the battle for "world class excellence" has accelerated. This is particularly evident in the policy context, where national governments and supra-national organisations are placing huge emphasis on achieving greater accountability, improving the quality and relevance of programmes and research, and enforcing sharper differentiation between institutions.

In this context, and perhaps not surprisingly, the results of formally and relatively benign benchmarking exercises have taken on increased prominence and importance. "Although rankings of academic quality have been part of the US academic scene for approximately 100 years" (McDonagh *et al.,* 1998), the escalation of the battle for knowledge production and dissemination has elevated the popularity and notoriety of league tables and ranking systems. Despite the fact that there are 17 000 HEIs worldwide, there appears to be a near-obsession with the status and trajectory of the top 100:

> The University itself is ranked among the top UK universities for the quality of its teaching.
>
> Top of the … Student Satisfaction table.
>
> Our position is clearly the x Finnish University in international rankings.
>
> The number one destination for international students studying in Australia.
>
> Institution accredited by FIMPES, Excelencia académica SEP, x Place in academic programme of …

Published by, *inter alia*, government and accreditation agencies, higher education, research and commercial organisations, and the popular media, league tables and ranking systems (hereafter LTRS) have become ubiquitous since the 1990s. The *US News and World Report's* special issue on "America's

Best Colleges" has been published annually since 1990, and remains the most popular in that country. Around the world, media organisations including the following have predominated in the publication of such lists: *TheTimes Higher Education Supplement* (first published in *The Times*, October 1992), the *Financial Times* and *The Sunday Times* (United Kingdom/Ireland), *Der Spiegel* (Germany), *Maclean's* (Canada), *Reforma* (Mexico). In recent years, government and accreditation agencies and higher education organisations have developed their own systems for evaluating and ranking institutional performance: *e.g.* CHE (Germany), AQA (Austria), CIEES, CACEI, CNEIP and CONEVET (Mexico), NAAC, NBA (India), Higher Education Council and TUBITAK (Turkey), and Commission on Higher Education and Philippine Accrediting Association of Schools, Colleges and Universities (Philippines). In addition, there are a variety of commercial college "guide" books and websites, *e.g.* the *Good Universities Guide* (Australia), *Bertelsmann Stiftung* (Germany) and Research Infosource Inc. (Canada). As higher education has become globalised, the focus has shifted to worldwide university rankings, *e.g.* Shanghai Jiaotong University and *The Times Higher Education Supplement*.

LTRS are perceived as providing critical information to help inform choice to a variety of different audiences, *inter alia*: internationally mobile students and faculty, parents, government, sponsors and private investors, academic partners and academic organisations, industrial partners and employers. They are a cue to consumers regarding the conversion potential of a qualification for occupational opportunities and personal attainment, *e.g.* salary range, a cue to employers about what they can expect from graduates, and a cue to government and policy makers regarding international standards and contribution to national innovations strategies. Thus, LTRS appear to satisfy a "public demand for transparency and information that institutions and government have not been able to meet on their own" (Usher and Savino, 2006).

LTRS aim to grade HEIs according to various indicators or metrics in contrast to classification systems, which provide a typology or framework of HEIs according to mission and type. The former are often conducted on a national or sub-institutional level (*e.g.* by department or discipline) or increasingly on a regional or global basis. Institutions are compared using a range of indicators which attempt to measure higher education activity across the spectrum. Data is drawn primarily from three different sources: HEI statistics, publicly available information such as teaching quality or research assessments and other nationally "weighted combinations of performance indicator scores" (Bowden, 2000), or questionnaires and feedback from students, competitors, peers or selected opinion-formers (Eccles, 2002; Monks and Ehrenberg, 1999).

Regardless of LTRS type, the key focus is on measuring research and teaching performance – usually in that order – both critical ingredients of institutional prestige (Brewer *et al.*, 2002; Tight, 2000; Grunig, 1997). The choice

and use of particular indicators is related to their suitability to act as "proxies" for quality. For example, information on the student cohort is often used or interpreted as an indicator of institutional selectivity; the number of citations and publications in internationally-rated journals is used as an indicator of academic quality; the financial spend denotes the quality of infrastructure; employment record and patterns indicate the quality of graduates; while reputation is measured by an aggregate of its overall status and standing. Each system uses different assumptions and weightings, but there is significant evidence to suggest convergence around definitions of academic quality (Dill and Soo, 2005). The same "top universities" appear on most LTRS either nationally or internationally, with variations only appearing lower down the scale.

To date, most critical attention has focused on assessing the methodology behind these different systems and questioning whether the resultant tables actually do provide reliable information or denote quality. There are three categories of concern:

1. *Technical and methodological processes, e.g.* the way in which data is either collected or interpreted. Given the way in which different disciplines conduct research, publish and disseminate their findings, plus a growing emphasis on technology and knowledge transfer as illustrated by patents, there is a perceived inbuilt bias towards science, biomedical and technology disciplines, English-language publications, and traditional research outputs and formats. Questions have also been raised about whether the peer review process can measure quality or merely perpetuate a popularity contest. The use of indicators as proxies for quality is also viewed as problematic; for example does a larger institutional budget actually translate into better quality infrastructure? Does the number of publications or citations actually denote quality, and is there a correlation between teaching and research quality? (See UNESCO-CEPES, 2002, 2005; IREG, 2006.)
2. *Usefulness of the results as consumer information.* Research on student choice is inconclusive. McDonagh (1998) demonstrates that only 11% of students said rankings were an important factor in their choice, and that low socio-economic students are less likely to use them. However, he also shows that 40% of US students do use newsmagazine rankings. Similarly, research conducted by CHE[2] and HESCU (2006) suggests reputation can influence German and UK student programme choice, respectively. Grunig (1997) offers a slightly different interpretation, stating that the "halo effect" may be more influential than the particular merits of a programme because other factors are operative, such as "reputational ratings" and "rater bias". These views diverge from some Australian research which claimed that institutional characteristics – beyond specific programme qualities – were not strong influences "with the exception of ease of access from home" (James *et al.*, 1999). Similarly, Eccles (2002) claims the methodology by which

"information is collected and presented is flawed" and appears to "have little or no effect, in the short term at least, in influencing the choices of prospective students as to the university into which to enrol". Thus, do league tables and rankings influence student choice? Do they provide the right kind of information for incoming students? Are reputational rankings more influential with "better" students? Is there a difference between undergraduate *vs*. post-graduate student choice? What kind of information would be useful?

3. *Comparability of complex institutions with different goals and missions* (van der Wende, 2006). Various commentators have questioned the report-card approach to measure the full range of institutional activity across a myriad of disciplines and units. Turner (2005) argues that "institutions are compared with inappropriate peers, … [but their] inputs/outputs [are] treated in [an] equivalent manner" while Altbach (2006) asks if "it is possible to accurately measure a nation's academic system, or for that matter the quality of a single institution". Is there a potential to distort institutional purpose and impose a "one-size-fits-all" definition on HEIs? Eccles (2002) suggests the "measures used favour the strengths of well-established universities, giving undue emphasis to their research and postgraduate strengths at the expense of the new universities, the strengths of which lay in undergraduate teaching". Furthermore, because new universities consistently rank lower than "older" more well-established universities, could the "Matthew Effect"[3] be in operation? Are "elite" institutions caught in a virtuous cycle of cumulative advantage while "poorer" institutions get relatively poorer?

In contrast to these analyses, this paper examines what impact, if any, LTRS are having on institutional and academic behaviour, specifically on institutional decision making and perceptions of government policy making. Based on new research supported by the OECD Programme on Institutional Management in Higher Education (IMHE) and the International Association of Universities (IAU) (Hazelkorn, 2006a, 2006b), it presents preliminary data from a comprehensive survey of higher education (HE) leaders and senior managers worldwide. For example, do LTRS influence or inform decision making regarding strategy, mission or priorities? Do they influence collaboration or partnerships? Do HEIs believe that the results of LTRS influence the views or decisions of key stakeholders? Are LTRS influencing broader higher education objectives and priorities? Who should undertake ranking and which metrics should be used?

The paper has three main sections: *i*) section one presents the views of the various institutions regarding the role and impact of LTRS in their country, and on institutional decision making and higher education, *ii*) section two considers the ways in which HE senior managers are responding to the challenges which emerge, and *iii*) section three looks at some of the wider

implications for higher education and HE systems. The paper concludes with some preliminary observations. Because LTRS are becoming widespread, this study has significance for all HEIs and HE systems.

Institutional views about league tables and ranking systems

An international survey of leaders and senior administrators was undertaken in 2006 in order to better understand how LTRS are impacting and influencing higher education decision making. Drawing from the membership lists of IMHE and the IAU, 639 people/institutions were surveyed, with some unquantifiable "snowballing" because of the enthusiasm of participants to get other institutions involved in the study. This accounts, for example, for the significant number of respondents from Germany. Responses were received from 202 institutions, representing a 31.6% response rate, albeit noting the caveat stated above.

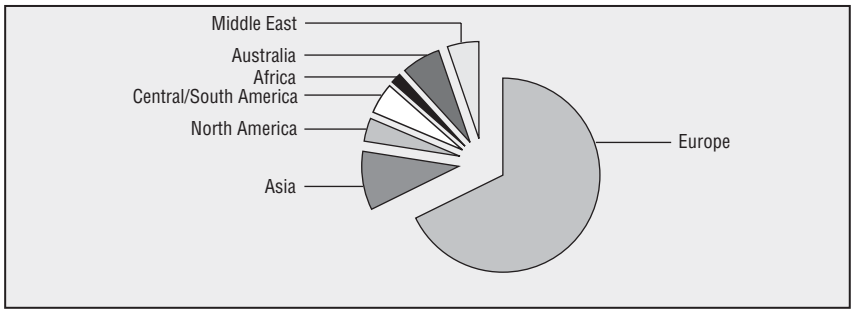
The questionnaire was divided into four sections, and sought to gather the views of HE leaders about the role and influence of LTRS on a wide range of issues affecting their institutions and higher education in their country.

- Overview of LTRS in each country.
- Importance of ranking on institutional decision making.
- Influence of ranking on key stakeholders.
- Influence of ranking on higher education.

The next sections of this paper present some preliminary data from this survey, which is an exploratory perspective of the issues. The variability in population size across the results was influenced by the fact that certain sections of the questionnaire were not applicable to some respondents, *e.g.* whether national league tables or ranking systems were operative in their country. All results were calculated on the basis of respondents to whom the question was applicable and those who replied within the applicable populations. Missing data was excluded from calculations in all cases. The population on which percentage responses were calculated are displayed throughout. Finally, to what extent the German response influenced the result needs further analysis. However, this is a macro overview of institutional behaviour and attitudes, and is not meant as a detailed analysis. The next phase of the research will look in much greater depth at the issues, including the extent to which regional or national differences or other institutional characteristics and experiences are a factor in respondents' responses.

Respondents were asked to provide some basic profiling information describing the main characteristics of their institution and their perception of LTRS. Respondents represent HEIs in 41 different countries and correspondingly 41 different higher education and policy jurisdictions, with the greatest number coming from Europe (see Figure 1).

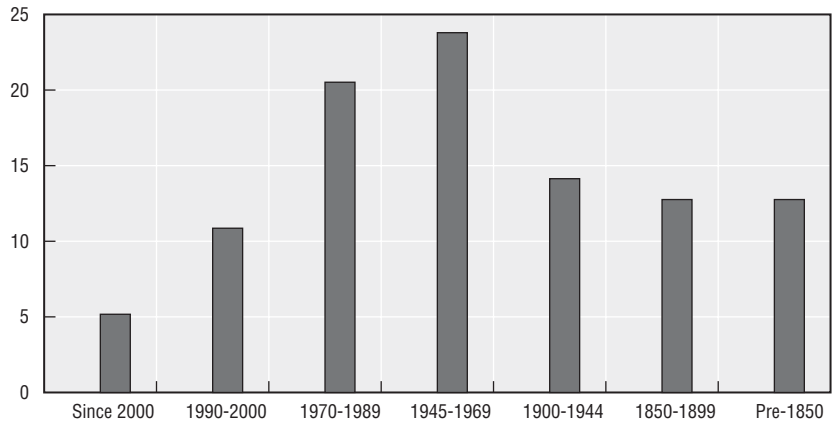
Figure 1. **Regional distribution of respondents (155 respondents)**



Source: Hazelkorn (2006a).

By age, responding institutions are evenly divided into three groups: 36.5% were established post-1970, 23.7% were established between 1945 and 1969, and 39.7% were established pre-1945 (see Figure 2).

Figure 2. **Date of creation of respondent institutions (% respondents; 156 respondents)**

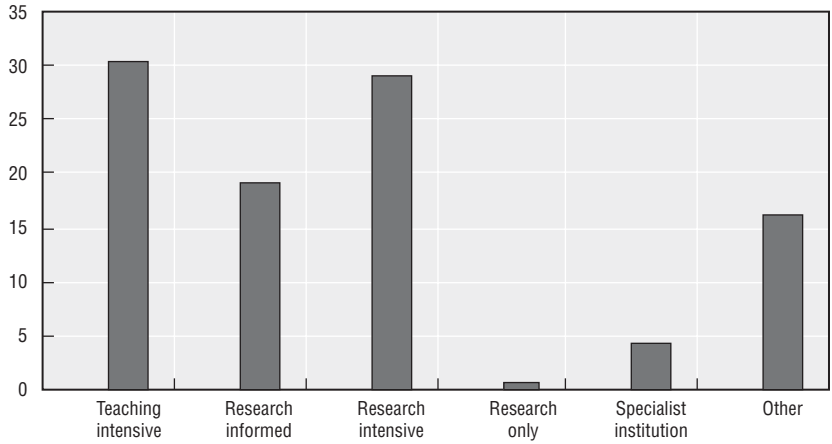


Source: Hazelkorn (2006a).

Eighty-three percent of institutional respondents are publicly funded, with the remainder being either wholly or primarily privately funded. Respondent institutions are evenly divided between teaching-intensive (30.4%) and research-intensive (29.2%) institutions; 19.3% described themselves as research-informed, with the remainder being research-only, specialist or other self-designated institutions (see Figure 3).

Given the orientation of this study and a possible correlation between a HEI's current rank and its opinion of LTRS, respondents were asked to identify

Figure 3. **Respondents by institutional classification (% respondents; 161 respondents)**



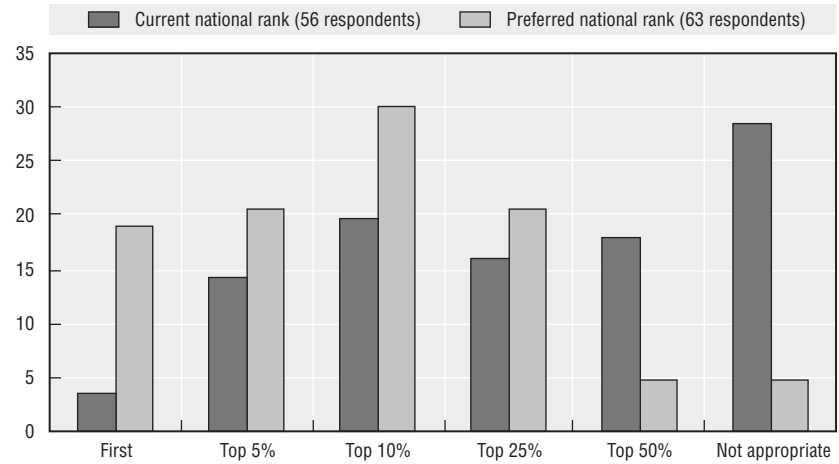
Source: Hazelkorn (2006a).

their current position (see Figures 4 and 5). Over 70% of respondents said their institutions were ranked nationally and/or internationally. Fifty-eight percent of respondents said they were not happy with their current institutional ranking; 92.8% and 82%, respectively, want to improve their national or international ranking. Reasons for unhappiness include concerns that the methodology used is "crude and inappropriate" or unable to take into account local contexts or the "special character" of different institutions, and that excessive emphasis is placed on research, reputation and awards over wider educational goals, including teaching.

Figures 4 and 5 also compare current rank with respondents' preferences. The results strongly suggest that respondents desire a much higher institutional rank, both nationally and internationally. Currently 3% of respondents are nationally ranked first in their country but 12% of the overall sample wants to be so ranked; none are internationally ranked first, but 3% of the all respondents want to be so ranked. Comparing current with preferred rank, 70% of all respondents wish to be in top 10% nationally, and 71% want to be top 25% internationally. The greatest swing is amongst those respondents who indicated that their current ranking is either "not appropriate" or within the top 50% nationally and internationally. For these two groups, there is strong evidence of an "exodus" from these categories, in other words, to be ranked or ranked higher in the future. These shifts are not surprising given the publicity and benefits that are perceived to derive from higher ranking.

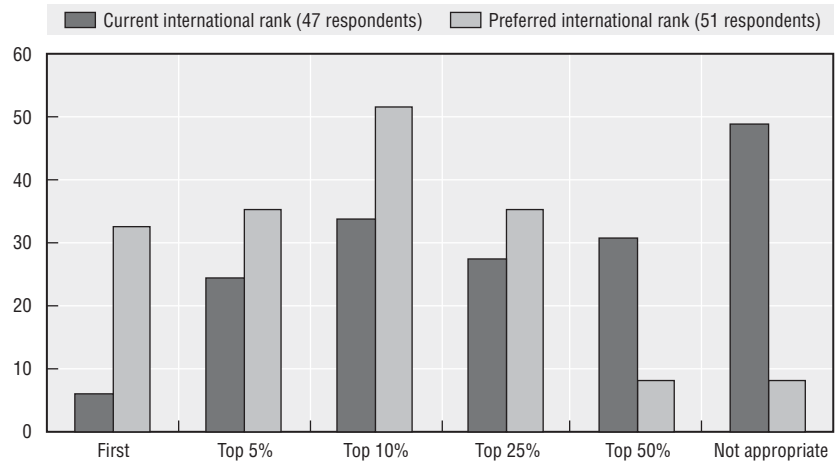
Almost 50% of respondents said LTRS were being developed or used in their country; of these, 14% said that they had been operating for less than five

Figure 4. **Current national rank *vs.* preferred rank (% respondents)**



Source: Hazelkorn (2006a).

Figure 5. **Current international rank *vs.* preferred rank (% respondents)**



Source: Hazelkorn (2006a).

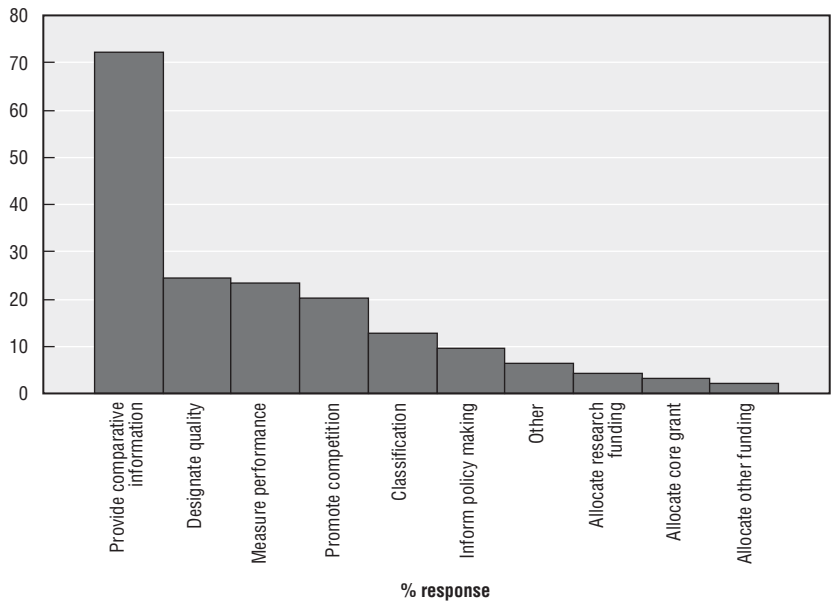
years while 68% said they had been operating for five plus years. In contrast, 60% of respondents said the results of worldwide LTRS were published in their country. Ninety percent of respondents said LTRS are published widely, and cited the media as the principal developer, followed by government departments, accreditation and higher education agencies, and independent research organisations (see Figure 13). The perceived purpose of LTRS is to

provide comparative information, although over 20% of respondents said their purpose was to designate quality, measure performance and promote competition (see Figure 6). As two respondents reveal:

> There is enormous attention given to every league table that is published as well as to the quality ranking. And they are taken seriously by students, government and especially by the media. Because of this, they have got a huge influence on university reputation and via this way, they promote competition and influence policy making.

> The tables produced by government are used to allocate some funding for teaching and research and not intended as ranking exercises per se, although this is of course how they are perceived. The tables in the popular media do provide comparative data but also attempt to provide interpretation and this is sometimes at odds with the stated purpose.

Figure 6. **Stated purpose of LTRS (% respondents; 94 respondents)**

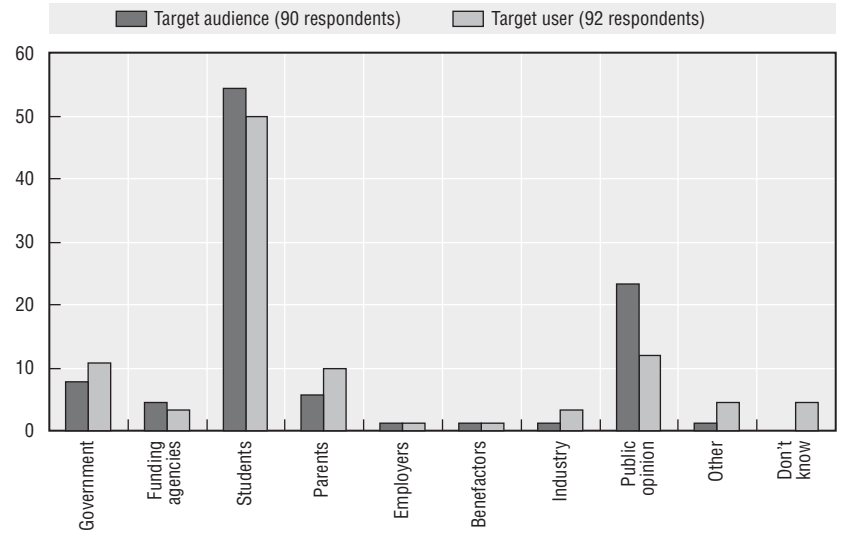


NB. Respondents to this question could indicate multiple replies.
Source: Hazelkorn (2006a).

Reflecting these tensions, a gap is becoming evident between the LTRS target audience and user. As Figure 7 illustrates, students are the most significant target audience and user of LTRS results. Public opinion is also viewed as a target audience but fewer respondents considered it the most significant user; in contrast, government, parents and industry are perceived

as having an increasing significance as a "user". The impact on public opinion is understandable in the context of the role of the media as the primary developer and disseminator of LTRS results.

Figure 7. **Audience *vs.* user (% respondents)**

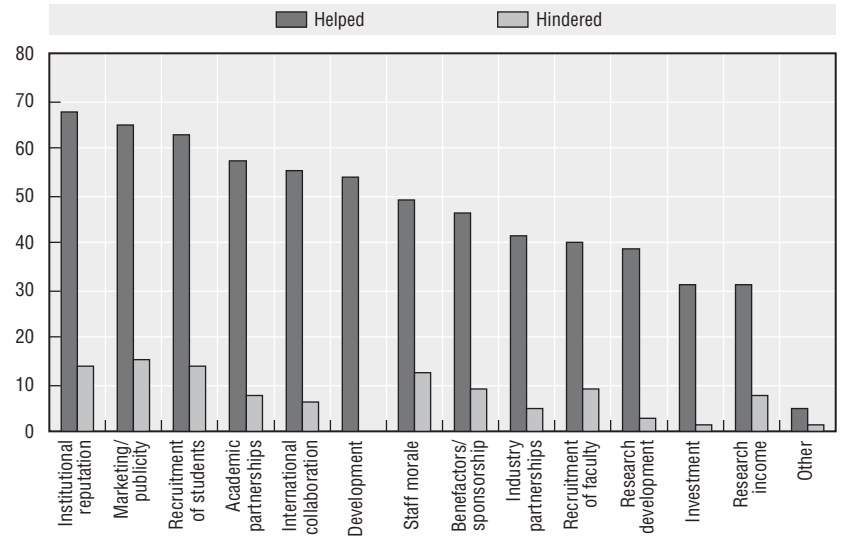


NB. Table shows groups which respondents felt were the most significant.
Source: Hazelkorn (2006a).

Responding to challenges

Fifty-seven percent of respondents think the impact of LTRS has been broadly positive on their institution's reputation, while 17% believe they have had no impact. More specifically, respondents said that the results of LTRS have broadly helped rather than hindered their institution's development. Figure 8 and Table 1 illustrate that respondents felt that the results had helped their reputation and aided their publicity, and consequently positively impacted on attracting students, forming academic partnerships, collaboration, programme development and staff morale. For example, almost 50% use their institutional position for publicity purposes: press releases, official presentations and their website. As one respondent said: "It's not the tables themselves, but how the institution uses those tables/ranking in representing itself to the marketplace. For example, referring to our raking/rating in advertising and marketing material".

Figure 8. **Helped or hindered (% respondents; 65 respondents)**



NB. Respondents to this question could indicate multiple replies.
Source: Hazelkorn (2006a).

But there are also caveats. As one respondent admitted repeatedly, the reply was "dependent upon their rank". Other respondents reflect this ambiguity:

> Reputation is achieved by becoming known – rankings are one way to achieve that, unless there are too many rankings.
>
> Positive rankings encourage the legal authorities to support innovation and new courses. Positive rankings have an impact on teachers and lecturers improving their motivation.
>
> The reputation is rather damaged as single bad results are generalised and excellent results in research or teaching in many other fields are not appropriately acknowledged.
>
> We are in the middle of the pack for comprehensive universities. This is not high enough to have a significant positive impact nor is it low enough to have a negative impact.

Fifty-six percent of respondents have a formal internal mechanism for reviewing their rank, usually by the vice chancellor, president or rector (55.8%) but also by the governing authority (14%). Of these, the majority of respondents have taken either strategic or academic decisions or actions; only three respondents indicated they had taken no formal action. Table 2 below provides a summary of the types of actions taken which are remarkably similar across institutions. Senior leaders are taking the results of LTRS seriously, incorporating

Table 1. **Helped or hindered – Examples**

	Examples
Academic partnerships	• "More interest from other institutions" • "Easier to present the institution to partners and funders"
Academic programme development	• "Poor results lead to reflection and curriculum review"
Benefactors/sponsors	• "More financial support" • "We are a more attractive prospect"
Industry partnerships	• "Less support" *vs.* "Better known"
Institutional reputation	• "Decline in students" *vs.* "Widespread recognition"
International collaboration	• "Better known than otherwise would be"
Investment	• "We can argue more strongly for the legislators and donors to fund our projects"
Marketing and publicity	• "Less foreign students" *vs.* "Saying top 10 makes matters easier"
Recruitment of faculty	• "Success breeds success"
Recruitment of students	• "Decline in enrolment" *vs.* "Good students come to us"
Research development	• "It is possible to attract attention and funding"
Research income	• "Less grants" *vs.* "No correlation"
Staff morale	• "High rankings are well received" • "Increased pride"

Source: Hazelkorn (2006a).

the outcomes into their strategic planning mechanisms, reorganising the institution to achieve better – meaning a higher ranking – outcome, and in general, using the results to identify weaknesses and seek to either resolve institutional problems or eradicate the source, *e.g.* hiring more Nobel Prize winners (a criteria, for example, in the Shanghai Jiaotong University worldwide ranking), and developing better management information system tools to

Table 2. **Actions arising**

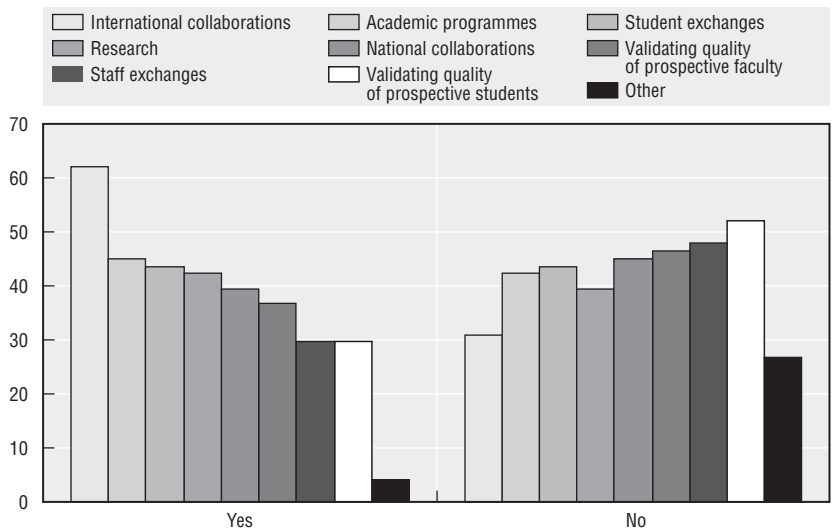
	Examples
Strategy	• "Indicators underlying rankings are explicit part of target agreements between rector and faculties" • "Became part of SWOT [strengths, weaknesses, opportunities and threats] analysis and benchmarking exercises"
Organisation	• "New section established/individual assigned to deal with indicator improvements and monitor rankings" • "Reorganisation of structure" • "Organise investigation team; renewed emphasis on the accuracy/amount of data gathered and shared with third parties"
Management	• "Rector enforces the serious and precise processing of ranking as well as control of the relevant indicators" • "Development of better management tools"
Academic	• "Improve teaching and learning; new academic programmes; increase English language programmes"; "More scholarships and staff appointments"

Source: Hazelkorn (2006a).

"control the relevant indicators". In several instances, respondents indicated that either a special investigation team or individual had been appointed or assigned to oversee organisation change, ensure regular "observation of rankings and methods", and monitor the performance of peer institutions. While several respondents specifically said they did "not orient our strategy to please the rankings" or "modify our work to please rankings" they did "consider the meaningful measures they provide".

Peer benchmarking is a critical factor in institutional strategy and helping HEIs determine whether and which collaborations and other partnerships to enter into. Accordingly, over 76% of respondents said that they monitored the performance of other HEIs in their country, and almost 50% said they monitored the performance of peer institutions worldwide. While, as Figure 9 indicates,

Figure 9. **Consider peer ranking prior to discussions (% respondents; 71 respondents)**



NB. Respondents to this question could indicate multiple replies.
Source: Hazelkorn (2006a).

respondents said peer ranking was taken into account particularly with reference to international collaborations, almost 40% of respondents said they did consider an HEI's rank prior to entering into discussion about other collaborations. Similarly 57% of respondents said they believed LTRS were influencing the willingness of other HEIs to partner with them. Most respondents were clear as to the advantages of such scrutiny:

> You need parameters and performance indicators as background for strategic partnerships.

There is an ongoing competition for funds for co-operative programmes. Therefore the partnership with a highly ranked institution helps to succeed.

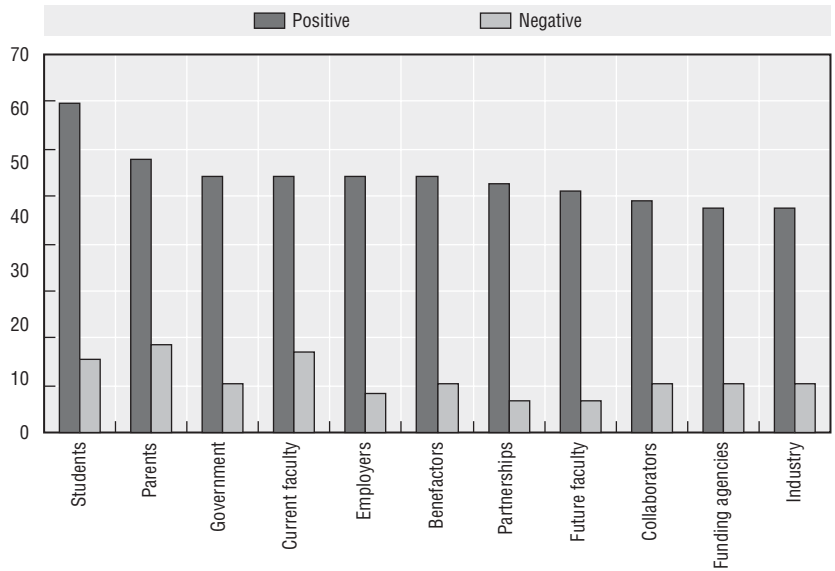
Everybody wants to form partnerships with strong and successful organisations. It helps with accreditation and fund-raising.

I think peer institutions see beyond and through ratings and rakings and use other measures of quality and professional relationships to determine partnership.

Equally significant, given the growing phenomena of international university associations and networks, *e.g.* Universitas 21, Coimbra, European University Association, and the branding associated with them, almost 34% of respondents said LTRS were influencing the willingness of other HEIs to support their institution's membership of academic/professional organisations. The value of such memberships is evidenced by the fact that a cursory glance at HEI websites shows that such affiliations often feature as a "quality" proxy.

One of the primary objectives of LTRS is to provide good, comparative or benchmarking information for students, their parents, public opinion and government (see Figures 6 and 6 above). To what extent do LTRS influence the views, opinions and decisions of key stakeholders? Figure 10 and Table 3

Figure 10. **LTRS influencing key stakeholders (% respondents; 59 respondents)**



NB. Respondents to this question could indicate multiple replies.
Source: Hazelkorn (2006a).

Table 3. **Examples of influence on key stakeholders**

	Examples
Benefactors	• "Depends on the rank" • "More support" • "They feel reassured supporting us" • "Provides international comparators"
Collaborators	• "Depends on the rank" • "Good for reputation" • "We feel an improvement"
Current faculty	• "Increases awareness about the importance of publishing" • "Easier to induce improvement with department head whose rankings are declining"
Employers	• "Depends on the rank" • "They feel reassured; those not open to us become more receptive" • "Can be confusing"
Funding agencies	• "Impact on small part of indicators" • "Have less pretexts to deny funding; and working the legislative process for our main annual budget improves"
Future faculty	• "Reassurance" • "Recruitment easier with good reputation"
Government	• "May believe simplistic picture" • "Local government inclined to spend additional money for an excellent university"
Industry	• "Depends on the rank": *e.g.* "good for reputation" *vs.* "less interest"
Parents	• "Benchmarking for judging best university" • "Particularly in an international market where status and prestige are considered in decision making"
Partnerships	• "Good for reputation at international level, reassurance"
Students	• "High profile students apply to high profile universities" • "Give too much weight" • "Influence at the margins"

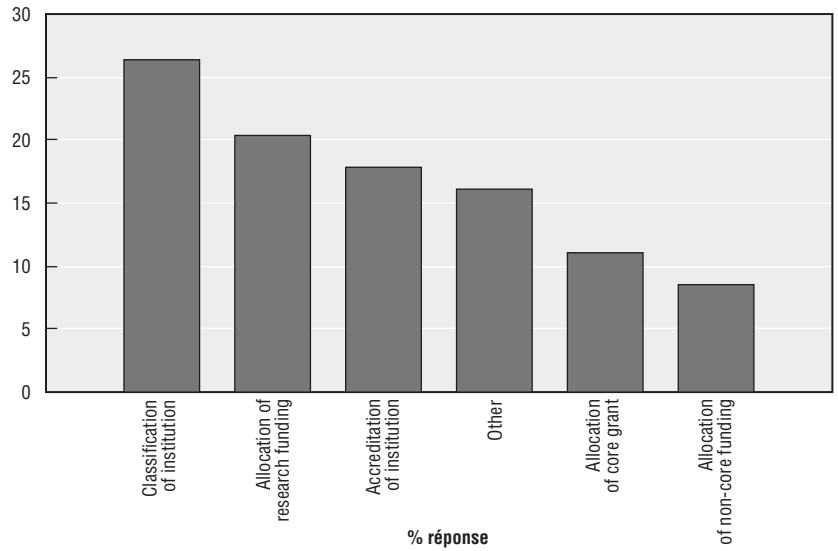
Source: Hazelkorn (2006a).

suggest that while respondents felt the impact of LTRS on their key stakeholders was positive, they also had some caveats depending upon their institution's own rank. Broadly speaking, LTRS are perceived as providing a shorthand "quality mark" which, while simplistic, can be easily understood by a variety of different users and stakeholders. The actual veracity of the indicators or the choice of the particular proxies is not something readily understood by those reading the results. Rather, LTRS users tend to draw broad brushstroke conclusions, using the results to "reassure" themselves about their collaboration, investment, future employer or university choice while at the same time providing the HEI with a rating that can be publicised. Those whose ranking is not prestigious often believe that the "Matthew Effect" creates a cycle of disadvantage.

Implications for higher education

Beyond the HEI, what are the broader implications for higher education? Since government is one of the key stakeholders, to what extent do respondents believe that LTRS are influencing policy decisions, and in what areas? Figure 11 suggests that respondents believe that LTRS are having an impact beyond their original purpose. Considering that the media are the primary developer of LTRS, they are impacting on a wide range of higher education policy issues, including the classification of institutions and the allocation of funding – specifically research funding.

Figure 11. **LTRS influencing policy making? (% respondents; 70 respondents)**



Source: Hazelkorn (2006a).

The developers and promoters of LTRS proffer the conception that international benchmarking helps institutions identify true peers, provide an assessment of quality performance or comparative information for students and parents, promote diversity and accountability and/or set strategic goals. Critics, on the contrary, claim LTRS are open to wide-spread misinterpretation. Because they emphasise particular metrics which favour well-established research-intensive HEIs, they effectively render "different activities differently valued, such as research over teaching and sciences over humanities" (Gumport, 2000).

Respondents were asked to engage in this debate by indicating whether they considered a range of statements often made about the significance of LTRS to be either true or false (see Table 4). Institutional responses mirror the

Table 4. **Impact of LTRS: True or false (% respondents; 115 respondents)**

	True (%)	False (%)
Favour established universities	83	17
Establish hierarchy of HEIs	81	19
Open to distortion and inaccuracies	82	18
Provide comparative information	74	26
Emphasise research strengths	65	35
Help HEIs set goals for strategic planning	65	35
Provide assessment of HEI performance	52	48
Promote accountability	48	52
Can make or break an HEI's reputation	42	58
Provide assessment of HE quality	41	59
Promote institutional diversity	38	62
Enable HEIs to identify true peers	33	67
Encourage fair competition	25	75
Provide full overview of an HEI	11	89

Source: Hazelkorn (2006a).

critical commentary found in the literature. The overwhelming majority said LTRS did not provide a full overview of an institution and instead favoured the strengths of well-established universities, and emphasised research and postgraduate strengths. In so doing, they helped establish a hierarchy which did little to promote institutional diversity or differentiation. In an era when governments favour greater market-led competition between HEIs, respondents did not agree that LTRS encouraged *fair* competition, primarily because they are open to "distortion, inaccuracies and obscurities". More positively, LTRS could help institutions set strategic planning goals and did provide comparative information to students and parents.

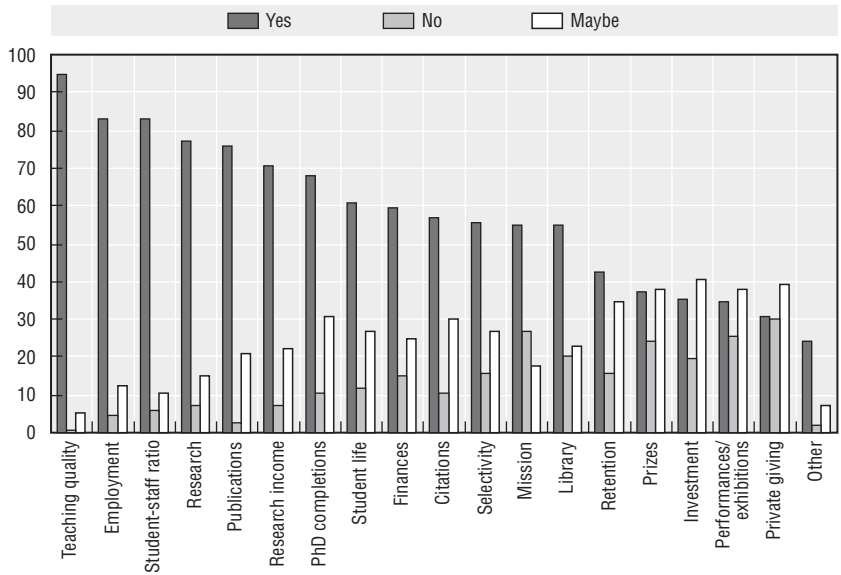
There is a growing consensus that because LTRS will become a constant presence in the increasingly globalised and competitive higher education environment, it is advisable to become involved in the formulation of an agreed "best practice" for LTRS. Two respondents stated:

> A problem with ranking systems is that they may not measure what the authors think they are measuring and the readers think they are measure something else. This may be overcome by authors of ranking systems and higher education institutions working together to use quality-related information in the most appropriate and helpful way; and to educate the public regarding the rationale and limitations of league tables and ranking systems.
>
> Given that many of the methodological problems are very challenging to resolve and certain stakeholders will use the outcomes anyway, there is a need to engage with the publishers and the stakeholders in order to better

understand their objectives and to educate them about the respective strengths and weaknesses (real and perceived) of the "leading" systems.

Accordingly, respondents were asked to specify how an "ideal LTRS" system would operate. In Figure 12, which indicates levels of support for each of the proposed metrics, respondents identify from a range of commonly used metrics those indicators which they think are the most appropriate. Despite criticism about the metrics used, respondents gave low "marks" to only a few indicators, each of which is explicable by the fact that they are relevant to or beneficial to relatively few or specialist HEIs: alumni or private giving, investment, Nobel or similar prizes, and exhibitions and performances. Several metrics, *e.g.* teaching quality, employment, student-staff ratio, and research activity, publications and income, receive the greatest support with minimum doubt or negativity expressed. Ideally, the media should not develop LTRS; rather, respondents favour independent research organisations, accreditation agencies or international organisations (Figure 13).

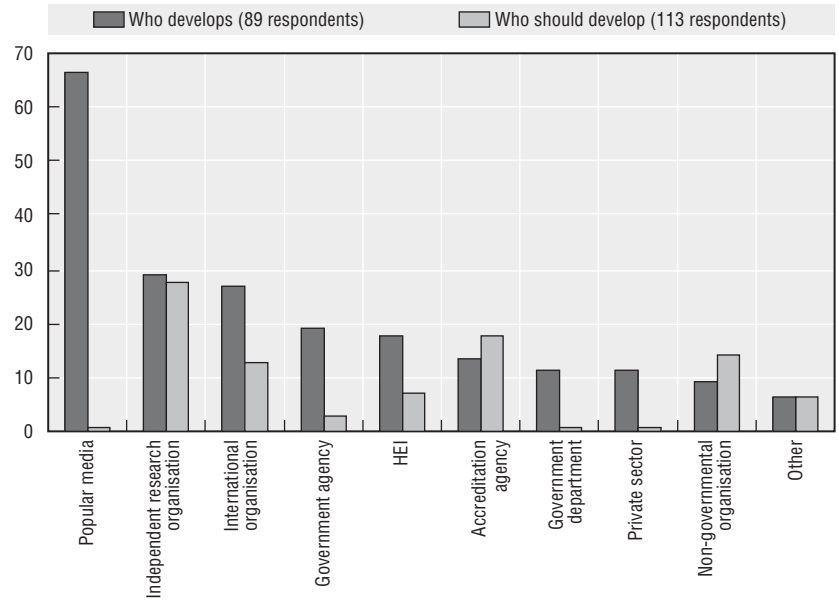
Figure 12. **Ideal metrics (% respondents; 111 respondents)**



NB. Respondents to this question could indicate multiple replies
Source: Hazelkorn (2006a).

In contrast, respondents have strong views about who should conduct such evaluations (Figure 13). While the media or commercial organisations are currently the primary "developer" of LTRS, respondents favour this role being taken on by independent research organisations and accreditation agencies or

Figure 13. **LTRS developer *vs.* ideal developer (% respondents)**



NB. Respondents to this question could indicate multiple replies.
Source: Hazelkorn (2006a).

non-governmental or international organisations. Some respondents suggested that the HEIs should do this exercise themselves while others said no one should.

Another area of controversy has been the way in which the data is collected, and the unit of analysis used. Ideally, respondents favour institutional data (23%) or that which is publicly available or gathered by questionnaires (19%) rather than by peer review (which currently forms a key element of the Times Worldwide Survey). Despite criticism about the difficulty comparing whole institutions with different missions, 41% of respondents favour evaluations at the institutional level compared with 21% or 30% respectively who favour programme or departmental level. While the latter two units of analysis, in aggregate, are greater than institutional preference, institutional comparisons are still ranked highest. Finally, in contrast to the current purpose of LTRS (see Figure 6 above), respondents said an ideal LTRS should:

- "Give fair and unbiased picture of the strengths and weaknesses of a university."
- "Provide student choice for a programme and institution."
- "Provide accountability and enhancing quality."

- "Design and apply practical assessment components and procedures."
- "Fair(ish) comparison among institutions of similar type (as in the USA)."
- "Provide comparisons for specific goals."

Observations

League tables and ranking systems at a national level are on the rise, but worldwide rankings also have a wider penetration. Indeed, it is particularly interesting that they are circulated and publicised even in countries which do not have their own national version. Anecdotally, many politicians, policy makers and HEI leaders refer to the Shanghai Jiaotong University rankings as a metaphor for worldwide rankings. This suggests that worldwide comparisons will become even more significant for particular institutions in the future. In this respect, the majority of respondents clearly indicated that they strongly desire their institution to be ranked within the top 10% nationally and the top 25% internationally. This was evident by the gap between current and desired ranking but also by the significant swing by those who wish to see their institutions ranked or ranked more highly in the future. This swing is linked to the advantages that are perceived to follow from high rankings.

LTRS were originally conceived and are today still perceived as providing comparative information to key audiences, *e.g.* students, public opinion and parents. There is, however, evidence that their influence and impact is becoming wider, beyond the original audience and intentions. Respondents identified this trend pointing out that government and industry are also "users" of LTRS results. This "change of use" is also evident in the fact that respondents said LTRS were influencing key policy-making areas, *e.g.* classification of institutions and the allocation of funding. Similarly, there is evidence that LTRS are influencing key stakeholders. This has a positive impact if the HEI is highly rated, but it can have a potentially harmful impact if the reverse is true. Accordingly, respondents acknowledge that institutional reputation can be enhanced or damaged depending upon position. There may be a distinction between perception and reality, but respondents' responses suggest that perception is already considerable.

The apparent contradiction between respondents' criticism of LTRS and the fact that respondents felt LTRS had overwhelmingly helped rather than hindered their institution is not surprising. Individuals, or institutions in this case, can be critical of a process or outcome but also realise that the process can have beneficial aspects – perhaps depending on its particular impact on one's own institution – and/or that the process cannot be easily ignored. The majority of respondents indicated that they had a formal review process, usually steered by the president or rector but often by the governing authority. As a result, they were embedding the process within their strategic decision

making and SWOT (strengths, weaknesses, opportunities and threats) analysis processes, making structural and organisational changes, integrating recruitment with strategy, and ensuring senior members of staff were well briefed on the significance of improving performance. For many institutions, getting a higher rank – in worldwide rankings – has become a key strategic goal. Part of this process involves continual peer benchmarking to ensure that partnerships and collaborations reinforce strategic objectives and advantage. Thus, despite criticisms of methodology or concept, HEIs are taking the results of LTRS seriously and using them to inform institutional decision making and to make changes. This is not surprising given the fact that respondents firmly believe that rankings are influencing reputation, status, stakeholders and policy makers.

Are these actions or changes shifting institutional mission? Or, are HEIs skewing their mission and strategies in order to better meet ranking criteria? The full extent or impact on higher education is not yet clear but the majority of respondents are concerned about the (negative) influence of LTRS on higher education and higher education policy. It is particularly interesting to note that this criticism does not appear to be simply a reflection of current status, albeit this is certainly an issue for much greater interrogation in the next stage of data analysis. Despite some contradictions in their replies – HEIs are unhappy with current metrics albeit they did not demur from proposing these same metrics in their ideal LTRS – there is a realisation that some form of national and international comparators are both useful and inevitable. As one respondent stated: LTRS are "dangerous, often ill-informed but difficult to influence and most definitely here to stay!"

This paper provides an overview of some challenges which leaders and senior managers/administrators in higher education are currently facing. The wider impact – for example, the extent to which LTRS impact on diversity and differentiation by emphasising a "one size fits all" model of institution or reinforce advantage or disadvantage, *à la* "Matthew Effect" – needs to be more fully assessed. Yet, it is inevitable that in a globally competitive environment, governments and institutions will seek to enhance their share of knowledge production, innovation and outputs. LTRS have become a popular shorthand way of doing this. Despite their arguably narrow set of metrics, highly ranked institutions believe they are or will be, and are perceived to be, better rewarded with more funding and prestige – and all the accoutrements that follow. Thus, institutions are acting rationally and strategically, effectively becoming what is being measured. However, the issues are much more complex and far-reaching (see for example, Deem *et al.,* 2006). If decision and policy makers are making choices based on metrics, proxies and processes which may in themselves be questionable, what are the implications of and for those choices? To what extent are LTRS fuelling a market-based approach not just regarding

student choice but also regarding policy making and the distribution of public and private resources, and is this the optimum way to make such decisions? These are important challenges for both institutional leaders and governments.

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Notes

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2. Comments made by Gero Federkeil, CHE Centre for Higher Education Development, Germany at the aforementioned symposium.
3. The "Matthew Effect" is based on a line in St. Matthew's Gospel that says, "For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath" (Matthew 25:29). This line has often been summarised as: "The rich get richer, and the poor get poorer."

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Peripheries and Centres: Research Universities in Developing Countries

by
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The research university is a central institution of the 21st century – providing access to global science, producing basic and applied research, and educating key leaders for academe and society. Worldwide, there are very few research universities – they are expensive to develop and support, and the pressures of massification have placed priorities elsewhere. For developing countries, research universities are especially rare, and yet they are especially important as key ingredients for economic and social progress. This article argues for the importance of research universities in developing countries and points out some of the challenges that such institutions face.

The research university is a central institution of the 21st century. It is essential to the creation and dissemination of knowledge. As one of the key elements in the globalisation of science, the research university is at the nexus of science, scholarship and the new knowledge economies. The research university educates the new generation of personnel needed for technological and intellectual leadership, develops the knowledge so necessary for modern science and scholarship, and, just as important, serves as an element of worldwide communication and collaboration.

All but a few research universities are located in the developed economies of the industrialised world. Any of the recent world rankings of top universities show that the main research-oriented universities are found in a few countries. This article, however, looks at the realities and prospects for research universities in developing and middle-income countries – a small but growing subset of research universities worldwide. If knowledge production and dissemination are not to remain a monopoly of the rich countries, research universities must become successful outside the main cosmopolitan centres. In establishing and fostering research universities, developing countries face problems that are to some extent unique.

Research universities are defined here as academic institutions committed to the creation and dissemination of knowledge in a range of disciplines and fields and featuring the appropriate laboratories, libraries and other infrastructures that permit teaching and research at the highest possible level. While typically large and multifaceted, some research universities may be smaller institutions concentrating on a narrower range of subjects. Research universities educate students, usually at all degree levels – an indication that the focus extends beyond research. Indeed, this synergy of research and teaching is a hallmark of these institutions, which employ mainly full-time academics who hold doctoral degrees (Kerr, 2001).

Motivating this discussion is a conviction that knowledge production and dissemination must spread internationally and that all regions of the world need a role in the knowledge network (Altbach, 1987). While there will always be centres and peripheries – the centres mainly concentrated in the major industrialised countries for the foreseeable future – there is room, indeed a necessity, for a wider dissemination of research capacity throughout the world. It may not be possible for each country to have a research university, but many developing and middle-income countries can develop universities

with research capacity and the ability to participate in the world knowledge system. Smaller countries can form regional academic alliances to build enough strength in selected fields to promote participation in global science.

The argument can be made that all countries need academic institutions linked to the global academic system of science and scholarship so that they can understand advanced scientific developments and participate selectively in them. Academic institutions in small or poor countries cannot compete with the Oxfords or Harvards of the industrialised countries. But most countries can support at least one university of sufficient quality to participate in international discussions of science and scholarship and undertake research in one or more fields relevant to national development.

Research universities generate growing enthusiasm worldwide. Countries come to the conclusion that such institutions are the key to gaining entry into the knowledge economy of the 21st century. Not only do these institutions train key personnel, but they form windows to scientific information worldwide by providing opportunities for top-level scientific communication. Faculty members and students at these institutions connect with colleagues everywhere and participate in global science and scholarship. Even in the United Kingdom and the United States, concern is rising about maintaining the standards of existing research universities (Rosenzweig, 1998). Germany worries about the international competitiveness of its top universities and has allocated resources to some key institutions, while the Japanese government has funded competitive grants to create "centres of excellence". China has placed emphasis on creating "world-class" research universities, and India is finally beginning to think about the quality of its mainstream institutions. Similar programmes to enhance standards exist in Chile, South Korea, Taiwan and elsewhere. Several of Africa's traditionally strong universities are seeking to improve their quality in an effort to achieve research university status, with assistance from external funders, although it is, in general, behind levels of academic development on the other continents.

In keeping with the rising profile of research universities in developing countries, many national policy makers, analysts of higher education, and even the international aid agencies and the World Bank, previously convinced that only basic education was worth supporting, now understand that research universities are important for national development. Research universities have emerged on the policy agenda in many developing countries, especially larger countries that seek to compete in the global knowledge economy.

History and perspectives

Universities, since their origins in medieval Europe, have always been concerned with the transmission, preservation and interpretation of

knowledge, although not primarily with the creation of new knowledge (Perkin, 2006). While they have served as cultural and intellectual institutions in their societies, universities have not traditionally been research-oriented. Science was conducted elsewhere for the most part. Wilhelm von Humboldt largely invented the modern research university when the University of Berlin was established in 1818. Von Humboldt's idea was that the university should directly enhance German national and scientific development. This revolutionary idea harnessed science and scholarship – produced, with state support, in universities – to national development. The Humboldtian concept proved to be highly successful, and the new German universities (and others that were reformed to conform to the new model) contributed to the emergence of Germany as a modern country by producing research and educating scientists. A significant additional contribution of the Humboldtian model that affected both science and the organisation of higher education was the idea of the "chair" system – the appointment of discipline-based professors. This innovation helped to define the emerging scientific fields and also shaped the organisation of the university.

Two countries focused on modernisation and development. After 1862 the United States and, several decades later, Japan quickly adopted parts of the German model. The US "land grant" model proved to be particularly successful. It combined the Humboldtian emphasis on research and science and the key role of the state in supporting higher education based on the idea of public service and applied technology (Altbach, 2001). The great American public university, as exemplified by the University of Wisconsin and the University of California in the latter 19th century, opened the door to direct public service and applied technology. It also "democratised" science by replacing the hierarchical German chair system with the more participative departmental structure. Variations of the German, Japanese and US research university concepts largely characterise today's research universities.

Almost all contemporary universities, regardless of location, are European in structure, organisation and concept. Academic institutions from Tokyo to Tashkent and from Cairo to Chicago are based on the Western model. This trend means, for most developing countries, that higher education institutions are not integrally linked to indigenous cultures and in many cases were imposed by colonial rulers. Even in such countries as China, Ethiopia and Thailand which were never colonised, Western academic models were chosen (Altbach and Umakoshi, 2004). For developing countries subjected to colonialism, higher education growth was generally slow paced, and in much of Africa and some other parts of the developing world, universities were not established until the 20th century.

Research universities and academic systems

Research universities generally constitute part of a differentiated academic system – an arrangement of postsecondary institutions with varied roles in society and different funding patterns. Countries without such differentiated systems find it difficult to support research universities, which are always expensive to maintain and require recognition of their specialised and complex academic role. Germany, for example, considers all of its universities as research institutions, and as a result is unable to provide adequate funding to any of them, although a few German universities have been recognised for their research quality and are being given enhanced funding to compete globally. Research universities are inevitably expensive to operate and require more funds than other academic institutions. They are also generally more selective in terms of student admissions and faculty hiring and typically stand at the pinnacle of an academic system.

The creation of a differentiated academic system is thus a prerequisite for research universities and is a necessity for developing countries (Task Force on Higher Education and Society, 2000). A differentiated system has academic institutions with diverse missions, structures and patterns of funding. In the United States, the first country to design academic systems as a way to organise its expanding and multidimensional postsecondary institutions in the early 20th century, the "California" model is generally seen as the most successful approach. California's public system has three kinds of academic institutions, each with quite different purposes (Douglass, 2000). This tiered model – with vocationally-oriented "open-door" community colleges, multipurpose state universities and selective research-oriented universities – has specific patterns of funding and support for each of the tiers as well as quite different missions (Geiger, 2004). In the United Kingdom, since the 1970s, mainly as a result of government policies, research assessment exercises and other initiatives have created a tiered system in which institutions that emerged at the top as a result of quality reviews – Oxford, Cambridge and a modest number of others – have been funded more generously than other universities.

Academic systems often evolve during the massification of higher education. As Martin Trow has pointed out, most countries have inevitably moved from an elite higher education system toward mass access, with half or more of the age cohort attending postsecondary institutions (Trow, 2006). Ever larger numbers of students, with varying levels of academic ability and different goals for study, require a range of institutions to serve multiple needs. Just as important, no country can afford to educate large numbers of students in expensive research universities.

Research universities are a small part of most academic systems. In the United States, perhaps 150 out of a total of more than 3 000 academic

institutions are research universities. Yet these universities are the most prestigious and are awarded 80% of competitive government research funds. Academic salaries tend to be higher, teaching responsibilities for the faculty members lower, and library and laboratory facilities better than the national average. Many countries have just one or two research universities because of their cost and the resources available. Even in fairly large countries, the number of research universities is often small; the United Kingdom has perhaps 20 institutions and Japan has a similar number. China is aiming to establish well over 20, and Brazil has five. Some countries may have more research universities than they can afford; Sweden and the Netherlands are examples.

To allow research universities to flourish requires a way to differentiate them from other types of postsecondary institutions, provide funding at a higher level, and legitimise the idea that these institutions are indeed special and serve a crucial role in society.

Research universities and research systems

Research universities are not the only institutions in which research is conducted. Specialised research institutes, government laboratories, corporate research centres, and other agencies carry out research, and many participate in the international scientific community. In large countries, research universities form part of a more complex research system that includes other kinds of institutions. Universities, however, serve as some the most effective institutions for carrying out research. In addition, they provide formal training and credentials for the future generation of researchers, scholars and teachers. Using advanced students, typically at the doctoral level, to assist with research reduces the cost of research, provides valuable training for students and employs the insights of the new generation of talented researchers.

Research institutes, usually publicly funded, remain common establishments in many countries. The Academy of Science system of the former Soviet Union is one of the most influential models (Vucinich, 1984). Top researchers are appointed at discipline-based (or occasionally interdisciplinary) academies that are usually attached to a research institute. These key scientists in some cases have affiliations with universities, but their main appointments and work are based in the research institutes. The hard sciences and engineering dominate the academy system; the humanities and social sciences are underrepresented. In the case of the former Soviet Union (and contemporary Russia to some extent) and some other countries like those in Eastern Europe and China, these academies are the main providers of research. In these countries, universities have a lower research profile and little direct funding for research. Taiwan, through its Academia Sinica, operates in much the same way. The French CNRS (*Centre National de la*

Recherche Scientifique) and the German Max Planck Institutes have similar functions, although in both cases there are increasingly strong links with universities, including shared researchers. In the United States, the National Institutes of Health (NIH) resemble the European examples although in general the NIH focus more on applied research. Many countries are moving away from the research institute model and toward embedding research laboratories in universities.

There is a growing trend, especially in the United States, of university-based research facilities that are sponsored by corporations and engaged in advanced research involving products or research themes of interest to the sponsoring company. Most focus on applied research that results in marketable products for the sponsoring corporation. US and Japanese companies have been especially active in sponsoring university-related research centres. Companies have set up research facilities near universities to take advantage of academic expertise – the relationship between biotechnology corporations and the Massachusetts Institute of Technology is well known. In other examples, corporate laboratories have been set up at universities or agreements have been made with academic units to provide funds for research in return for access to knowledge products (Slaughter and Leslie, 1997). China has been active in university-industry linkages, with mixed success. While some observers have noted that not all efforts have been successful and have argued that traditional academic values are being weakened, others have praised innovative programmes (Ma, 2007; Liu, 2007).

Universities assemble in one place researchers, teachers and students who create an effective community for knowledge, discovery and innovation. Advanced doctoral-level students can provide highly motivated scientific personnel who at the same time can benefit from direct involvement in sophisticated research. Universities have a wide range of disciplines and scientific specialisations, and research can benefit from interdisciplinary insights, which is especially significant in frontier areas such as biotechnology and environmental science. Universities can also combine basic research with applied applications in ways that other institutions cannot.

The academic environment is enriched by the unique combination of the academic norm of scientific discovery and interpretation, the link between teaching and research, and the presence of scientists and scholars from a range of disciplines. Universities also exemplify the "public good" – the idea that scientific discovery may have wider social benefits – and their focus on basic research is unique. While science can take place in other venues, universities are a particularly effective environment for discovery.

Common characteristics of the research university

Despite variations among research universities worldwide, common characteristics exist that are worth noting precisely because they are so nearly universal.

Research universities, with few exceptions, are government-funded public institutions. Only in a few countries such as Chile, Japan and the United States do private research universities exist, although with the current worldwide growth of private higher education it is possible that a small number of these institutions will aspire to the top ranks. This is the case for a number of reasons. Tuition-dependent private institutions can seldom fund expensive research universities. Research universities are typically large in terms of student enrollments and numbers of departments and faculties. Basic research, the most expensive part of the university, requires public support because it typically seldom produces direct income. The facilities necessary to produce top-quality research, especially in the sciences, are exceeding expensive. Even in the United States, the research mission of some private universities is supported by the government through competitive research grants obtained by individual scientists. In most of the world there is no academic tradition of private research universities. Tax laws generally do not reward philanthropic assistance to private universities. As a result, few institutions except in Japan and the United States have endowment funds that permit the support of research. The growing trend internationally toward for-profit private institutions will further weaken private interest in research universities, although it is possible that a few private institutions trying to reach a competitive place at the top of the academic system may seek to become research universities.

Most research universities are, as Clark Kerr pointed out, "multiversities" (Kerr, 2001): institutions with a multiplicity of missions among which research is only one, but where research and graduate study tend to dominate. Kerr was writing about the University of California, Berkeley, but this generalisation could apply to most of the world's research universities. The mission of these universities encompasses undergraduate education on a large scale to reach out to and serve local and national communities, along with offering a range of vocational and professional credentials to students. Some universities, such as UNAM (*Universidad Nacional Autónoma de México*) in Mexico and the University of Buenos Aires in Argentina, sponsor secondary schools as well. But in all cases, the research mission is at the top of the prestige hierarchy of the institution. This emphasis on research tends to have a negative impact on the quality of undergraduate instruction and typically has a major influence on the direction of the university (Lewis, 2006; Hutchins, 1995). Many, however, argue that research-active faculty members bring a vitality to their teaching that benefits students, even at the undergraduate level.

Research universities are always resource intensive. They are considerably more expensive to build and operate than other academic institutions because of increasingly expensive scientific equipment; rapidly expanding, costly information technology and access to worldwide scientific knowledge; and the need to pay their professors more than the norm for the rest of the academic system. The cost per student is always higher than for the rest of the system. Funding must be available on a sustained basis; fluctuating budgets can damage these institutions.

Finally, research universities attract the "best and the brightest" students in the country and, in some instances, from around the world. Because of their prestige and facilities, these universities generally attract the most able students, and the admissions process is highly competitive. Similarly, research universities generally employ the most talented professors – scientists and scholars who are attracted by the research orientation, by the facilities and often by the more favorable working conditions at these institutions. Research university faculty generally hold doctoral degrees, even in many countries where the doctorate is not required for postsecondary teaching.

Challenges

Research universities face severe challenges at a time when they are recognised as the pinnacle of the academic system and as central to the new globalised economy. The following factors are among the problems faced by research universities in all countries. While the scope and depth of the issues discussed here may vary, they are universally applicable.

Funding

As noted earlier, the basic cost of operating a research university has increased, placing more stress on traditional funding sources, mainly governmental, and forcing institutions and systems to seek new revenues. At the same time, the basic concepts underpinning public funding for higher education are being questioned. Higher education is traditionally viewed as a public good, serving society by means of improved human capital as well as research and service. Thus the society is responsible for paying for much of the cost of higher education. Since the 1980s, spurred by thinking from the World Bank and international policy organisations that have shaped the "neoliberal economic consensus", higher education is increasingly seen as a private good that mainly benefits individual graduates. From this perspective, the individual and his or her family should pay the main costs of higher education through tuition and other fees. This change in thinking occurred at the same time that massification became a key factor in many countries; dramatically increased enrolments were impossible for traditional

government funding levels. Leaving aside the broader economic arguments, this combination of financial factors has been particularly difficult for research universities, which are quintessential "public good" institutions. Their costs are high and their products – educating the top echelons of society, providing research, and serving as repositories of knowledge and sources of social analysis – may not yield practical results in the short run. Student tuition alone cannot support research universities. Further, basic research cannot be expected to fund itself. For these and other reasons, research universities face severe financial strain.

Research universities are subject to the pressures of privatisation (Lyall and Sell, 2006). The privatisation of public universities has become a common phenomenon since public funding is inadequate to support these institutions. In the United States, for example, many of the "flagship" public research universities receive as little as 15% of their basic funding from their primary sponsors, the state governments. The rest of the budget comes from student tuition, research grants, income from intellectual property and ancillary services, and donations from individuals and foundations, as well as endowments. To produce sufficient income, Chinese universities have increased tuition, earned income from consulting and other work by faculty members, and established profit-making companies. In some countries, including Australia, China, Poland, Russia and Uganda, research universities have admitted "private" students who are charged high tuitions, in contrast to the publicly supported enrollments, in order to earn extra funds. Many of these activities significantly undermine the core role of the university.

Research

A culture of research, inquiry and quality is an essential part of a research university. Because of the financial pressures described here, the trend is toward applied and often profit-oriented research, which can be more easily funded than basic research and may yield profits for the university. The commercialisation of research has significant implications for research universities. It changes the orientation of the research community to some extent by emphasising commercial values rather than basic research. Universities have entered into agreements with corporations to produce specific research products or provide access to university facilities. The controversial links between the University of California, Berkeley and the multinational pharmaceutical company Novartis exemplify the possible conflicts between traditional academic norms and commercial interests. The ownership of knowledge, the use of academic facilities and the ultimate openness of scientific research are all issues raised by these new commercial linkages (Slaughter and Rhoades, 2004).

With the rising costs of university research due to expensive laboratories and equipment, large interdisciplinary scientific research teams and other factors, raising funds to support research in the sciences grows more difficult. Even large and well-funded universities in the industrialised countries struggle to support cutting-edge research. In some fields, only the richest institutions can support frontier scientific research.

Research universities in developing countries will need to select fields of research that are affordable and linked to national needs and priorities, for example agriculture or some areas of biotechnology. Appropriate links with private-sector companies, including multinational corporations, may be necessary, and a balance between applied and basic research will need to be worked out. Work in the sciences is only one part of the research agenda of a university. The social sciences and humanities are often neglected because the hard sciences are seen to be more profitable and prestigious. Yet the social sciences and humanities are important for the understanding of society and culture. Disciplines like history are of course relevant, and so are newer fields such as policy studies. They are also considerably less expensive than the hard sciences.

The details of allocating funding for research are also central policy issues. While basic resources, from the university budget, for laboratories, libraries and other research infrastructures are necessary, funding for specific research projects can come from a variety of sources and be allocated in different ways. A system of competitive awards encourages innovative ideas and granting funds for the best projects. Such funds can come from government ministries and granting agencies, private and foreign foundations, or business firms. An appropriate mix of funding sources and allocation mechanisms encourages competition for research funds and the best quality and most innovative research ideas.

Commercialism and the market

The intrusion of market forces and commercial interests into higher education is one of the greatest challenges to universities everywhere. The threat to research universities is particularly great because they are quintessentially "public good" institutions. Market forces have the potential for intruding into almost every aspect of academe (Kirp, 2003). Roger Geiger has written about "the paradox of the marketplace for American universities":

> Hence the marketplace has, on balance, brought universities greater resources, better students, a far larger capacity for advancing knowledge, and a more productive role in the US economy. At the same time, it has diminished the sovereignty of universities over their own activities, weakened their mission of serving the public, and created through

> growing commercial entanglements at least the potential for undermining their privileged role as disinterested arbiters of knowledge. (Geiger, 2004, p. 265)

For developing countries, the challenge of the market is particularly serious because there is less basic financial stability and a weaker tradition of academic autonomy. External market pressures can quickly affect the entire institution. For research universities, market forces may significantly shift the direction of research, the focus of the academic profession and the financial balance of the institution. It is clear, however, that if research universities are forced to rely increasingly on their own resources for survival, market forces will determine institutional directions and priorities.

Autonomy and accountability

The tension between autonomy and accountability is a perennial concern for academic institutions. Universities' tradition of academic autonomy involves the ability to make their own decisions about essential academic matters and to shape their own destiny. At the same time, external authorities, including funders, governmental sponsors and religious organisations, held some control over higher education. Since the origins of universities in medieval Europe, these tensions have been evident. In the era of mass higher education, demands for accountability have increased given higher education's rising impact on both the economy and society. Higher education is both a significant state expenditure and of growing relevance to large numbers of people (El-Khawas, 2006). The demand for contemporary accountability almost always comes from the state, the source of much of the funding for higher education.

Research universities have a special need for autonomy, and current demands for accountability are especially problematical for them. While academe in general needs a degree of autonomy to function effectively, research universities must be able to shape their own programmes, carry out a long-term perspective, and manage their budgets and the academic community. Not only do research universities require steady funding commitments, they also need autonomy to develop and maintain their strengths. The academic community itself is the best judge of the success of programmes. Basic research, especially, must have autonomy to develop, since it typically emerges from the interests and concerns of the faculty.

Accountability has become an ever more powerful force – reflecting not only the concerns of government authorities, but increasingly market forces as well. Students have demanded greater knowledge of the performance of academic institutions, and commercial enterprises, linked ever more closely to academic, also demand information and often influence academic policies.

This is, of course, an essential part of contemporary higher education. In this context, research universities, with their need for autonomy, face a difficult environment in the era of markets and accountability.

The globalisation of science and scholarship

Science in the 21st century is truly global in scope. Research results are immediately available worldwide through the Internet. Scientific journals are circulated internationally, and academics contribute to the same publications. Methodologies and scientific norms are used worldwide more than ever before. Scientific equipment, ever more sophisticated and expensive, is available everywhere, and there is pressure for research universities to have the most modern laboratories if they wish to participate in global scientific research. Further, research is increasingly competitive, with researchers and universities rushing to present results and patent or license potentially useful discoveries or inventions. Science, in short, has become a "high-stakes" and intensely competitive international endeavour. Entry into advanced scientific research is expensive, as is maintaining a competitive edge.

The challenge consists not only of laboratories and infrastructure but also the definitions and methodologies of science and scholarship. Scientific globalisation means that participants are linked to the norms of the disciplines and of scholarship that are established by the leaders of research, located in the major universities in the United States and other Western countries. The methods used in funded research and presented in the main scientific journals tend to dominate world science. Further, the themes and subject areas of interest to leading scientists and institutions may not be relevant to universities at the periphery. Involvement in world science means, in general, adherence to established research paradigms and themes.

The high cost of science creates serious problems for academic institutions without a long tradition of research and the required infrastructure and equipment. It is no longer sufficient to build an infrastructure that permits research on local or regional themes if a university wishes to join the "big leagues". Universities that wish to be considered research-oriented need to participate in the international scientific network and compete with institutions and scientists worldwide. The costs of joining the league of research universities is an especially serious problem for developing countries, with funding problems and no experience of building such institutions. Small academic institutions in both larger countries and small industrialised countries seeking to transform themselves into research universities face similar challenges. The world of global science is expensive to join, and sustaining participation is also costly.

The paradox of global science is similar to globalisation in general. Globalisation – through information technology, better communications, the worldwide circulation of highly trained personnel and other factors – permits everyone to participate in the global marketplace of science, scholarship and ideas. At the same time, globalisation subjects all participants to the pressures of an unequal global knowledge system dominated by the wealthy universities, and imposes the norms and values of those institutions on all (Altbach, 1987, 2004).

Public and private

As discussed earlier, almost all research universities outside Japan and the United States are public and state supported. It is likely that this trend will continue, although with some changes. The fastest-growing sector of higher education worldwide is private. Thus the expansion of the private sector will have an impact on research universities, albeit indirectly, since private higher education is not focused on research (Altbach, 1999). With only a few minor exceptions, the new private institutions focus on teaching and providing credentials to students in professional and other fields, often in specialised niche areas. New private universities are not full-fledged academic institutions with a range of disciplines in most fields of science and scholarship. Specialisation is particularly an aspect of the rapidly expanding for-profit sector of private higher education. The sector is never concerned with building research capacity, since research does not produce profits rapidly.

A small number of nonprofit private universities may succeed in building research capacity to raise their status and contribute broadly to education and research. The Catholic University in Santiago, Chile, and the American University in Cairo, Egypt, are two examples of high-status private institutions that are focusing on developing significant research profiles to build national and international reputations. Institutions such as these generally have a tradition of academic excellence and access to philanthropic funds to develop research programmes.

The growing role of private higher education worldwide means that a smaller proportion of universities will focus on research. This might, in some ways, benefit public research universities since the state may have some of the burden of mass higher education access lifted and be able to focus on promoting the research sector. It is, however, more likely that as the private sector takes on more responsibility for higher education, the state will continue to decrease its support for the sector, as has been the trend in many countries. The rise of the private sector, with its lack of focus on research, may threaten the research role of universities in most of the world, especially in developing countries.

Research universities as meritocracies

In some parts of the world, universities do not adhere to strict meritocratic values. Corruption is a problem and grants and promotions may be awarded for reasons unrelated to quality and merit. For research universities, adherence to meritocratic norms and academic honesty is of special importance. Universities are, of course, part of a broader social and political system, and if the polity is rife with corruption and favoritism, academe will not be immune. The problem of academic corruption in its many facets is present in some developing countries. Systemic corruption is also evident in some of the countries of the former Soviet Union as well as elsewhere. Bribery in student admissions and the awarding of degrees, flagrant plagiarism by students and academics, widespread cheating on examinations, and other forms of clearly unacceptable behaviour have become endemic. In India students have demonstrated for the right to cheat on university examinations. In China there has been a growing public concern about plagiarism at all levels of the academic system and violation of intellectual property at some research universities (Pocha, 2006). In a healthy academic system, when such behavior takes place, it receives the condemnation of the academic community and is rooted out.

The situation is even more dangerous when it directly involves the academic profession. Poor academic salaries contribute to unprofessional professorial practices. Widespread illegal selling of lecture notes and other course materials in Egypt by professors is linked to the need of academic staff to earn enough money to survive (Arishie, 2006). Selling academic posts is a common practice in some countries, and awarding professorships on the basis of ethnic, religious or political factors is widespread as well.

While corrupt practices are damaging in any academic environment, they are toxic to the culture and ethos of the research university. The ideal and practice of meritocratic values are central to the research university. Excellence and intellectual quality are key criteria for student admissions, academic hiring, promotion and reward in research universities. The underpinnings of these academic institutions depend on meritocratic values. Widespread violations will inevitably make it impossible for a research university to flourish.

Academic freedom

Academic freedom is a core requirement for research universities (Altbach, 2007). However, a few definitions are necessary. Of primary importance is the freedom to undertake research and publication in one's area of research and to teach without any restriction in one's areas of expertise. These rights are parts of the more limited German definition of academic freedom. The right of academics to express their views in any public forum or in writing on any topic, even on subjects far from the individual's academic

expertise – the broader US definition – is increasingly accepted around the world. Academic freedom is in some countries protected by specific academic legislation as well as traditional norms and values. Tenure systems in many countries and civil service status in others provide guarantees of employment security so that it is difficult, if not impossible, for governmental authorities or others to terminate a professor who is protected by these guarantees.

Research universities are particularly dependent on a robust regime of academic freedom because their faculty members are directly engaged in the discovery of new knowledge. Research university professors are also more likely than other academics to be "public intellectuals", engaged in civic discourse on topics of societal importance. History shows that academic freedom – freedom in the classroom, in the laboratory and in publishing the results of research and scholarship – is central to building a research culture.

In some countries, the norms of academic freedom are not fully entrenched, and as a result it may be more difficult to sustain top-quality research universities. Where academic freedom is entirely missing or severely restricted, as is the case in a small number of countries, research universities with reasonable standards cannot be successful regardless of financial support or resources. More common worldwide are universities with some restrictions on academic freedom. In many countries, especially developing countries, in areas of knowledge that are considered politically or socially sensitive, research, publication or commentary is restricted. Such fields include ethnic or religious studies, environmental research, and studies of social class or social conflict, among others. The sanctions for critical analysis in these fields may be as severe as firing from academic posts, jail or exile. More common are less serious penalties or informal warnings.

There seems to be a delicate balance between academic freedom and a viable research university. Singapore has adopted the 19th-century German definition of academic freedom: scholars are free to express their views on issues directly in their fields of expertise, but not on broader issues. Politically sensitive areas such as ethnic relations may create special problems for academics. At the same time, Singapore has been successful in building research universities and establishing collaboration with respected universities abroad. The situation in China is similar, although restrictions are reportedly greater and sanctions for violations can be more severe. In the Middle East, there are taboos on research and publication concerning politically sensitive Arab-Israeli relations or certain religious or ethnic topics. In some African countries, criticism of the ruling regime in power can result in jail terms or job loss, although in general academic freedom is respected. It seems that reasonably successful research universities can be built under conditions of incomplete academic freedom so long as the restrictions are not too severe, although broad comparisons show universities with the greatest amount of academic freedom do best as effective research institutions.

In the United States and other industrialised countries, the main threat to traditional norms of academic freedom comes from the commercialisation of research and the increasing links between universities or individual researchers and corporations interested in university-based research. Under the banner of university-industry collaboration, agreements are made that sometimes restrict access to research findings, focus the attention of research groups on commercially focused products and emphasise applied research at the expense of basic work (Slaughter and Rhoades, 2004; Kirp, 2003). This commercialisation may be financially advantageous to the university and to individual researchers but often places restrictions on the free communication of knowledge, thus violating one of the principles of academic freedom.

Academic freedom is a complex and nuanced topic, central to the success of a research university. It is a core value of higher education everywhere and for all types of academic institutions, but is of special importance for research universities. The challenges to academic freedom in the 21st century come not only from repressive external authorities but also from the new commercialism in higher education. Problems may also originate from within the academy due to the politicisation of the academic community or tensions caused by religious or ethnic relations in some countries.

The academic profession

The professoriate is central to higher education. Research universities rely especially on the quality and focus of the academic profession, and current developments relating to the professoriate worldwide are not favorable for either the profession or for research universities (Altbach, 2003). Research universities require academic staff with the highest possible qualifications: doctoral degrees from reputable universities. This seemingly obvious statement is necessary because the majority of academic staff in developing countries do not hold a doctorate.

Research universities require full-time professors, scholars and scientists who devote their full professional attention to teaching and research at the universities. Without a large majority of full-time academic staff, it is simply impossible to build a cadre to form a committed and effective professoriate. Not only required to fulfill the core functions of the university, full-time faculty also need to participate in governance and management because research universities need a high degree of autonomy and faculty governance. The lack of full-time faculty is one central reason Latin American countries have failed to build research universities.

Along with full-time commitment, salaries must be sufficient to support a middle-class lifestyle. While they need not be paid salaries similar to those of colleagues in the most highly remunerated universities internationally,

professors must be solid members of the middle class in their country. Frequently, full-time professors generate a significant part of their income through consulting, moonlighting at other institutions, or, at some universities, taking on extra teaching loads in fee-producing programmes. These arrangements detract from the core functions of the professoriate and make full academic productivity difficult to maintain. In some disciplines, consulting work, applied research for industry and other links with external agencies may provide useful synergies for academic work, but in many countries outside work and dependence on additional income are deleterious to the research university. Just as problematic, academic salaries, overall, have stagnated worldwide at the same time that remuneration for similarly educated professionals outside universities has increased in some countries quite dramatically. In order to attract the "best and brightest" to academe, salaries must be competitive.

Teaching responsibilities must be sufficiently limited to allow time and energy for research. In the United States, the standard teaching load in most research universities is two courses per semester or four per academic year. In some scientific fields, even less teaching is expected. Similar teaching loads are common in Europe. In many developing countries, much more teaching is required, leaving little time for research. The most active research-focused professors in the United States undertake a significant part of their teaching in graduate (postbaccalaureate) programmes, which helps to link teaching with research and increases productivity. In European countries, with doctoral programmes that are mainly focused on research, professors are given sufficient time for doctoral supervision and mentoring. Few developing countries have instituted these practices.

The academic profession must have a career ladder that permits talented professors to be promoted up the ranks of the profession on the basis of their performance and the quality of their work and a salary structure determined by performance. In many countries, an initial full-time appointment is tantamount to a permanent job. In some, such as Germany, it is difficult for a junior academic to obtain a post that has the possibility of promotion because of the organisation of the career structure. In much of the world, promotion up the academic ranks is largely a matter of seniority and not of demonstrated performance in teaching and research. In the majority of countries, academic salaries are determined by seniority, rank and, in some places, discipline rather than by job performance. This is especially true for countries where academics are considered civil servants – mainly in Western Europe (Enders, 2001). Civil service status provides strong guarantees of permanent employment but seldom measures productivity as an element of promotion.

The challenge is to link reasonable guarantees of long-term employment, both as a means of ensuring academic freedom and as a way of providing employment security and institutional loyalty. The US tenure-track system,

although much criticised within the United States, may be closest to this goal (Chait, 2002). It provides initial probationary appointments with a series of rigorous evaluations that, if passed, lead to a permanent (tenured) appointment after six years. Further promotion, from the rank of associate to full professor, is also merit-based and depends on a rigorous evaluation. Most US colleges and universities follow this pattern although the research universities have the most stringent evaluations. Increasingly, US universities have also instituted "post-tenure review" so that productivity is measured following the award of tenure. Typically, salary raises are given based on performance as well as seniority. Even in the United States, the academic profession is threatened – from the perspective of the research universities. The two most serious problems are the growth of a part-time academic workforce and the relatively new category of non-tenure-track, full-time appointments, similar in some ways to the German pattern of appointments that cannot lead to permanent careers. Now, half of the new positions at US colleges and universities are in these categories, although at research universities the proportion of tenure-track positions is higher (Schuster and Finkelstein, 2006).

The academic profession is central to the success of the university everywhere. A research university requires a special type of professor – highly trained, committed to research and scholarship, and motivated by intellectual curiosity. Full-time commitment and adequate remuneration constitute other necessities. A career path that requires excellence and at the same time offers both academic freedom and job security is also required. Academics at research universities need both the time to engage in creative research and the facilities and infrastructure to make this research possible.

Developing countries: goals, aspirations and realities

Many developing and middle-income countries need research universities to participate in the expanding knowledge and service-oriented economy of the 21st century. Aspirations, however, must be tempered by realities. The goals of research universities in developing countries necessarily differ from those of the large industrialised countries. For developing countries, the goals include a number of core elements.

Creating and retaining a scientific community

Research universities employ scientists and scholars in a range of disciplines. Without these institutions, highly trained academics would leave the country – as happens in many developing countries today that lack these institutions – or would fail to be trained in the first place. Research universities provide the institutional base for top professors, scholars and scientists who comprehend what is happening at the frontiers of science in all fields and can

participate in the global scientific community. The institutions retain local talent at the same time as they produce additional talent. The academic community in the local research university can communicate with scholars abroad and can participate in the global scientific community.

The relevance of research and teaching to industry and society

Local research universities are the only institutions able to give attention to local needs. They understand the specific problems of the country in which they are located and can focus on these themes. External institutions have neither the interest nor the knowledge to do so. Research universities can bring international scientific trends to bear on local problems and contribute to the development of domestic industry, agriculture and society.

Cultural and social development and critique

Research universities everywhere constitute centres of culture and critique. They are of special importance in this regard in developing countries, where few other societal institutions have relevant expertise. In many countries, there are few museums, orchestras or other cultural institutions capable of building and interpreting indigenous culture. Research universities are often the only places with a "critical mass" of expertise and resources in a range of cultural areas. These institutions also provide social commentary, analysis and critique. Again, they are uniquely positioned for these roles; they have academic freedom and a community of faculty and students interested in a range of disciplines. While political authorities may find criticism unwelcome, it is of central importance for the development of a civil society.

Research and analysis in the national language(s)

Research universities must, of course, function in the international languages of science and scholarship. Simultaneously, they have a responsibility to disseminate research and analysis in local languages. Indeed, they may provide a key source for national-language development by producing scientific and literary work in the language and building up vocabulary. The role of indigenous languages in developing country research universities is a highly complex one. In many countries, including almost all of Africa, India and other regions, higher education takes place in nonindigenous languages (English, French, etc.) and the issues are quite complicated. But it is clear that research universities play a key role in supporting and developing local languages.

Educating a new generation of scientists, scholars and technicians

It goes without saying that the central role of the research university is education – the training of the next generation of educated personnel for the

society. Society's leaders, in politics, intellectual life, industry and, of course, education, are trained mostly in the local research university. The role of UNAM in educating generations of the Mexican elite is just one example of a common trend (Odorika and Pusser, 2007).

The aspirations of the research universities in developing countries must be realistic. With the exception of a few of the largest and most successful developing countries, including China and India, aspiring to compete with Harvard or Oxford or to build a top-ranking world-class university is not a reasonable goal. Rather, developing countries can seek to compete with second-rank but quite distinguished research universities in the industrialised world, such as Indiana University or the University of Nebraska in the United States, York University in the United Kingdom, or the University of Amsterdam in the Netherlands.

It is also necessary to select specific areas of science and scholarship to emphasise. Most research universities provide instruction in the main academic disciplines, and many have associated professional schools in fields such as medicine and law. A few research universities are smaller specialised institutions, such as the California Institute of Technology. Few research universities are outstanding in all fields. They make choices concerning which disciplines will be emphasised to build and maintain the highest standards of quality. In some other fields, good quality can be achieved but not necessarily at the highest international levels. These decisions may be made on the basis of available resources, an examination of national or regional needs, or a simple assessment of existing strengths. Some smaller developing countries may lack the funds to build and sustain a research university. In such cases, it may be possible to build a regional research university. Information technology makes this more practicable. Some regions make such initiatives easier to implement than others.

Conclusion

Research universities stand at the apex of a higher education system, providing access to international scholarship and producing the research that may contribute to the growth of knowledge worldwide or in local economies. These universities are also the means of communication with the international world of science and scholarship. For developing countries, research universities play a special role because they are often the sole link to the international knowledge network. Industrialised countries possess many points of access: multinational corporations, scientific laboratories and government agencies, among others. The best local academics are employed at research universities, which provide them with a home and with the possibility of contributing to science and scholarship without leaving the country. Research universities are, thus, centrally important for the success of any higher education system.

Maintaining research universities requires sustained funding to keep these institutions abreast of emerging fields and advances in knowledge. Research universities have special characteristics that may not be common in the academic systems of many developing countries. These aspects include a cadre of full-time faculty, academic freedom, a salary structure permitting a local middle-class lifestyle, promotion and salary enhancement based on performance rather than just seniority, reasonable guarantees of long-term appointment, absence of corruption in all sectors of academic work, and an academic culture of competition and research productivity. These elements may not be present in existing universities. They require resources as well as a cosmopolitan academic environment. Research universities constitute a kind of flagship for the rest of the academic system, providing examples of the best academic values and orientations. At the same time, the norms of the research university, which do not characterise the rest of the academic system, require support. Research universities provide the skills needed by 21st-century economies and societies and reflect the best academic values. Research universities are central institutions for the global economy.

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Managing Human Resources in Higher Education: The Implications of a Diversifying Workforce

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Human resource capacity has become a critical issue for contemporary universities as a result of increasing pressures from governments and global markets. As a consequence, particularly where the institution is the employer, changes are occurring in the expectations of staff and institutions about employment terms and conditions, as well as the broader aspects of working life, and this is affecting academic and professional identities. Even under different regimes, for instance, in Europe, with the government in effect as the employer, institutions are giving greater attention to ways in which they might respond to these developments. This paper considers key issues and challenges in human resource management in higher education, and some of the implications of these changes.

Introduction and background

The paper builds on themes arising out of an international conference on "Trends in the Management of Human Resources in Higher Education" organised through the OECD Programme on Institutional Management in Higher Education in Paris in August 2005. Despite systemic differences across nations, it was apparent at this meeting that workforce development had become a critical issue in enabling universities to deliver multiple agendas in complex environments. While national context exerts significant influence, institutions can, and do, in the fine detail, sometimes of marked inter-institutional variance, respond distinctively to common macro-forces. These local behaviours reflect an admixture of institution mission, tradition and meso-culture and are, in turn, the outcome of managerial and collegial preferences and mores. However, whatever the national circumstances, it was evident that the management of human resources involved a combination of "hard" issues such as recruitment and retention, rewards and incentives, and "softer" issues such as motivation, work-life balance, and career development. Bringing together these two sets of issues at both institutional and local levels was a challenge, especially in devolved organisational structures with distributed management and leadership.

Historic, systemic differences in relation to human resource management continue to exercise significant, although arguably changing, influence. A simplified dichotomy remains between institutions that have power and responsibility as employers of staff, and institutions where this authority rests with the government. In the former instance, the institution can appoint, grade and, at least to a degree, determine the reward of staff, aspects of their conditions of employment, their development, and the building of capacity. In the latter situation, human resources operations in institutions are constrained in scope, and many key areas (such as recruitment, reward and promotion) require external approval and authorisation. In reality, the picture is even more complex, and change is taking place as governments seek to encourage transformation, but the simple model outlined above captures the broad parameters of different perspectives on the issues and challenges faced by institutions.

As one UK Director of Personnel, who was consulted as part of this study, observed, institutions in the United Kingdom see discussions of human resources as increasingly central to the organisation, and as a partnership for

capacity building. For example, increasingly clear views are held about the linkage between institutional performance and the ability to attract, retain, reward and develop staff to perform the multifarious roles required of a contemporary university, and to do so in a responsive, expert and flexible manner. That vision resonates with Clark's (1998) concept of the entrepreneurial university, and with his subsequent work on sustaining change (2004). The first study used several European examples, all institutions with a considerable degree of autonomy, but the latter work ranged more widely, geographically and systemically.

Care should be taken not to conflate a tradition of the administration of the higher education institution operating in a "civil service" mode, with senior academics as the equivalent of the government ministers in setting policy and administrators serving their needs and policies, and structures where staff are formally employed by government with the terms and conditions of civil servants. Of course, such arrangements can change, as happened in Japan (Oba, 2005) where in April 2004 the national universities became incorporated as autonomous bodies rather than as a service of the Ministry of Education. Oba noted: "This policy was adopted to make personnel management more flexible, enabling teachers to engage in a variety of activities and making it possible to recruit qualified academic and non-academic staff, including foreigners" (Oba, 2005, p. 108).

In an initial evaluation of the changes, Oba highlighted a blurring of the boundaries between public and private sectors of higher education, wider opportunities for recruitment, greater potential for conflict within institutions between management and staff unions, and the need to professionalise management and to learn from experience elsewhere. In relation to the final point, Oba likened the process of incorporation of the national universities in Japan to the contractualisation policy adopted in France in the 1980s.

Many studies show that the role of faculty is becoming more complex and fragmented (Halsey, 1992; Coaldrake and Steadman, 1998), and more pressured (McInnis, 2000; National Committee of Inquiry into Higher Education, 1997). Likewise, whilst detail differs between and within higher education systems, many boundaries between categories of staff are becoming more blurred. Thus, whereas human resource management was once something that was "done" by the most senior managers and professionals to rank-and-file members of the workforce, the majority of institutional managers are now likely to have responsibility for staff on a day-to-day basis, across a range of functions, including teaching, research, business partnership and project work. Furthermore, as distinctions blur between academic work and the contributory functions required to contextualise that work in global, mass higher education systems, individuals move increasingly between contiguous academic, quasi-academic and management domains. As a result, the

composition of institutional workforces is changing, and mixed roles emerging (Whitchurch, 2006a, 2006b).

Thus, in its transition from a "community of scholars" to a "community of professionals" (AUT, 2001), the university is developing new kinds of contracts with its workforce, both in the formal sense, and in terms of the relationships and networks that constitute the "lived environment" (Knight, 2005) of day-to-day interactions. However, as noted by McInnis, these developments have not been well documented, in contrast with, for instance, issues around policy and governance: "The impact of shifts in job profiles, values and behaviours at the workface has received less attention than issues such as governance and senior academic leadership" (McInnis, 1998, p. 161).

Hereafter, this paper concentrates on the issues and challenges arising, rather than further pursuit of detailed nuances of systemic implications. Some may view that as introducing undue bias towards a particular model of governance and management. That is not the intention, nor is it the philosophy being espoused. Rather, the stance arises from an intentional focus upon pressures for change and adjustment, associated responses and human resource implications. While national systems can, and do, seek to moderate or translate the nature of these pressures, many forces and pressures for change are viewed in the literature as being pervasive, almost a-spatial.

Institutional contexts: pressures for change

Global markets mean that universities need increasingly to compete globally with other knowledge providers for highly qualified staff. Whereas, in the past, relatively homogeneous conditions of employment and linear career structures offered stability and predictability, contemporary universities are now part of "a very complex knowledge producing game" (Gibbons *et al.,* 1994, p. 65), which obliges them to seek new and different skills in a volatile environment (Wood, 2005). There has been a shift, therefore, from an environment that was secure and low maintenance, to one that is increasingly high maintenance and high risk, albeit the extent and pace of that shift differs depending upon where institutions sit in their relationships with government, and the powers devolved to them.

In some systems such as in Australia, New Zealand and the United Kingdom, public funding bodies have sought strategies that will mitigate the effects of uncertainty and maximise the performance of staff. In the United Kingdom, for instance, there have been initiatives by the Higher Education Funding Council for England (HEFCE) funding the development of good practice in Rewarding and Developing Staff (HEFCE, 2005), and in Leadership, Governance and Management (HEFCE, 2003). At the same time, a Higher Education Role Analysis scheme (HERA) (*www.hera.ac.uk*) or an equivalent

process has been implemented to enable the incorporation of all staff on a single, national pay spine. This is to ensure compliance with European Community equal opportunities directives, and to meet government and funding council policies. It has focused attention on the comparability of role content, as well as on pay and conditions (Prudence and Deer, 2005).

Universities are also faced with conflicting pressures. For instance, even allowing for international variance, they face encouragement to both collaborate and compete with each other and this has led to operational as well as disciplinary complexities (Barnett, 2003, pp. 184-185). These complexities relate not only to structures and systems, but also to the organisation and development of staff, both in terms of workforce planning and the local management of individuals. The regulatory and policy background for higher education systems has also become more complex, particularly in respect of legislation relating to employee and employer rights and obligations, and equity issues around, for example, disability, race and gender.

At the same time, approaches to work and working life are changing. Staff in their 20s and 30s are said to value access to information, opportunities for networking and a balanced lifestyle as much as the traditional milestones and status offered by a professional career. Additionally, a proportion of younger staff do not necessarily anticipate a career for life, and look to acquire experience that will be distinctive, equipping them for a future that is more uncertain than it was for their predecessors (McCrindle, 2005, 2006). Globalisation has, therefore, contributed to changed individual expectations and work styles. However, despite an expanding literature on the effects of these changes on universities' teaching and research activity (for instance, Scott, 1995; Readings, 1996; Blake *et al.*, 1998; Douglass, 2005), and contractual and employment issues (for instance, Slaughter and Leslie, 1997; Rhoades, 1996, 1998), there has been less focus on their implications for human resource management.

Professional contexts

Academic staff

This evolving environment is impacting on higher education institutions around the world, although there are substantial geographical and intra-sectorial differences in the pace of change, the precise nature of the implications for staff, and the reactions of staff and other stakeholders. What some may see as threats, others may perceive as liberating or legitimising developments. Much has been written on the intensification of academic work (Harman, 2003; McInnis, 1999), pressures to adapt roles and practices, resistance to such forces (Shattock, 2000), and a tendency to favour change

strategies of accumulation and accretion (Coaldrake and Stedman, 1999). Perhaps not surprisingly, given the foregoing points, the literature also reports growing concerns about workloads, stress, issues of work-life balance and widespread opposition to a perceived increase in unwanted bureaucracy.

Kogan, Moses and El-Khawas (1994) noted increasing diversification of academic tasks (teaching, scholarship, research, consultancy, community service and administration). Thus, the range of roles that an academic may be expected to undertake can include: "teacher, scholar, practitioner, demonstrator, writer, model, discoverer, inventor, investigator, designer, architect, explorer, expert, learner, developer, collaborator, transformer, facilitator, enabler, evaluator, critic, assessor, setter, guide, colleague, supervisor, mentor, listener, advisor, coach, counsellor, negotiator, mediator, juggler, manager, leader, entrepreneur" (Gordon, 1997, pp. 67-68). These can be clustered under six overarching core functions: teaching and student support; research; community service; professional service; leadership, management and consultancy; and developmental project work.

Thus, the historical trilogy of academic work – teaching, research and administration – would appear to have been expanded, although some suggest that erosion has also taken place of the broad balance between the tripartite functional roles of an academic (for instance, Blackwell and Blackmore, 2006, p. 374). Moreover, a growing minority of academics may spend a substantial proportion of their time on functions such as leadership and management, consultancy, and professional or community service. While they may do this to serve the needs of their institution or department, such activities may also match the interests and aptitudes of the individuals concerned, or their perception of positive opportunities. Here, attention will focus on three aspects of the effects of these trends on academic staff: management responses in terms of recognition and reward; academic identities; and development and support activity.

Management responses in the recognition and reward of staff

Management responses vary between institutions and sectors, but they can be broadly divided into responses which address career paths, implicitly or explicitly; and responses which provide additional finance for additional responsibilities or for performance in relation to the broader academic functions outlined above. There can be considerable overlap between those two groupings, which are not necessarily polarised as alternative strategies. In the dynamic environment outlined earlier, any system that inhibits changes to academic career pathways, or additional financial payments for extra responsibilities, will be confronted by distinct challenges. In such circumstances, the options could involve additional demands on academics without extra pay or formal recognition, and the creation of new professional

support roles to perform tasks such as learning support, project management, instructional design or student advice and guidance. However, in many cases, institutions may have developed implicit and, more recently, explicit ways of addressing the career development and career pathways of academic staff.

A common starting point for institutions, which have such authority to define new posts and titles, has been to attach particular salaries to such posts, or to pay a responsibility component, sometimes performance-related. Many of those responsibilities entail what could be viewed as leadership and management functions, for example in relation to teaching, research or entrepreneurship; academic quality assurance and enhancement; or another key institutional objective. These posts can be centrally based or pan-institutional. If based in faculties, schools or departments, they may have a narrower locus of responsibility. For example, institutions with schemes for encouraging some individuals to focus on learning and teaching have articulated semi-explicit career structures, in which individuals might seek to progress from an institutional teaching fellowship to a broader leadership and management function, such as the role of associate dean or of director of teaching in a department or school. Increasingly, institutions have adjusted promotion criteria to enable progression on the basis of a broader range of academic activities, even though the perception on the ground may continue to be that performance in research outweighs other criteria. These trends in the United Kingdom and elsewhere could be seen as analogous to established practice in the United States. However, in the United Kingdom these individuals normally continue to be classed as academics, whereas in the United States many of them, at least temporarily, become categorised as administrators.

The position of early or mid-career researchers who do not hold full academic posts is also attracting management attention in higher education institutions; bodies responsible for funding research; and, particularly in continental Europe, research institutes which are major employers of research staff. In 2005, the European Commission (EC) published recommendations on the European Charter for Researchers, and a Code of Conduct for the Recruitment of Researchers. A decade earlier, in the United Kingdom, the Research Councils had published a Concordat jointly with other key stakeholders, aimed at enhancing conditions of employment, career development and management of contract research staff, that is, those on fixed term contracts. On career development, the European Charter urged:

> ... a specific career development strategy for researchers at all stages of their career, regardless of their contractual situation, including for researchers on fixed-term contracts. It should include the availability of mentors involved in providing support and guidance for the personal and professional development of researchers, thus motivating them and

contributing to reducing any insecurity in their professional future. (European Commission, 2005, pp. 18-19)

Other examples of action in relation to research staff include:

- The introduction, in 2003, by the French research agency INSERM (*Institut national de la santé et de la recherche médicale*), of interface contracts and supplementary remuneration, aimed at motivating full-tenure researchers and enhancing scientific productivity and the transfer of knowledge in biomedical and health research (Bréchot, 2005).
- Action by the Italian Rectors Conference and the Spanish Ministry for Research to implement the EC Code and Framework for Career Development of Researchers (Gruber, 2005).
- A three-year training programme for middle management staff at the Consiglio Nazionale delle Ricerche – *Instituto Nazionale per la Fisica della Materia* (CNR-INFM) in Italy, aimed at the development of academic and research staff (Strazzeri, 2005).
- The Marie Curie Fellowships, which has created some 3 000 members of the Marie Curie Fellowship Association, a body formed by current and former fellows.

Meyer (2005) suggests three principles for making academic careers more attractive: 1) openness in recruitment, criteria for appointments, national and local funding policies, and support for mobility (geographic, inter-sectorial and interdisciplinary); 2) respect in the way institutional governance and reward systems value researchers, and the guidance provided in relation to the balance between independence and apprenticeship; and 3) supportiveness along the lines expressed in the European Code. Both Meyer (2005) and Strazzeri (2005) stress the importance of encouraging a sustainable work-life balance and of developing a culture taking a long-term view of investing in the future.

As stated in the Introduction, contexts may vary considerably between countries. Thus, the situation in the United Kingdom is affected very significantly by the cyclical Research Assessment Exercise (RAE) and by the absence of the tradition of clustering researchers, especially in expensive fields of investigation, in independent or largely independent research agencies. Whilst much research in the United Kingdom, as elsewhere in the world, occurs outside the academic setting, in business, research within the sector occurs predominantly in universities and bodies closely affiliated to them. Thus, a large research-intensive university in the United Kingdom would typically employ more than 1 000 staff on various research grades, usually on fixed-term contracts. Universities in the United Kingdom are addressing the terms, conditions and career development of researchers, partly in response to European Community directives and limitations on fixed-term contracts, and partly in recognition of the importance of investing

in the continuing development of a talented and specialised component of the workforce.

As the RAE has progressively sharpened the criteria for research selectivity and excellence, and the associated financial rewards to institutions, so the latter have sought to optimise their prospects of success. Over time, the average scores have improved substantially, so it can be argued that numerous individuals, departments (units of assessment) and institutions have succeeded. However, since the financial resources available have not increased in line with that shift in performance, the net effect has been to skew the reward progressively toward the highest level of achievement, as judged by panels of peers.

As well as financial consequences for institutions, these developments have had significant consequences from a human resource point of view, including:

- The need to retain, promote and reward research stars.
- The need to recruit productive researchers, with potential distortion of the balance of recruitment criteria.
- The decision to omit some staff from RAE returns, with related issues of motivation and adjustment of balance of duties and roles, and even titles and contracts.
- The danger that cumulative effects of these strategies might be to send a signal, intentional or otherwise, that performance in research is the major, even the only, issue; with the consequent danger that research within the sector can challenge the importance of other duties, roles and functions, especially teaching, service and good academic citizenship.
- Potential for distortion of research agendas and for undervaluing certain types of research, such as interdisciplinary or applied research. Concern has been expressed that the RAE can inhibit speculative projects, because of the risk to departments and individuals of perceived non-performance or non-achievement (see, for instance, Royal Society, 2003). This would be exacerbated by the proposed introduction of a "metrics" system of assessment (see, for instance, HEPI, 2006).

Senior managers and human resources professionals in United Kingdom institutions have been endeavouring to address these challenges and to develop coherent strategies, including revised criteria for promotion, more flexible short- and medium-term ways of agreeing the balance of duties and responsibilities, and relating these to broad re-articulations of career pathways.

Academic identities

Notwithstanding increasing pressures upon institutions, Henkel (2000) concluded that academic identities had largely remained intact, with her

interviewees adapting conceptions of their identity, rather than transforming them in response to various policy stimuli and other forces for change. Another important message from Henkel's (2002) research surrounds the centrality of identity to academics, and the ways in which they perceive and value work, and presumably, by inference, the work of the academic profession. However, Henkel did not investigate the nature of the identity of those engaged exclusively in research, teaching, student support or some other function. There is no reason to believe that such identities do not exist, or that they will not be equally significant to the life and value systems of the individuals concerned, although they represent subsets of the total "academic" population.

Henkel discusses the perceptions of self-identity of her respondents, and particularly how the roles of teaching and research impact upon and create that identity. Whilst identity is influenced by external factors and pressures, internal coherence and sense-making remain dominant. What is less easy to detect is how individuals respond to the perceptions of their peers and others who exert influence upon them, and the ways, often subtle and almost undetectable, in which such interpersonal influences impact upon or shape any shifts in identity. There is experiential and anecdotal evidence to suggest that individuals react strongly when their academic identity is challenged or threatened. That can include questions about their level of expertise, competence, or performance in particular duties or functions or, occasionally, their suitability for the role or specific aspects of it.

Positive outcomes can also present challenges to identity. For example, individuals promoted primarily on teaching or management criteria may struggle to accept that interpretation of their identity and strengths, and continue to believe that their real strength is in research, especially if that is the prized ability in their peer community. Thus, the complexities of academic identity present many challenges to senior managers and human resource professionals. Often, the associated tensions are relatively minor problems, but they can escalate into much more serious injuries or disputes, sometimes leading to protracted and acrimonious formal disputes.

Development and support activity

Dunkin (2005), outlined six core elements of a human resource strategy that enable institutions to address the challenges of competing for and retaining high quality, creative people in the increasingly dynamic environment in which knowledge workers function. The core elements are:

- determining how many people are needed, what they need to do, how they need to do it, and how to configure and manage them;
- analysing skills needed and addressing any shortfalls;
- attracting and retaining high quality staff;

- managing their performance;
- rewarding and acknowledging performance;
- developing staff.

There is a large literature on the development of academic staff (Kogan *et al.,* 1994; Webb, 1996; Ketteridge *et al.*, 2002; Blackwell and Blackmore, 2003; Eggins and Macdonald, 2003; Kahn and Baume, 2003; Adams, 2005). Several, sometimes conflicting, messages can be distilled from that output. Development provision is increasing and diversifying. Traditionally the focus was on the initial preparation of academics for the key functions of research and teaching. The former was seen as being addressed primarily through postgraduate training, and latter through short programmes designed for graduate teaching assistants or new entrants to the academy. There was, and continues to be, contestation over the definition of the professional expertise of academics, and how it is acquired and developed.

Effective development strategies have to reconcile individual and organisational needs and expectations. From the perspective of individual academics, prime concerns tend to be relevance, timeliness, format and contextualisation. That echoes the findings of research by Becher (1999) into attitudes to, and preferred approaches for, continuing professional development. Several trends complicate the scene. The range of academic roles has expanded, segmented and fractionalised. There has been significant growth in practice-oriented disciplines, which often need to recruit experienced, mid-career practitioners to enhance the credibility of academic programmes. Indeed, overall the entry profile into academia is becoming more diverse. This presents additional challenges for the provision of coherent and relevant development programmes and frameworks. Whilst not necessarily negating the broad utility of progressional models, that is those organised around conceptions of initial and continuing development, these trends mean that any model needs to be capable of flexible interpretation and tailored responses.

External factors exercise significant, if contested, influence. That contestation stems from objections to external intrusion into, and occasionally imposition upon, the autonomy and authority of the academy (Adams, 2005). In the United Kingdom, for example, institutions have had, increasingly, to provide formal training and development on topics and issues so as to satisfy legal requirements, directives or "guidance" from funding agencies and government. Those requirements can sit uncomfortably alongside provision which addresses self-identified individual development needs, that is, where an academic recognises that development or training will help them to handle a new or expanded role or task, to undertake the job more effectively, or to acquire or improve skills.

Typically, institutions in the United Kingdom now offer an initial programme in learning, teaching and assessment, accredited by the Higher Education Academy. Many expect new entrants to academia to complete the relevant programme. They also make provision for the induction of staff who are new to postgraduate supervision. Gradually, they are implementing ways of facilitating continuing professional development of academics through optional modular structures and other means. Other common strands in formal provision are leadership and management programmes, for both heads of department and more senior staff, and a widening array of specialised provision to support those undertaking particular roles and duties (for instance, enterprise, research management, student support or e-learning).

New entrants to academia, who have personal experience of the approaches to professional development in industry or the professions, increasingly expect similar support within higher education. Development is not, however, solely a matter of programmes or courses. A great deal is informal, and occurs within the individual's day-to-day work setting and peer community. Conference attendance and sabbaticals are properly part of the development support that institutions provide, and development strategies are extending to more formal usage of mentoring and coaching.

Professional staff

The term "professional staff" is used in this paper to refer to staff who are not employed on academic contracts, but who undertake professional roles, either in general management; in specialist areas such as finance or estates; in niche areas such as quality or widening participation; or in quasi-academic areas such as learning support. This distinguishes them from academic managers such as pro-vice-chancellors or deans, although as will be shown, boundaries are blurring. It is not, however, intended to imply that academic staff are not also professionals in their own right. Because contemporary institutions are obliged to operate simultaneously in both global and local settings, they have become complex organisations (see, for instance, Scott, 1998; Barnett, 2000; Bauman, 2000; Hassan, 2003; Urry, 2003). This means that they increasingly require people who are able to contextualise academic activity against fluctuations in the external environment, be it in relation to, for instance, schools outreach, regional business development or overseas campuses. Professional staff who have understanding of this broader terrain undertake interpretive roles at the boundaries between academic work, internal constituencies and external partners, forging links between them, and undertaking what might be described as quasi-academic work. This has led not only to greater diversity within the workforce, but also to a blurring of traditional divisions between academic and professional staff.

There has been, as a result, a coalescence of staff groupings whereby, for instance, academic and professional staff collaborate on specific projects in multi-functional teams, as well as an emergence of mixed roles that cross the boundaries of academic work and professional support. On a day-to-day basis, individuals may relate more to tasks and teams than to formal organisational structures and hierarchies. Thus, the separation between academic activity, and a distinctive infrastructure that supports it, has become less clear-cut, fostering "the replacement of 'bureaucratic' careers by flexible job portfolios" (Scott, 1997, p. 7). In addition to mainstream academic staff who undertake full programmes of teaching and research, the workforce also now includes, for instance:

- academic managers such as pro-vice-chancellors, deans and heads of departments, some of whom are appointed full time as professional managers on permanent contracts;
- teaching and learning professionals providing technical and pedagogic expertise in relation to academic programmes (Gornall, 1999, 2004);
- professional administrators and managers providing expertise in functional areas such as student affairs, finance and human resources;
- professional managers in "niche" areas specific to higher education, such as quality and widening participation;
- project managers, either of one-off projects such as the delivery of new facilities, or in relation to larger projects stretching across, for example, student services or enterprise activity (Whitchurch, 2006a);
- contract workers assisting with academic and other projects.

Significantly, a growing number of staff *not* having academic contracts have academic credentials paralleling those of their academic colleagues including, for instance, doctoral qualifications and experience of teaching and/or research at tertiary level. Such staff are moving into mixed roles, sometimes having academic titles, such as that of pro-vice-chancellor with responsibility for administration, quality or staffing. In this they might work alongside a mainstream academic manager such as a pro-vice-chancellor for academic affairs. Institutions, therefore, are dealing with a more mobile workforce, as well as a growing number of staff who do not fit into established employment categories (Whitchurch, 2006b).

This diversification of professional staff has changed the nature of the workforce map, in which relationships are increasingly lateral, as well as hierarchical, so that: "The professional … terrain of … universities is far more complex than our current categories allow for. Such terrain has direct implications for how we can better organize our work and collective efforts" (Rhoades, 1998, p. 143).

Managing this diversity in a positive and proactive way has become a critical business issue, and is seen by one commentator as a means of linking competitiveness with outcomes in a knowledge environment: "In relation to labor rates, and when combined with the 'war on talent', the only possible path is greater diversity in job roles with varying pay rates, and the time of those higher paid professionals focused on the 'value-added' iterations with students, those 'moments of truth' that will ultimately affect the effectiveness of students' learning and/or their satisfaction." (Dunkin, 2005, p. 13)

While considerable attention has been paid to the impact of globalisation and the communications revolution on academic staff (for instance, Henkel, 2000; Becher and Trowler, 2001), it is now also beginning to be recognised that professional staff are: "experiencing the same pressure and internal shift of orientation that academics are experiencing in terms of the commodification of research and education" (Slaughter and Rhoades, 2004, p. 295).

Thus, recent commentators such as Duke (2003), Rhoades (2005) and Sharrock (2005), increasingly see higher education as an integrated "project", in which the delivery of multiple agendas in a knowledge environment can only be achieved through a range of contributions from different groups of staff: "Breaking down disciplinary barriers, and also enhancing collaborative teamwork between classes of workers (administrative, professional, academic, technical) is … required by and grows with the external networking on which universities depend to play a useful and sustainable part in networked knowledge societies" (Duke, 2003, p. 54).

Co-ordinating strategy and operations in the management of human resources

In contemporary environments, particularly where institutions are the employer and accept full responsibility for human resources, it is a challenge for institutions to balance system-wide issues, such as a global market for staff, increased international mobility and skill shortages, with the needs and expectations of individual employees. There is a relationship to be managed between institutional policies relating to the workforce as a whole, such as contractual issues, and the translation of these into day-to-day operations by line managers. This requires a blending of "hard" and "soft" approaches: the former including, for instance, maintaining a competitive edge in terms of recruitment, retention and being an employer of choice (Fazackerley, 2006); and the latter including local management of employee motivation, work-life issues and career development. On the one hand, human resources departments have become more involved with institutional strategy than day-to-day line management issues (Archer, 2005). On the other, devolved organisational structures, involving distributed management and leadership,

have created increased demand, and provision, of formal management and leadership programmes for those having direct responsibility for staff.

Whilst "hard" responses to rapid environmental change are likely to involve the restructuring of teaching and research programmes, and the staff associated with them, evidence is emerging of "softer", more flexible approaches to enhancing staff and, therefore, institutional potentials. For instance, some institutions are seeking to distinguish themselves as the employer of choice for high quality staff, not only through extensive diversity programmes in relation to race, gender and disability (Merisotis, 2005; Paddock, 2005; Strebler, 2005), but also by establishing work-life offices and managers to develop family friendly policies and environments (Nolan, 2005). Thus, while each university represents a major resource of intellectual capital, talent and expertise, both in terms of academic and professional staff, individual institutions vary in their ability to build on this capacity. Whilst many institutions may consider that they operate under government constraints, which limit their freedom to pursue such strategies, they may still be capable of exercising influence over some aspects of the employment "package", especially the work environment.

Globalisation, combined with an increasingly mobile workforce, means that human resource management cannot rely solely on "one size fits all" solutions, whether at institutional or sub-institutional levels. Resolving "hard" issues, such as recruitment and retention, often requires the design of flexible and individual solutions in the field. For instance, it has been suggested that support for networking, an understanding of institutional cultures, and a linking of internal and external considerations "must be addressed by 'management' in a much wider sense than can be exercised by top leadership alone" (Duke, 2003, p. 54). While to some extent this has always been the case, mechanisms for facilitating this are now being recognised formally and brought into the public domain.

For instance, one institution in the United Kingdom has responded to revised pay and grading structures by introducing a career pathway scheme to replace traditional hierarchical academic and research ladders. A new scheme envisages career strands for those following a traditional balance (research and teaching); a teaching-oriented balance; a research-oriented balance; and an enterprise-focused profile; within a framework of three career tracks for Education, Research and Enterprise. Thus, on the teaching pathways, individuals might progress from teaching assistant to teaching fellow, senior fellow and director of education. The roles are differentiated by "competencies for role holders or standards of output" (Strike, 2005, p. 6). This more complex map of pathways provides transfer points, so that individuals can shift across strands and progress as their interests adjust over time and their careers develop. Other institutions are also considering broadly similar versions of this framework of multiple strands within the academic "family" of roles.

Challenges emerging from such arrangements are to define clear criteria for these strands, whilst enabling some crossover points, and also to achieve acceptance of these criteria by unions and, more generally, by the staff affected. Strike concludes:

> Europe can see England as an island where career adaptation is taking its own curious and perhaps temporary evolutionary path, or seek to more closely observe and evaluate the results. Like all evolutionary changes, not all of the resulting variations will survive and be successful and so reproduce elsewhere. The traditional academic ladder and titles may survive and resist novelty, especially if England is in a unique context with particular nationally specific stimuli. (Strike, 2005, p. 7)

However, the literature suggests that not all of the stimuli are specific to the United Kingdom, and that there are wider pressures for adjustment and accommodation. The loosening of employment categories in the context of the national re-design of pay and grading structures may, therefore, accelerate new forms of role, and contribute to emergent aspects of academic identity, whereby "the capacity to develop business/earn one's own salary/manage 'client' relationships, once missing from academics, is now part of the skills repertoire of our next generation of academics" (Dunkin, 2005, p. 8).

Conclusion

A picture emerges, therefore, of a diverse and mobile workforce, for whom the content of roles is changing, sometimes by default, and sometimes via policy interventions by governments or institutions, such as the modification of terms and conditions. At the same time, crossovers are occurring between academic and management fields of activity, creating mixed roles between the two, including professionals who assist in the contextualisation of institutional activity in complex knowledge environments. This is a situation that is beginning to be documented (see for instance, in relation to academic staff, Middlehurst, 2004; to teaching and learning professionals, Gornall, 1999, 2004; and to professional managers, Whitchurch, 2006a, 2006b). Nevertheless, the challenges created are demanding and there is, therefore, scope for further research, particularly in respect of the changing career paths of both academic and professional staff.

Rapid and ongoing developments in the workforce map are likely to demand greater flexibility than is offered by traditional organisational structures and processes. Examples of good practice in this environment include specific arrangements for new entrants to the profession, such as career booster schemes; mid-career fellowships and training in relation to both teaching and research; and more flexible approaches to career paths and work-life balance (see, for instance, *www.uhs.berkeley.edu/facstaff/care/eldercare*).

Furthermore, human resources and staff development professionals are also considering how they might interface most effectively with line managers, at all levels, in the field (Knight, 2005). In developing their human resource strategies, therefore, institutions may wish to take cognizance of examples of good practice that are beginning to emerge.

Notwithstanding differences in national systems that affect their autonomy, higher education institutions are facing similar challenges in terms of the global environments in which they work and the roles expected of them. To meet the demands of governments for mass higher education, a strengthening of the national research base, and institutional involvement in partnership and enterprise, an increasingly diversified workforce is required. This means, for instance, that career structures are no longer necessarily homogeneous or linear, and that boundaries are blurring between academic and professional roles. Individual institutions are, therefore, likely to become increasingly creative and innovative in their approach to human resource management, which has become critical in the building of institutional capacity for the future.

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