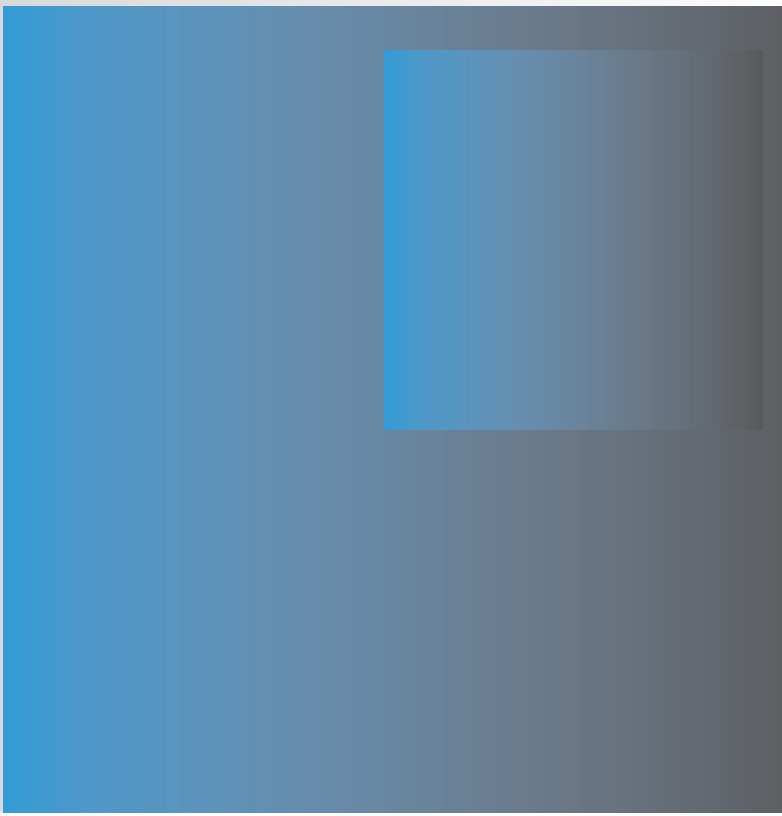
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Assessing the effects of four budget-balancing strategies in higher education

by
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This paper compares four short- and medium-term strategies available to public higher education to balance budgets in the face of major cutbacks in public funding. These strategies include: capping enrolments, changing the enrolment mix, raising prices and increasing enrolments without raising prices. The paper assesses the likely effects of these four strategies on the performance dimensions of participation, equity, productivity and quality. Some of the key political and economic considerations that do and should inform the decisions of institutional leaders are then considered. We conclude that there are fundamental inadequacies in our understanding of the possible impacts of changing enrolments on marginal costs. This means that higher education system and institutional leaders may not be fully and rationally exploring the range of options available to balance their budgets in the face of recession-driven cutbacks; in particular, they may not adequately consider the possibility of increasing enrolments without increasing fees.

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Évaluation de l'impact de quatre stratégies destinées à équilibrer le budget de l'enseignement supérieur

par
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Cet article établit une comparaison entre quatre stratégies à court et à moyen terme, proposées aux établissements publics d'enseignement supérieur, en vue d'équilibrer leurs budgets face aux réductions importantes des financements publics. Ces stratégies prévoient de limiter le nombre d'inscrits, de diversifier davantage les élèves, d'augmenter les frais d'inscription et d'accroître le nombre d'inscrits sans que cela ne soit plus coûteux pour le contribuable. Cet article évalue les incidences probables de ces quatre stratégies sur la performance des dimensions telles que la participation, l'équité, la qualité et la productivité. Certains des éléments politiques et économiques majeurs qui influencent et devraient influencer les décisions des dirigeants institutionnels sont désormais pris en compte. Nous en concluons qu'il existe des carences fondamentales dans notre compréhension des éventuels effets de l'évolution des inscriptions sur les coûts marginaux. Plus précisément, cela signifie qu'il se peut que les décideurs de l'enseignement supérieur et les dirigeants institutionnels n'explorent pas suffisamment en profondeur et de manière rationnelle les différentes options qui s'offrent à eux pour équilibrer leurs budgets face aux restrictions budgétaires nourries par la récession. Il se peut également qu'ils ne prennent pas suffisamment en compte la possibilité d'accroître le nombre d'inscrits sans augmenter les frais d'inscription.

Introduction

Around the world, those responsible for educational systems and institutions at all levels face serious challenges in responding to reductions in government funding brought about by the recent and ongoing global recession (Eggins and West, 2010; Keller, 2009; Middlehurst, 2010). This paper compares four strategies available to public higher education systems and institutions to balance budgets in the face of major cutbacks in public funding. The approach is theoretical rather than empirical, presenting a framework for analysis of the strategic choices available to higher education rather than examining the choices that are made in practice. The paper also confines itself to the options available to higher education systems and institutions when faced with short- and medium-term or cyclical recession-related reductions in public funding. It does not address long-term investment or disinvestment by governments.

In the paper, we argue that higher education has a wider range of strategies available to adapt to recession-based public funding constraints than the more limited options open to primary and secondary education. However, higher education's wider range of strategic options presents a fundamental challenge for public policy and institutional leaders. How can they best chart a strategic path that is optimised for individual institutions and the system as a whole, given the number of complex tradeoffs and the wide-ranging perspectives of different stakeholders? The likely effects of the budget-balancing strategies available to higher education on the key performance dimensions of participation, equity, productivity and quality are also assessed. The key political and economic considerations that should inform public policy and the decisions of institutional leaders are then considered. We conclude that fundamental inadequacies in our understanding of the economics of higher education, and in particular the impact of changing enrolments on marginal costs, means that higher education system and institutional leaders are not fully and rationally exploring the range of options available to balance their budgets in the face of recession.

Higher education's options compared to primary and secondary education

The recent global recession has led to significant reductions in tax revenues in most countries around the world. Although many of these countries have used counter-cyclical spending policies to offset the effects of

recession, most also have responded to this fiscal crunch by reducing public spending in a number of areas, often including education (Middlehurst, 2010).

Those responsible for primary and secondary education are limited in the range of options available to respond to reductions in public funding. For school systems, government is typically the principal source of revenues and accounts for almost all of their income. Moreover, new students are often seen as a drain on resources as typically any growth in enrolments is not matched by more public funds, particularly in periods of recession. This explains why public school systems frequently increase class sizes, cut programmes and reduce staffing in response to government cutbacks in funding.

Public higher education systems and institutions do share one key characteristic with primary and secondary education: they are exposed to limitations or reductions in government funding during recessions when government expenditure becomes strained due to the loss of tax revenues. But in two other critical respects, the financing of public higher education is strikingly different from the pressures that engulf public school systems. First, public higher education has a major revenue source that public school systems do not: private contributions by students in the form of tuition fees. This means that public higher education institutions have the option to increase tuition revenues either by increasing enrolments or fees or both, which may – or may not – offset the reductions in government funding.

A second and related difference is the variability of patterns of enrolment in higher education. Higher education is not compulsory nor is enrolment confined to a narrow age cohort or specific geographic catchment area. On the contrary, higher education institutions typically enrol a variable proportion of the regional or national population, may enrol students across the entire adult life course, and have the option to recruit students worldwide. This means that participation and enrolment trends are far more variable than for public primary and secondary school systems where, at least in the short term, the number of students is relatively constant. Furthermore, higher education enrolments tend to swell during recessions as job prospects decline and more individuals decide to continue their studies or return to higher education instead of continuing their job search. The question and the challenge for public higher education is whether this recession-fed increase in demand and associated potential for enrolment growth is an opportunity or a burden.

Four basic budget-balancing strategies for public higher education

While the specifics vary from country to country and from institution to institution, four fundamental strategies are effectively available to public higher education in responding to global recession and cutbacks in government support for higher education. These four strategies are not

mutually exclusive, and can be applied in different combinations, or different strategies can be applied in different segments of a higher education system. The four fundamental strategies are:

Capping enrolments and cutting costs is a strategy similar to that which primary and secondary education is constrained to pursue, but has also been adopted by many public higher education systems around the world in response to the current recession (Keller, 2009; Middlehurst, 2010).

Changing the mix of enrolments typically entails institutions or systems increasing the percentage of their students who pay higher fees, usually international or out-of-state students.

Increasing tuition fees for existing students is a tried and trusted response when institutions respond to government cutbacks by increasing their cost recovery rates.

Increasing enrolments while maintaining current tuition fee levels is another way for countries to raise their cost recovery rates by increasing enrolments rather than prices.

A primary objective of this paper is to examine under what conditions each of these four strategies makes the most sense. Institutional leaders need to decide which of these strategies, singly or in combination, is best for their institution in responding to diminished government support for higher education. Obviously many factors come into play, but in the end we argue that a comparison of institutional capacity utilisation, marginal costs and the additional revenues generated by more students paying current tuition fee levels could be the answer.

The likely effects on participation, equity, productivity and quality

The availability of tuition fees to help pay for higher education and the much greater variability in the number of students who enrol over the course of the economic cycle help to define four budget-balancing strategies that are available to higher education to deal with recession-related cutbacks in government funding. These strategies typically are not viable for primary and secondary education in most countries. This section addresses the likely effects of the four strategies on key performance variables of participation, equity, productivity and quality. A summary of our assessment of the short-term effects is shown in Table 1.

Participation is defined as the proportion of the national or state population enrolled in higher education. Equity is defined as the difference in participation and attainment for students from different economic circumstances. Productivity is defined in strict economic terms as expenditure per graduate although expenditure per student enrolled could also be used. Quality is the hardest of these to define and to measure: it is normally defined in terms of the knowledge,

Table 1. **A comparison of the short-term effects of four budget-balancing strategies**

	Participation	Equity	Productivity	Quality
Cap enrolment	Negative	Probably negative	Neutral or negative	Presumed positive
Change enrolment mix	Negative	Probably negative	Neutral or negative	Neutral or negative
Increase tuition	Neutral or negative	Probably negative	Neutral or negative	Presumed positive
Increase enrolment at current fee	Positive	Possibly positive	Positive	Presumed negative

skills, competencies and capacities of students at graduation compared with entry, yet it is rare to find the quality of education and the student experience measured in this way. We more often rely on proxies for quality such as student-faculty ratios and other indicators, many of which relate more to resources available per student. The use of indicators such as student-faculty ratios as proxies for quality persists even though the relationship between class size and outcomes in higher education is unclear (Bandiera *et al*., 2010; Kennedy and Siegfried, 1997; Kokkelenberg *et al*., 2008). This creates an inevitable circularity in any discussion of enrolment strategies when resources are constrained: any increase in enrolment will worsen such proxy measures and lead us to quickly **presume** that quality will decline as enrolments increase. Under this construct, quality (or, strictly speaking, financial proxies for quality) and productivity are inversely related and by extension can be seen as directly competing priorities and goals. This paper challenges this assumption and suggests that a more careful analysis is required of the likely impact of the four budget-balancing strategies on the quality of teaching and learning.

Capping enrolments and cutting costs has the attractive advantage of being responsible from a budgetary point of view: it helps ensure that public institutions have enough money to pay their bills. Of the four strategies, it also may have the best prospect of maintaining quality in the face of funding cutbacks. This is because it can maintain (or even increase) resources per student if the cap on enrolments reduces the numbers of students to the same (or a greater) extent as the decrease in resources. However, this is achieved at the expense of participation, which is at best maintained and probably decreased. It also seems inevitable that this strategy will adversely affect equity of access, if we assume that competition for places will increase and that this will preferentially exclude disadvantaged students. And to the extent that productivity is defined in terms of spending per graduate, capping enrolments is likely to reduce productivity unless the spending cuts are larger in scale than the reductions in enrolment and graduation rates.

Changing the mix of enrolments typically entails scaling up the share of non-resident (international or out-of-state) students who pay much higher fees than resident students. This strategy will only compensate for reductions

in government funding if the associated increase in revenues is greater than the additional costs of providing the education to these students. This strategy, whether it is publicly acknowledged or not, seeks to subsidise the education of local or domestic students from surpluses generated from the higher fees paid by international or out-of-state students.

This approach has the potential to increase the quality of the student body and the student experience to the extent that the non-resident students are as good as, or better than, the resident students who otherwise would have been admitted, and to the extent that the associated diversity of the student body enhances the learning experience. The impact of this strategy on participation is negative when local or domestic students are excluded as the mix of enrolments changes. Again, it is likely that such exclusion will differentially impact the vulnerable, with damaging effects on equity (although institutions may attempt to ameliorate this effect by directing additional income to the support of vulnerable students). Finally, changing the mix of enrolments does little to improve productivity and may well decrease it, if it results in higher spending per student.

Increasing tuition fees for existing students, as most studies and media reports show, is the strategy most public institutions and systems adopt when government funding for higher education is reduced. Indeed, the most direct way for institutions to balance their budgets is to increase their cost recovery rates. This has the further benefit of enabling public institutions to maintain quality at current levels of public funding or even improve it. However, it tends to reduce access for students who cannot afford the higher prices, especially if not enough financial aid is provided to offset the tuition fee increases, although the role of credit constraint in determining participation patterns in higher education is not clear (Deming and Dynarski, 2009; Heckman and Carneiro, 2002; Levin, 1990; Neill, 2009). This strategy is likely to do little if anything to reduce costs per student or to increase productivity.

Increasing enrolments while maintaining current tuition fee levels seems to be the least discussed of these four strategies although data on enrolment trends over time confirm that enrolments tend to rise more rapidly during recessions. These increases in enrolments stem both from the institutional need for increased fee revenues during recessions as government funding declines and from the increased demand for places from individuals who respond to recession by remaining in, or returning to, education. Relative to the other three strategies discussed above, this strategy has the advantage both of increasing participation and access by increasing enrolments and possibly improving productivity by reducing expenditure per graduate. Its great disadvantage is that it is generally assumed that this will lead to a reduction in the quality of teaching and student learning. While we accept that this could well be the case if it is simply accomplished by adding to class

size and increasing student-faculty ratios beyond tolerable limits, the evidence available does not straightforwardly support this conclusion (Bandiera *et al*., 2010; Kennedy and Siegfried, 1997; Kokkelenberg *et al*., 2008).

The key question with regard to this strategy is how the marginal costs associated with adopting it relate to the additional revenues generated by more students enrolling at existing tuition fee levels (Bottomley and Dunworth, 1974). Simply put, if current tuition fee levels equal or exceed the marginal costs, then increasing enrolments is an attractive strategy from both an institutional and a public policy perspective. But this apparently simple question has proved very difficult to answer, first because there is very limited data and a very poor understanding of marginal costs in higher education (Ahumada, 1992; Bottomley and Dunworth, 1974; Brinkman, 1981). Second, in the absence of sound economic models, political considerations tend to dominate the debate regarding the best strategy for institutions or systems to adopt when balancing budgets in a recession.

Political and economic considerations

Public higher education institutions must decide on the appropriate strategy for dealing with government cutbacks in funding based on a diverse set of factors. But certainly two of the more prominent factors for them to base their decisions on would be the political and economic considerations that are discussed in turn below.

Political considerations

Higher education institutions operate within a complex stakeholder network (Watson, 2009), and budget processes are undoubtedly political as well as technical (Pfeffer and Salancik, 1974). The political considerations faced by public higher education leaders are twofold. First, there is the relationship with the national or state political system, and its associated public policy framework. Governments and taxpayers by definition typically are the primary source of funds for public higher education institutions. Therefore, it is inevitable that politics will play a large role in the decision-making calculus of leaders of those institutions, much more so than for leaders of private institutions which do not rely as much – or at all – on taxpayer support for their existence. Second, internal institutional politics, specifically the views of faculty expressed through institutional governance structures and organisational behaviour, acutely influence the actions of institutional leaders. Thus, close attention should be paid to the political considerations that affect the adoption of any of these four budget-balancing strategies.

The national or state politics of these four strategies are radically different. The first three strategies tend to be much more politically controversial than the fourth. Increasing tuition fees is perhaps the most politically problematic

strategy, provoking immediate and strong reactions from voters and politicians. While capping enrolments and cutting services will not be popular among most external stakeholder groups, it is usually less controversial, as the majority continues to gain access to higher education of at least acceptable quality at no extra cost to the individual. Changing the mix of enrolments to favour non-resident students is politically complex: it will exclude students from families who vote and who pay the taxes that allow public institutions to exist and grow, and may also raise questions in relation to the ethics of education as a public or private good. By contrast, expanding enrolments without increasing fees as another means for increasing cost recovery is likely to be much more acceptable to politicians and voters. This raises the question why so many institutional leaders around the world seem to be choosing the three more politically difficult options to deal with cutbacks in government funds.

Four possible explanations stand out most clearly in this regard. One is that institutional leaders may rule out the option of increasing enrolments at current tuition fee levels because they believe or assume that it will reduce quality or it is simply not economically viable to compensate for reduced government funding. The second possibility is that institutional leaders may not want legislators and other public officials to know that they could deal with government funding cutbacks by better managing institutional capacities, increasing faculty teaching loads, adopting more efficient approaches to teaching and learning, or by restructuring the relationship between teaching and research. The third possibility is that it may well be that the internal pressures from faculty to resist far-reaching changes such as increasing teaching loads or student-faculty ratios is greater than the pressures from students and other stakeholders to increase enrolments or control tuition costs. Put another way, faculty may tend to prefer enrolment caps and higher tuition fees to being forced to teach more courses and more students at current prices.

The fourth possibility is that in a number of jurisdictions, institutions are subject to enrolment limitations or simply not permitted autonomously to increase the number of students enrolled above the enrolment targets used by funding bodies to determine institutional allocations. This is sometimes described as the “unfunded student” issue – whether institutions can enrol more students than targeted for funding even though no additional government instructional funds will be allocated to support these students. A further complication here is that more government funding may be needed when enrolling these students in the form of loan subsidies and grants that these students may receive, an issue which increases proportionately to the amount of student support policies.

Economic considerations

Economic calculations and consequences should be another key factor in how public higher education officials react to government cutbacks in funding, involving a consideration of both costs and revenues. For revenues, it is worth noting that only one of the four strategies – capping enrolments – is revenue neutral or negative. The other three are likely to increase revenues. However, the consequences of adopting these strategies in terms of total spending and spending per student are much more complicated to predict. So we are left with the question: What economic criteria might, then, be used to determine the most appropriate budget balancing strategy?

This question highlights one of the central challenges of higher education leadership and planning. Faculty and institutional leaders commonly behave as if the cost of education per student is fixed and independent of the numbers of students enrolled. They also often act as though the marginal cost of enrolling additional students is the same as the average cost of educating existing students. This behaviour does not make economic sense and is counter-intuitive. It is a matter of basic economics that the marginal costs of increasing output, and the average costs of any activity, vary with volume. Furthermore, any faculty member teaching a class of 30 students will be aware that the cost of adding an additional 6 students to that class (a 20% increase in enrolment) may be small or even negligible.

The fundamental problem, however, is that we lack detailed data or sound models on the microeconomics of higher education institutions. While the principle that marginal cost may be less than average cost is accepted (Brinkman, 1981; Brovender, 1974; Tierney, 1980; Tsang, 1988) and in some cases clearly demonstrated from institutional data (Ahumada, 1992; Bottomley and Dunworth, 1974) few estimates of the marginal cost of instruction are available (Brinkman, 1981). In the absence of robust economic data and models, strategies are adopted on the basis of judgment, opinion and political considerations. It is not surprising that, in this context, the idea of increasing enrolment at current tuition fee rates is rarely comprehensively discussed, even though it could lead to increased overall tuition fee revenue. It could also increase revenues by more than the associated marginal costs, thus improving the overall financial position of the institution. But where it is done, it is normally assumed that only trivial increases in enrolments and revenues could be achieved without diminishing the quality of education.

The preceding discussion leads to the notion that comparing marginal costs to current fee levels can be a key means for helping public higher education officials decide how to react to government cutbacks in funding. In cases where the marginal costs associated with enrolling additional students are greater than current fees, it would make sense to cap enrolments or

increase fee levels to balance budgets. But when marginal costs are lower than current fees, the theory would hold that institutions should increase their enrolments to improve their financial condition. The notion of "unfunded" students further confuses the issue since these additional students do carry funding in the form of the tuition fees they pay. Furthermore, how public and private contributions are allocated within the institution is largely irrelevant to whether enrolments should be increased, decreased or kept constant.

What should matter is the basic economic theory that organisations should expand as long as the additional revenues generated by expansion exceed the marginal costs associated with that expansion. For higher education operating in an environment where government funding has been fixed or reduced, this translates into whether additional tuition fees collected from new students exceed the marginal costs of educating this cohort of students.

The process of deciding how to proceed, however, is greatly complicated by the fact that marginal costs tend to be more difficult to measure than average costs. Marginal costs vary by subject matter, the level and nature of a programme, how it is delivered, the capacity of the institution and how well resources are deployed or utilised (Ahumada, 1992; Bottomley and Dunworth, 1974; Brinkman, 1981). Capacity utilisation is a critical issue: when capacity in terms of human resources or facilities is highly utilised (*i.e.* classrooms are crowded, teaching loads and student-faculty ratios are high), marginal costs tend to be higher. Similarly, when teaching loads and/or student-faculty ratios are low relative to reasonable benchmarks, marginal costs are also likely to be relatively low. Effective institutional or system management requires that adjusting these measures of utilisation be part of the decision-making process.

We must acknowledge that three important economic considerations are not included in our analysis. The first is the extent to which there is a net transfer of resources between teaching and research. The second is the extent to which any change in enrolment patterns changes the costs of publicly-funded student aid. The third is that significant increases in enrolment are likely to require capital expenditure on buildings and equipment, which increases costs and complicates the development of effective costing models; this is unlikely to be an issue where expansion is modest or short term.

While improving our understanding of marginal costs is essential to choosing a strategy to respond to recession, it is worth pointing out that perhaps the greatest determinant of costs in higher education are our assumptions about how higher education institutions should be structured, how they should operate, and how they can best support student learning. Many of these assumptions derive from an era before mass higher education existed in many countries but are fundamental to the cost structure of higher education institutions and systems at the present time.

Conclusion

We conclude that a better understanding of marginal costs is essential to adopting an optimum strategy to deal with short- to medium-term and cyclical reductions in government funding such as those associated with periods of recession. We acknowledge that different strategies may be appropriate for different segments of higher education (different levels, different disciplines and different institutions). Clear economic criteria and sound models to guide institutional decisions are necessary to act as an appropriate counter-weight to political expediency and to ensure that the strategies adopted to balance budgets also support the objectives of improving participation, equity, productivity and quality. The economic analysis will be complex, but we would argue that microeconomic models based on time-driven activity-based costing is potentially a very useful strategic tool. It may also be helpful to develop proxies from more readily available data, such as teaching loads and student-faculty ratios, and to identify areas where marginal costs and/or capacity utilisation may be lower or higher than average.

We further believe that economic analysis of the option of increasing enrolments at existing tuition fee levels will, under certain circumstances, offer a viable response to reduced government funding with positive effects on participation, equity and productivity. The critical questions that must be addressed then in considering whether to utilise this strategy are: Will enrolling more students lead to lower quality and are these quality tradeoffs worth it in terms of other goals? Do current fee levels cover the marginal cost of enrolling more students? And do institutions have the capacity to accommodate additional students?

The answer to these three key questions will differ in the short term (relying on existing facilities and staff) and the longer term (recognising the potential for expanding physical and human capacity). However, if current tuition fee levels are greater than the marginal costs associated with enrolling more students such as hiring more faculty or leasing additional space, this strategy makes a great deal of economic sense.

Institutional or system officials obviously must decide how to respond to government cutbacks in funds based on an assessment of their own particular set of conditions. But the potential benefits of increasing cost recovery rates by adding numbers of students rather than, or in addition to, raising tuition fees should be an important consideration in their decision and not be left off the table entirely.

The fact that so few systems around the world choose to declare that this is their strategy in the face of much more painful choices may mean that officials have determined that quality would be compromised and/or marginal

costs are higher than current fees. Or it may be that institutional rigidities, the lack of a fundamental understanding of marginal costs or political considerations have led to decisions that are unjustifiable on the basis of the economics.

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The democratisation of access and success in higher education: the case of Portugal and Brazil

by

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Given that higher education systems everywhere have opened to the masses, this paper analyses to what extent this phenomenon has really been accompanied by an effective democratisation of access and success in Portugal and Brazil. It looks at the expansion of higher education and discusses how the political system and higher education institutions have responded to the need for better educated populations and increased demand for tertiary education. Equity of access is analysed by comparing the ratio of candidates from different socio-economic backgrounds to overall capacity. This indicates that the apparent democratisation of academic access is in fact only relative; on this basis, there are grounds for concern as disadvantaged social backgrounds seem to generate high rates of academic failure and dropout.

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La démocratisation de l'accès et du succès de l'enseignement supérieur : les cas du Portugal et du Brésil

par

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Étant donné que les systèmes d'enseignement supérieur se sont partout développés en masse, cet article analyse à quel point cette expansion s'est réellement accompagnée d'une démocratisation de l'accès et du succès au Portugal et au Brésil. Concernant l'accès, cet article étudie le développement de l'enseignement supérieur et explique comment le système politique et les institutions d'enseignement supérieur ont répondu aux besoins d'une meilleure éducation des populations et à l'augmentation de la demande d'un enseignement supérieur. L'égalité d'accès est analysée en comparant le rapport entre les candidats de divers milieux socio-économiques et les capacités générales. Ce rapport indique que la démocratisation apparente n'est en fait que relative. Sur cette base, il existe des raisons de s'inquiéter de la réalité de la démocratisation du succès universitaire, car les milieux sociaux défavorisés semblent générer des taux élevés d'échec et d'abandon.

Introduction

Given that higher education systems everywhere have opened to the masses, has this phenomenon really been accompanied by a process of effective democratisation? This paper takes a close look at the situation in Portugal and Brazil and explores to what extent the increase in the number of enrolments in HE actually corresponds to greater equity in access and success and fosters the participation of disadvantaged socio-cultural groups.

The paper starts by looking at expansion and equity issues in Portugal. It explores the recent evolution in the number of graduates and then looks at students' social backgrounds, their funding sources and graduation rates. It then turns to Brazil and discusses the expansion of its HE sector. As for Portugal, it examines the evolution in the number of graduates, expenditure on education in relation to household income and graduation rates. This discussion is followed by an appraisal of the extent to which the political system and higher education institutions (HEIs) in both countries have responded to the needs of the labour market for more graduates with tertiary education qualifications, as well as greater popular demand for access to higher education (HE).

In order to ensure social and academic relevance, the paper analyses ease of access to HE in both Portugal and Brazil on the basis of the ratio of candidates *vs.* the number of places available. This suggests that the so-called democratisation of academic access has only been partially achieved. Indeed, only a small percentage of applicants from modest social backgrounds have access to institutions and degrees with high social prestige. This trend may be due in part to their vocational and career projects, but it is also due to their academic choices in secondary education. These have an impact on students' grades and ultimately affect outcomes when they apply to HEIs. Since the democratisation of access is in question, it is not surprising that there are grounds for concern when academic success and graduation rates are analysed. Indeed, several studies corroborate that academic failure and dropout rates are clearly linked to students' social backgrounds.

Defining equity…

A recent review of equity in education (OECD, 2007a) gives a definition of equity that we endorse:

> Equity in education has two dimensions. The first is *fairness*, which implies ensuring that personal and social circumstances … should not be an obstacle to achieving educational potential. The second is *inclusion*, which implies ensuring a basic minimum standard of education for all.

In addition, Santiago (2008) has distinguished two equity concepts:

> … *i) equity of access* which relates to equality of opportunities to enter tertiary education and to access programmes at different levels and with distinct qualities; and *ii) equity of outcomes* which relates to opportunities to progress and complete HE studies and also to achieve particular returns to tertiary education.

A number of personal and social circumstances are at the root of inequalities, but here our concerns focus on students' socio-economic backgrounds (*e.g.* parents' educational attainment and income).

… and access

In both countries, policies governing access have been designed mainly around the "equity argument" (Parry, 1989). Ever since the 1990s the expansion of higher education has been seen as a way to extend educational and social opportunities. This argument is based on two key perspectives: the first is socio-political and the second is socio-cultural. The first perspective considers that education contributes to social inclusion and better lives, and therefore all citizens should have equal opportunities in relation to HE. The second perspective maintains that HE plays an important role in the preservation and dissemination of society's cultural heritage: the discovery of new knowledge and talents, the advancement of social welfare, democracy, etc. Traditionally, both perspectives have been uppermost in the higher education policy arena.

The literature suggests that, initially, social arguments led to policies aimed at stimulating an overall, homogeneous increase in higher education enrolments. This period can be characterised as being driven by a "more is better" approach to accessing HE. Having more students in HE would "automatically" lead to more equality of opportunity, as well as more economic and social benefits, in the sense of high overall returns for society as a whole (Maassen *et al*., forthcoming). However, over the last two decades economic arguments (such as higher education provides positive external effects that are important to the economic well-being of a country) have become even more central in HE policy processes (Gornitzka and Maassen, 2003).

The expansion of higher education and equity in Portugal

Despite numerous efforts made since the democratic revolution in April 1974, Portugal still has poor educational indicators, particularly when compared with other European countries. In the early 1970s the Portuguese HE sector was markedly elitist and had a very low overall participation rate (around 7%). The majority of students were from families with above-average resources. Subsequent to the revolution, in order to give access to the masses and thereby promote social and economic progress, Portugal redesigned its HE system and tried to eliminate its elitist and selective features. This led to a sudden increase in demand for HE; the government reacted initially by creating a comprehensive system of *numerus clausus* so as to limit demand on public HEIs as they could not absorb this increased demand without compromising quality. *The numerus clausus* policy led to growing social pressures, not only from students who were unable to obtain a place at a HEI but also from their families. These pressures, combined with the recognition that Portugal had to align itself with common practice in Europe, forced the system to expand in essentially two ways. First, HE was opened up to private initiatives. Second, following recommendations by the World Bank, a public polytechnic sector was created, offering shorter, as well as more vocational, programmes. This effort resulted in an annual growth rate of enrolments which was unparalleled in other European countries: around 6% in Portugal compared to some 3% for the then EU15 (Eurydice, 2005).

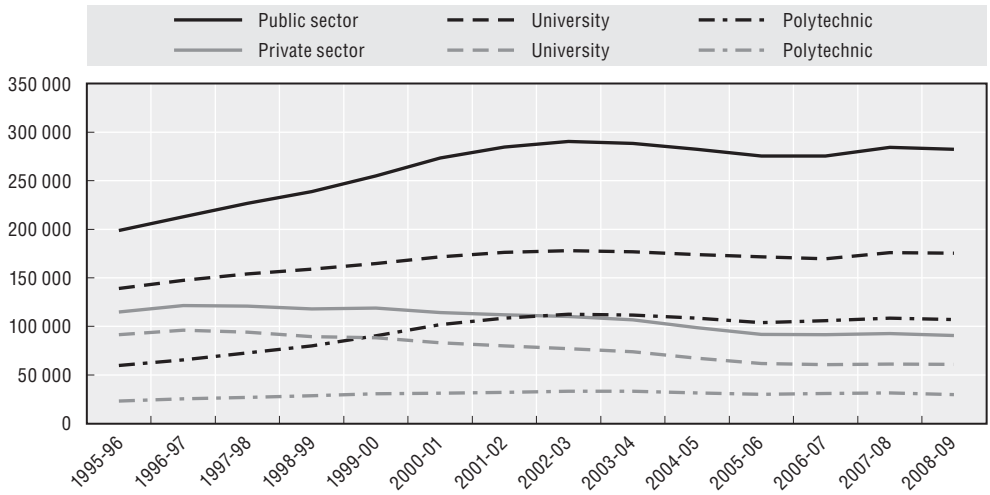
The evolution of enrolments

In the early 1990s, enrolments increased by 105.8% overall, but this growth was not evenly distributed throughout the system. Initially, the increase was mainly due to the private sector, which grew by 121.7%. Enrolments in public universities increased by 62%, while the number of students in public polytechnics increased by a spectacular 224.7%. In terms of gross participation rates in HE (20/24-year-olds), this exceeded 50% in 2001 and represented an extremely rapid increase, which again was unparalleled in any other European country.

Following this rapid expansion, enrolments began to slow down in the mid-1990s and even became negative in 2006/07, but resumed modestly in recent years. The reverse trend that took place over the last decade was due to two factors. First, legislation promoting access for students over 23 years old to higher education had an impact on enrolments (in 2007/08, about 14% of students enrolled in HE benefitted from it). Second, there was a reduction in failure and dropout rates in secondary education (from 2000 to 2007 the failure and dropout rates in secondary education almost halved, decreasing from 40% to 22%). Enrolment in public polytechnics grew significantly, and as of 2001

this sector grew faster than the private sector, a trend that continues today. Public universities have also experienced a slowdown in growth: this sector had, for the first time, a negative value in 2003 (Figure 1), although enrolments have been fairly stable over the rest of the decade.

Figure 1. **The evolution of the number of students enrolled in Portuguese higher education, 1995/96 to 2008/09**



Source: GPEARI, MCTES (2010).

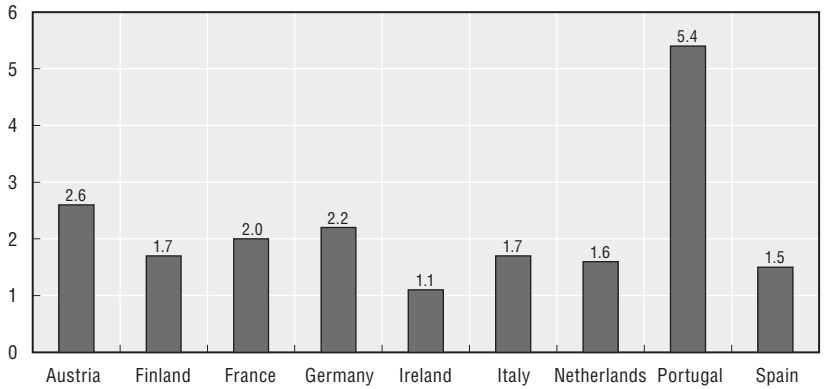
The slowdown in university growth can be attributed to a progressive decline in birth rates over recent decades. So much so that HEIs now have surplus capacity and this will oblige the sector, in the short or medium term, to rationalise its capacity. Moreover, during the next few years, it is not expected that there will be any increase in the number of potential candidates among "traditional students". Thus, the only way to increase student enrolment in HE is to significantly increase efficiency, not only in HE, but also in secondary education. This would mitigate the extremely high rate of early school leavers (essentially at the end of basic education and/or during secondary school) and at the same time increase success rates among HE students.

The impact of parents' educational attainment levels

However, the question remains: did the expansion of HE in Portugal take place hand-in-hand with a move towards effective social equity and democratisation? This is far from sure. An analysis of socio-economic indicators shows that a student's family background has a strong influence on access to HE; equal access is therefore still something of a myth. A student from a family with a high socio-cultural capital has about ten times more

chances of accessing HE than a student from a family with modest resources (Amado-Tavares *et al.*, 2008). Figure 2 shows that among nine European countries, Portugal has the highest incidence of students whose fathers hold a HE degree (HIS, 2005).

Figure 2. **Educational attainment of students' fathers, 2004**
Ratio of students' fathers who have a higher education qualification to all males in corresponding age groups[1]



1. Males in Austria, Finland, France, Germany, Ireland, the Netherlands and Spain aged 40-60; males in Italy aged 40-64.

Source: HIS (2005), National Profiles.

The impact of socio-cultural capital

The influence of families' socio-cultural capital does not only affect young people's tendency to opt for higher education. According to several national studies, it also affects the type of institution and study programme they choose (Balsa *et al.*, 2001; Braga da Cruz *et al.*, 1995; Cabrito, 2001; Gago *et al.*, 1994; Amado-Tavares, 2008). The higher a family's cultural capital, the higher the tendency will be for a student to opt for a university. Conversely, students from families with a modest cultural capital tend to apply to polytechnics.

The family cultural capital also affects students' choice of study programme: students from a home with a high cultural capital have a distinct preference for more prestigious programmes. In the case of parents who have only completed the first cycle of basic education, their children have greater preference for teacher training (39%) and management programmes (20%). However, students from families with a high cultural capital have a clear preference for law, fine arts and sciences. This is evident in the health sector, as 73.2% of students in medicine (taught at universities) have a parent holding a HE degree, while 73.0% of students enrolled in health-care professions at polytechnic institutes (nursing and health technology) are from families without a HE degree.

The impact of family income

A similar effect can be observed in relation to family income. Polytechnics enrol a higher percentage of students from families with modest resources: 20.1% of their students are from families with a monthly income lower than EUR 720 (*vs.* 13.6% in the public university sector), and only 8% come from families with an income higher than EUR 2 880 (*vs.* 21.1% in the public university sector). Law, medicine and the sciences are consistently preferred by students from families with higher revenues, while students from families in the low income bracket prefer educational sciences, humanities and management. The government is attempting to address this equity problem by increasing the number of grants available to low-income students and by introducing an income contingent loan scheme.

Whatever the core reasons underlying a particular choice of institution or study programme, the educational level and economic resources of a student's family are two of the main factors that apparently determine the type of studies undertaken at HE level. In fact, the findings of international studies (HIS, 2005) suggest that Portugal has the highest incidence of students making choices (whether they attend a HEI or otherwise, their preferred type of institution and study programme) which are influenced by their parents' level of educational attainment.

According to Bourdieu (1989), although students are free to choose any course or institution, their choices are made in function of criteria assimilated within their social group. Students' choices are governed by how accessible they perceive a specific profession to be, *i.e.* the obstacles and opportunities inherent in their social and cultural context (Gottfredson, 1981). Available data suggest, therefore, that the opening up of Portuguese HE to a wide public was not proportionately accompanied by a move towards democratisation. The expansion was due to the feminisation of HE and the inflow of female students from middle and upper class families, rather than to greater access for students from disadvantaged families.

On average, the major source of funding for HE students is the family unit (Table 1). Overall, its relative importance is three times greater than any other single source. Most students not only continue to live with their parents, but are also largely financially dependent on them. Thus, the overwhelming majority of HE students (85%) are, in some way, supported by their families. When a student has a work-related income, this source becomes even more significant as it generally exceeds the average amount provided by the family. However, only about one-fifth of students have income of this type. In comparison, the state makes the smallest contribution in terms of grants awarded, since only 25% of students receive state aid.

Table 1. **Students' average monthly income and their source of funding (average per month)**

Funding sources	EUR	%
Family (cash and intangibles)	452	72.1
Family/partner (cash)	294	46.9
Government	48	7.7
Part-time work	116	18.5
Other	11	17

Source: DGES/CIES (2005).

However, between 2000 and 2005, data show (OECD, 2008) that Portugal has invested heavily in government support for HE students; its investment levels are close to those of Spain and Italy and very close to averages in other European countries such as France, Finland and the United Kingdom. This suggests that the level of state spending in higher education is not the problem, but rather how that funding is divided up and allocated, given that social support mechanisms function on a universal basis as opposed to directly supporting students from low income families.

The ratio of graduates to first-year students

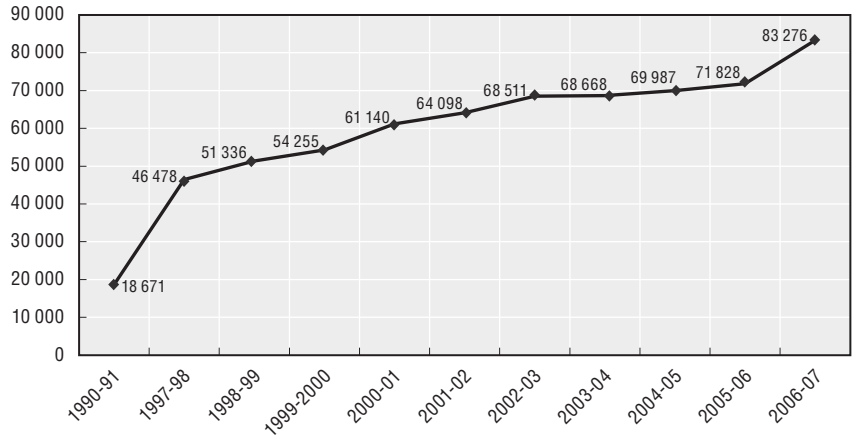
An evaluation of the social equity of HE cannot be confined to access, as student failure and dropout also need to be taken into consideration. Data for the school year 2003/04 (OECD, 2007b) show a success rate of 66% for students in Portuguese HE, slightly below the OECD average of 70%. These figures are corroborated by official government data, which report higher rates of education attainment in areas like health and social services, both in the public and private sectors, and in teacher education, mainly in the private sector. Conversely, lower levels of educational attainment were identified in the areas of computing, engineering and sciences. Also, the Portuguese graduation rate (in relation to full-time students) is in a comfortable position in comparison to other OECD members, with above-average scores. Portugal has seen a very positive evolution in the number of HE graduates: over the last 15 years or so this has more than quadrupled (Figure 3).

Overall, therefore, academic efficiency has been increased and over one decade we have seen a higher ratio of graduates to first-year students. In 1996, for each graduate, there were approximately two students entering HEIs for the first time, a ratio that peaked at 0.87 in 2006 and 2007 (Table 2).

The case of Portugal: concluding remarks

Despite the large-scale expansion of the HE system, an analysis of the rates of return of HE degrees in Portugal indicates that they have not only remained persistently high but they are also the highest among the former

Figure 3. **The evolution of the number of HE graduates, 1990-2007**



Source: GPEARI/MCTES.

Table 2. **Graduation rates for first-year students**

	Ratio
1996	0.48
1997	0.52
1998	0.57
1999	0.65
2000	0.64
2001	0.66
2002	0.69
2003	0.73
2004	0.77
2005	0.83
2006	0.87
2007	0.87
2008	0.74

Source: MCTES and PORDATA (2010).

15 EU countries (Pereira and Martins, 2000). The average rate of return for education has increased, especially since the mid-1980s, which corresponds exactly to the period when the system expanded substantially. This pattern of high rates of return is valid for both genders and all educational groups.

However, Portuguese data also indicate that economic returns on educational investment seem to vary significantly. The above-mentioned study analysed economic returns for individuals with the same level of education within the top and bottom income brackets. According to the data, economic returns for a given educational qualification are not only strikingly

heterogeneous, but also seem to have increased during the sector's expansion. This means that the wage benefits from educational qualifications have decreased for those receiving lower wages and increased for those receiving higher ones. Apparently, therefore, the economic benefits of education have declined during the last two decades for those situated at the lower end of the pay scale.

Higher education expansion and equity in Brazil

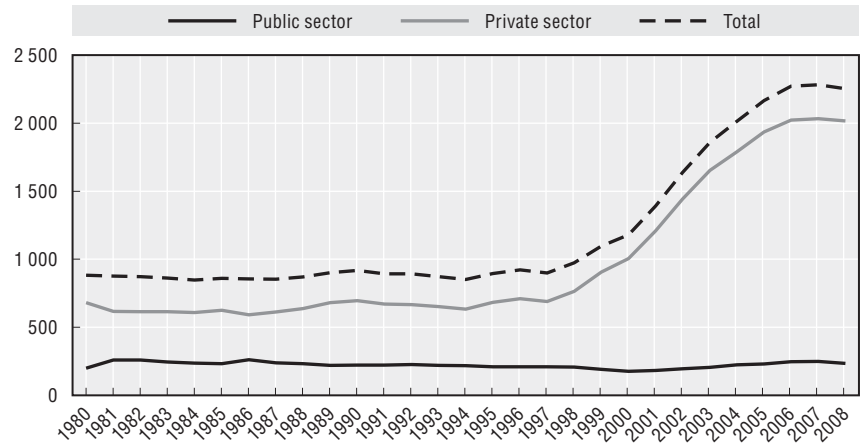
The expansion of the HE sector in Brazil began in the late 1990s and two main factors account for this growth. First, there was a need to promote internationalisation. Second, international tensions resulting from the spread of globalisation *vs.* nation state defense interests have engendered new concepts in relation to HE's role in the country. In a social context where mass university education became a necessity and where HE was seen as a stepping stone for social mobility, the new HE system model has been characterised by several factors. These include the growth of the number and the size of institutions; the privatisation of the higher education sector; the creation of new HEIs in less populated areas of the country; and lastly the diversification of study programmes, including evening classes held in non-standard time frames.

Since the 1990s, the number of HEIs (both in the public and the private sectors, including for-profit and non-profit institutions) has significantly increased and now stands at 61%. However, this expansion is mainly due to the large-scale privatisation of places on offer, and the private sector now accounts for 90% of all HEIs. The total number of HEIs almost doubled between 1998 and 2008, reaching a total of 2 252 institutions; 2 016 (90%) of them belong to the private sector (Figure 4) and the remaining 236 (10%) are public. They are either federal (93), state (82) or municipal (61) (MEC/INEP, 2009b). The development of the public sector over the same period was much more modest: it increased 15% overall between the 1980s and 2008. According to the HE census (*idem*), Brazil currently counts 2 281 HEIs and 24 179 study programmes. Both private and public HEIs offer study programmes on a regular basis as well as distance learning.

The diversity of supply is evident not only in relation to the administrative category (public or private), but also the location of HEIs. Over the last two years, enrolment in institutions outside of capital cities and especially among federal institutions registered an increase of 12.7% (MEC/INEP, 2009b).

The rise in the number of HEIs had an impact on the number of places on offer: in 2008, 5 080 056 students were enrolled in Brazilian HEIs. Some 2 985 000 new places became available, representing an increase of 161 195 (5.7%) compared to the previous year (MEC/INEP, 2009b). However, it appears that in recent years the number of unfilled vacancies has increased considerably,

Figure 4. **The evolution of the number of HEIs, by sector, 1980-2008**



Source: MEC/INEP (2009b).

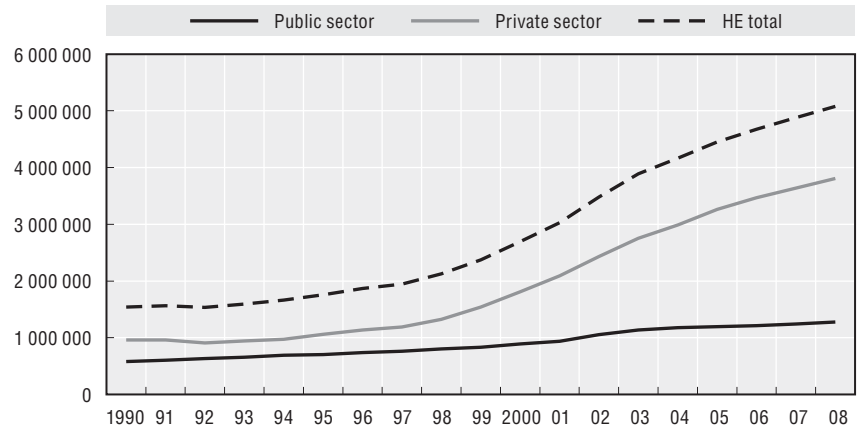
especially in the private sector: in 2008, 1 479 318 places were not filled. This corresponds to approximately 40% of total capacity (*idem*). These vacancies arose almost entirely in private HEIs; this suggests that many students have difficulty meeting the cost of tuition fees.

The growth of the private sector

With the increasing democratisation of basic education, students from families with lower socio-economic levels are now seeking HE qualifications. However, as public universities (which are free of charge) do not offer enough vacancies to meet demand, many young people are obliged to turn to private HEIs. In an attempt to attract the surplus population of public universities, and to discourage the installation of competing HEIs in their catchment area, the private sector tends to offer large numbers of places, frequently above the anticipated level of occupation. There is also a distinct imbalance in the training modules on offer, due to several factors: there are a large number of vacancies in study programmes for which secondary education does not offer training in a particular region; there are also many places available in large urban centres in the major states and a shortage of them in peripheral regions. Lastly, there is a plethora of places in specific programmes such as business, law and teaching.

Enrolments have followed the same trend as that of vacancies. In 2008 their total number increased by 4.1% (Figure 5) and private institutions enrolled about 3.8 million students (74.9%). This corresponds to an increase of 4.6% compared to 2007. In the public sector, enrolments in federal, state and municipal HEIs amounted to 12.7%, 9.7% and 2.8% respectively of all students (MEC/INEP, 2009b).

Figure 5. **The rise in the number of enrolments, by sector, 1980-2008**



Source: MEC/INEP (2009b).

The typical Brazilian student: an identikit picture

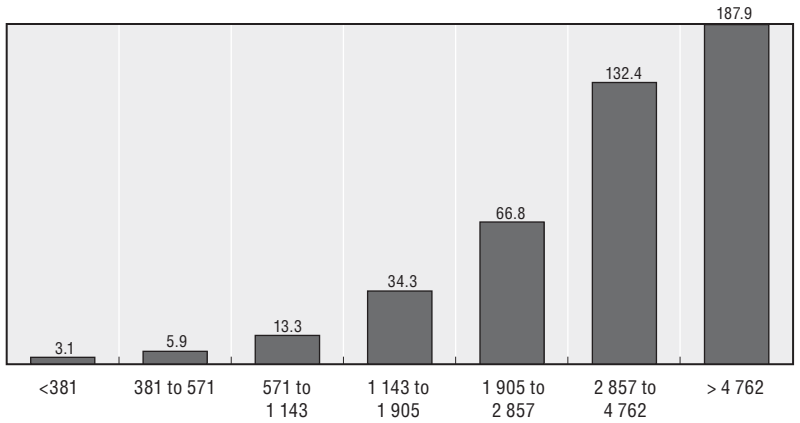
The results of the National Student Performance Exam, which was launched in 2004, integrate the results of the National Higher Education Accreditation System (Sinaes) and reveal a typical student's profile: he is a bachelor, Caucasian, lives with his parents in a nuclear family and has two siblings. The family earns up to ten times the minimum wage and is largely responsible for the cost of his studies, since he does not receive a scholarship or any other state funding. Most parents in this category have attended either secondary or tertiary education. Thus, as in Portugal, families are still primarily responsible for their children's educational expenses. According to the results of the Consumer Expenditure Survey (2008), only 2.5% of the total family budget is spent on education, while other expenses such as housing and food together account for about half of household spending. Expenditure on HE represents on average one-third of the total family expenditure on education.

The survey results show that spending priorities vary according to income levels. When family income increases, the average spending on education – and in particular on HE – also increases. Whereas the sector of the population which earns under EUR 381 per month spends on average EUR 3.1 monthly on education, those who earn more than EUR 4 762 spend about EUR 187.9 every month (Figure 6). There is an extremely wide gap between social classes in relation to sustainable levels of financial resources.

Research indicates that the student population is composed not only of young people aged between 18 and 24 years old (MEC/INEP, 2009a). In fact, about 26% of students are aged 30 or more and 18% of them are aged between 25 and 29. Encouraged by the democratisation of access to HE, adults already

Figure 6. **Average monthly expenditure on higher education, by household income bracket, 2008**

In EUR



Note: Values calculated by the Brazilian Central Bank according to the exchange rate on 7 January 2011.
Source: IBGE, Consumer Expenditure Survey 2008.

engaged in a professional activity are turning to HE in search of a higher-level qualification which will facilitate their professional advancement. They often invest in vocational projects which, due to either academic failure or an early start on the labour market, they were not able to complete at a younger age. This HE student profile is different from that of the "traditional student" who is within the standard age bracket, has a good family background, financial resources, is motivated and confident about his career choice, and has experienced academic success and social inclusion. In contrast, the "new student" attends evening courses of short duration in private HEIs which generally have low entrance requirements. In general, (s)he is a first generation HE student, has no time, space or suitable conditions for studying and struggles to reconcile time spent working or dedicated to his/her family with academic activities outside the classroom. (S)he has little inclination to develop relationships or engage in social and cultural activities with other students (Britto *et al.*, 2008; Carvalho, 2007). As in the case of Portugal, in Brazil when family income increases, the family participates proportionally in respect to their offspring's HE expenditures (Figure 7).

The ratio of graduates vs. enrolments

There has been an exponential increase in the number of graduates over the last two decades, due to the opening up of HE: the number soared to over 800 000 in 2008. Of these graduates, approximately 23% were from public HEIs and the remainder (77%) were from private institutions. Figure 8 compares this steep increase with the average number of graduations between 1991 and 2008.

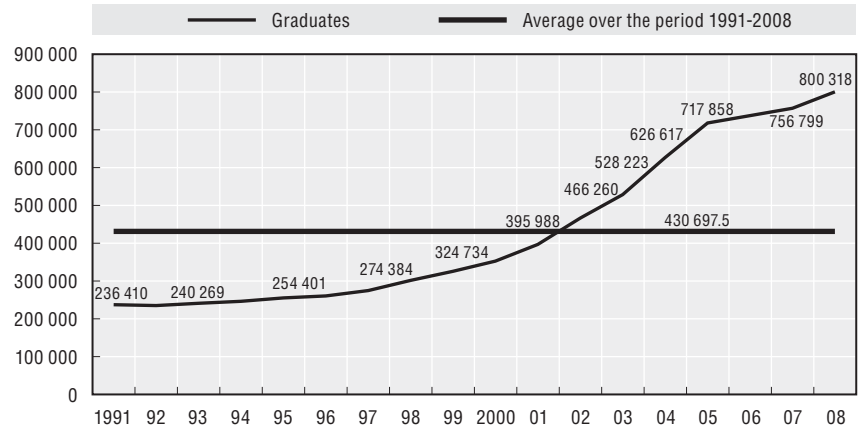
Figure 7. **The number of HE students according to family income, 2005**

In percentage points



Source: MEC/INEP (2009b).

Figure 8. **Evolution of the number of graduates, 1991-2008**



Source: Based on MEC/INEP (2000, 2001, 2002, 2005, 2009b).

However, the ratio of graduates with respect to enrolments is less encouraging. When you look at the evolution of the number of graduates per first year enrolments between 1991 and 2008 you find that, on average, about half of the students who engaged in HE did not actually graduate. In fact, the most recent figures – which were released in 2008 – indicate that the ratio of graduates per enrolment is 0.53, which is only slightly above the average over the last two decades (0.48) (Table 3).

Table 3. **Graduates in relation to first year students, 1991-2008**

	Ratio
1991	0.6
1992	0.6
1993	0.5
1994	0.5
1995	0.5
1996	0.5
1997	0.5
1998	0.5
1999	0.4
2000	0.4
2001	0.4
2002	0.4
2003	0.4
2004	0.5
2005	0.5
2006	0.5
2007	0.5
2008	0.5

Source: Based on MEC/INEP (2000, 2001, 2002, 2005, 2009b).

The case of Brazil: concluding remarks

The analysis described above entailed looking at a significant (but still far from optimal) number of students from different social backgrounds who, until recently, were simply not able to reach this level of education. It involved more than just researching the quantitative aspect of the expansion of HE; socio-economic considerations were also taken into account. Visibly, social heterogeneity has increased, but not enough to constitute equity. To resolve this problem, new policies are needed which allow public investment in this sector that is proportional to growth targets. However, the share of public funding spent on Brazilian HE has declined: in 2008 only 14.8% of national resources were attributed to HE, compared with 18.4% in 2000 (MEC/INEP, 2009b). This drop in public funding for HE affects the public sector most of all.

It is legitimate to question whether or not the expansion of HE has in fact resulted in access to educational facilities being truly democratic; it is all the more so if we want to include students' academic success in the equation. According to the data presented here, it is possible to infer that institutional diversification and differentiation have been the hallmark of a process that witnessed the multiplication of non-university institutions, predominantly private ones. According to some studies (Carvalho, 2007; Nunes, 2007), the spectacular expansion of private education in Brazil took place primarily

because the number and capacity of facilities were increased, as was the level of occupation of physical resources through class rotation. However, study programmes and institutions in several states and municipalities were launched quickly and indiscriminately, without necessarily complying with regulatory processes and quality assessments.

Final remarks

In recent years, developing countries have witnessed an exponential increase of enrolments in HEIs. The exclusive university model for "social and cultural elites" has disappeared in the face of a generalised need for greater numbers of highly qualified professionals to fulfil labour market demands. New policies have been put in place to promote inclusion and democratisation; these have been identified as the key values to be promoted in a society which is increasingly diverse and differentiated. This process of opening up HE to the masses has fostered the emergence of several public and – more especially – private institutions, and the creation of a large number of diverse study programmes.

Although an analysis of the student population shows that it is increasingly heterogeneous in terms of social and cultural backgrounds, a more detailed analysis reveals tensions that undermine the true democratisation of access as students from disadvantaged backgrounds remain under-represented. Educational policies (*i.e.* the *numerus clausus* in Portugal, and the low percentage of vacancies in public HEIs in Brazil) curtail students' access to their first-choice HEI and study programme. Admission to HEIs is primarily based on grades obtained at school. These in turn are highly dependent on the quality of the school the student attended, the support (s)he was given, his/her academic and cultural background as well as social variables such as belonging.

In general, a student's first preference tends to be for programmes or institutions with high social standing, in particular for public sector universities as opposed to non-university and private HEIs. Therefore, students from families with lower incomes see their choices dwindle not only because of their lower grades but also because of the sheer cost of HE. This forces them to choose institutions which are geographically closer to home, thereby avoiding the burden of travel costs and living outside the family home. In Brazil, financial difficulties to meet HE costs oblige a significant number of young people to defer enrolling until they are older and already on the labour market. These economic contingencies have led to alarming levels of debt in the private sector (given the shortage of tuition payments), where not even half of the places available are occupied. At the same time, there is a significant drop-out rate even from courses which are in high demand. Given these findings, there is clearly a limit to the extent to which the Brazilian private sector can expand.

If the increase of access has raised serious reservations in terms of social equity, the issues surrounding the democratisation of success are even more worrying, although a full analysis of the question would need to be supported by detailed statistics. The considerable rate of failure and dropout among students belonging to socially disadvantaged groups can be attributed to factors such as a lack of motivation to attend lesser-known HEIs (in general, this concerns students who are unable to compete for more prestigious institutions and programmes). Furthermore, these students need to combine studies with some form of work, even temporary. Both of these factors are dissuasive.

Finally, students with low economic resources have financial difficulty in carrying out various everyday activities such as participating in social activities with their colleagues. They need to have access to the resources necessary to satisfy these needs. Governments, therefore, also need to be more attentive to policies in relation to scholarships and the accessibility of bank loans – a practice which is still underdeveloped in Portugal.

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Missions on the move: university systems in England, New York State and California

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Universities' fundamental missions generally differ. For example, institutions can either focus on research or on teaching. Over time, these missions tend to change, and in some cases this is referred to as "mission creep". This negative epithet is reserved for universities with limited research capacities that try to emulate research-intensive universities. In most cases, it appears to be driven by the desire to improve their position in league tables. This paper studies mission development within three different university systems (in England, New York State and California) from a resource-dependency perspective. It focuses in particular on the mission development of comprehensive four-year universities within those systems. The analysis shows that although some emulation of research-intensive universities can be observed, there is a dominant drive to build a unique brand that cannot be equated with the profile of a research-intensive institution. The paper concludes with some general observations on mission development and the need for further research.

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Des missions en changement : les systèmes universitaires en Angleterre, dans l'État de New York et de Californie

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Dans l'ensemble, les missions fondamentales des universités diffèrent. Par exemple, certaines institutions peuvent se focaliser sur la recherche alors que d'autres se concentrent sur l'enseignement. Avec le temps, ces missions peuvent évoluer, et dans certains cas le développement de ces missions est parfois qualifié de « dérive ». Cet attribut négatif concerne les universités qui ont des capacités de recherche limitées et qui tentent d'imiter les universités à forte activité de recherche. Dans la plupart des cas, ces universités semblent être dirigées par le désir d'obtenir un meilleur classement. Cet article analyse le développement de missions menées au sein de trois systèmes universitaires différents (Angleterre, État de New York et de Californie) du point de vue de la dépendance des ressources. Il se concentre notamment sur le développement des missions d'une durée globale de quatre ans menées par les universités de ces systèmes. L'analyse montre que même si l'on observe une certaine imitation des universités à forte activité de recherche, il existe un fort désir de construire une marque unique qui ne peut être assimilée au profil d'une institution à forte activité de recherche. En conclusion, cet article émet certaines observations générales sur le développement des missions et sur la nécessité d'accroître l'activité de recherche.

The need for mission development

Bruininks *et al.* (2010) argue that changing demographics and spending priorities, coupled with increasing competition and demands for accountability, are not going to pass. They announce the arrival of a "new normal" which will oblige universities to develop fresh visions of their future and adapt their missions accordingly. This may give rise to changes in programmes offered, selectivity, investment in research capacity and other elements that constitute the mission of a university. In their discussion of mission development, Bruininks *et al.* focus on two principal actors that play a dominant role in bringing this about: first, the state (or higher education system agency) which formulates public policy; and second, the organisational leadership that is responsible for the processes of organisational change. Both face a daunting task because of the multiplicity of interests involved.

However, a large body of empirical studies (Riesman, 1956; Birnbaum, 1983; Morphew, 2000; Huisman and Meek, 2007) describes decreasing institutional diversity in higher education over time, even in a challenging economic climate. Most authors use a resource-dependency perspective (Pfeffer and Salancik, 1978) to explain this isomorphism. A discussion of this perspective leads Vught (2008) to advance two hypotheses: *i)* the greater the uniformity of the environmental conditions (*e.g.* state funding, regulations, quality control) of higher education organisations, the lower the level of diversity of the higher education system; and *ii)* the greater the influence of academic norms and values in a higher education organisation, the lower the level of diversity of the higher education system. His subsequent evaluation of the literature confirms the general impression that differentiation within higher education systems is decreasing over time. However, Vught also points to other possible outcomes in which the principal actors described by Bruininks *et al.* (2010) have a hand. First, he refers to the system differentiation of public (government dependent) higher education in the California Master Plan which defines three distinct university missions. Second, he evokes the role-related funding scheme of the University Grants Committee of Hong Kong.

If we follow Vught's argument, we have to ask ourselves whether – under the present circumstances – the environment of higher education systems is uniform and whether the academic norms and values are undifferentiated.

In relation to the first question, Eckel (2008) identifies several ways by which public policy may enhance institutional diversity. He refers to developments in health care policy as an interesting example: more transparent pricing, fresher definitions of quality and the introduction of different incentives. Public higher education in England provides an interesting illustration of an articulated public policy, as shown below.

Latucca *et al.* (2010) address the second question. Their empirical study shows that disciplinary environments are important factors in shaping faculty members' attitudes and behaviours towards organisational change. Contrary to the presumption of many organisational studies, faculty attitudes are not uniform or immutable. Latucca *et al.* also demonstrate that the process design of organisational change matters. In this way they add to earlier work by Kezar and Eckel (2002) and my own research (Jager, 1994) which shows that faculty paradigms (or cultural archetypes) are influenced by – and may contribute to – organisational change processes.

With the arrival of the "new normal", almost all university systems will need to engage in mission development. This paper aims to provide some insights into the way this takes place in three different, well-developed higher education systems. It will focus on only moderately research-intensive universities (*i.e.* comprehensive universities) because it is likely that these will demonstrate the most dynamism of change. The systems that will be considered are those of England, New York State and California. The English system is of special interest because its unitary character was established in 1992. As seen below, many observers expected a rapid "dedifferentiation" after the demise of the system's binary character. The systems of New York State and California are of interest because of their well-developed and strongly segmented characters. It will be interesting to see if mission development takes place and if so, whether it gives rise to "dedifferentiation". In each of the three systems it will be described separately; each section will briefly discuss the characteristics of the system, the external conditions and the changes in their missions over time.

In relation to the methodology used to explore mission differentiation, because of the different contexts it was not feasible to use exactly the same analytical framework for every system. In England universities have organised themselves into mission groups (*i.e.* groups of universities with similar missions; see Table 1), whereas the level of identification with certain types of higher education institutions is less explicit in New York State and even less so in California. Therefore, the analysis of the latter two systems begins by exploring specific mission types to which universities in that context may aspire. Beyond this search, the analysis of all three systems follows the same path: the presumed differences in outcomes between mission groups are put to the test.

Table 1. **Mission groups in England**

Mission group	Number of members	Share of total number of students	General characteristics
Russell	20	19%	Large research-intensive universities, mostly with medical schools
1994 Group	19	12%	Smaller research-intensive universities, without medical schools
Guild HE	21	4%	Relatively small specialist higher education institutions
Million+	28	23%	Post-1992 universities which focus on access
Alliance	22	19%	Mainly post-1992 universities which focus on applied research

Mission development in post-1992 universities in England

Some system characteristics

Post-1992 universities in England are a very interesting case for studying this phenomena. Before entering the unified system of higher education, they all had a narrowly defined mission. Most of them operated under the responsibility of local education authorities and had to submit their degree programmes for validation to the Council for National Academic Awards (CNAA). Towards the end of the 1980s, polytechnics had developed wider political and social agendas than their local governments. Therefore, when higher education was unified in 1992, the transition from locally orientated institutions to universities with a wider remit took place almost casually (Pratt, 1997). From that moment on, the post-1992 universities had to chart new waters. They were in a position to establish new missions – and they did so with gusto.

Many observers (*e.g.* Stevens, 2004) feared that the newly established universities would try to emulate the existing research-intensive ones. Although their research capacities were very limited at the time of unification, they assumed that all would develop into isomorphic "research-led" universities. However the universities' environments and their organisational cultures are very different from those of other universities. Because there is a lack consistent data on the organisational cultures of post-1992 universities, this paper will focus on the effect of environmental conditions. Two of them are critical with regard to mission development: *i*) widening participation and *ii*) research funding. Both have considerable bearing on the changes within post-1992 universities.

External conditions

The Dearing Report of 1997, *Higher Education in the Learning Society,* recommended giving (budgetary) priority to those universities that showed commitment to widening participation in higher education. It suggested projects designed to address low expectations and achievement and to

promote progression to higher education. To embed widening participation in the missions of universities is not easy. Although almost all universities' public missions announce an interest in widening participation, the universities' contributions vary greatly. There are three funding streams for widening participation activities in English universities: *i)* direct funding to support widening participation for students from under-represented groups, *i.e.* approximately GBP 120 million; *ii)* measures to improve the retention of students, *i.e.* about GBP 270 million; and *iii)* funding to support the access of disabled students, *i.e.* about GBP 20 million. All funding streams are formula (input) based. Together they cover slightly less than 9% of total recurrent funding for teaching (HEFCE data, budget year 2009/10). This represents a substantial incentive and is likely to influence mission development.

Public research funds are provided under a dual support system and on a competitive basis. First, the Higher Education Funding Council for England (HEFCE) provides funding to support the research infrastructure (budget year 2009/10, GBP 1 700 million). These funds go towards paying the salaries of permanent academic staff, premises, libraries and central computing costs. They are allocated on the basis of the perceived quality and volume of the research. Quality is measured in a periodic Research Assessment Exercise (RAE). Second, the Research Councils provide funding for specific programmes and projects (budget year 2009/10, GBP 3 100 million). In order to qualify for these, researchers have to complete applications for research grants, which demand a considerable amount of effort. Without an ample base to build on, post-1992 universities have to release faculty from teaching duties, which creates budgetary pressures. Moreover, research funding suffers from the "Matthew effect": "Unto everyone 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". In view of the importance of research to the development of the university and the concomitant contribution to teaching and service to their stakeholders, it is understandable that all post-1992 universities entered the competition.

Mission development

For the purpose of this analysis, it is very fortunate that English universities have organised themselves into different mission groups and that the post-1992 universities fall into two different ones. The most well-known mission group is the so-called "Russell Group" that brings together large research-intensive universities like Cambridge and Oxford. There are five groups in all; Table 1 shows the most important differences between them.

Although it would be wrong to state that all universities within one mission group share the same mission, the groups represent certain interests that are not shared by others. This becomes very clear when the public debate

touches on issues such as concentration of research funding or the allocation of additional student numbers. The profiles of the individual institutions within a group vary substantially and a small number of universities are even members of two groups.

At first glance, the distribution of students per mission group does not differ very much: Million+ and University Alliance enrol relatively more undergraduate students, they offer relatively more taught master's degrees and therefore fewer research master's. They also enrol more part-time postgraduates: 60% as opposed to 45% for the other universities. The share of non-EU postgraduate students is roughly the same for all groups, about 25%. However, the profiles of the students of Million+ and University Alliance members are quite different. Variations in the allocation of funds for widening participation bear this out. Together, both groups earn more than 70% of the corresponding funding streams (funds that further the aspiration of potential entrants and improve retention). The members of the Russell and the 1994 Group (the research-intensive universities) receive together slightly less than 15%. The remainder is shared between the other universities.[1]

The differences in the mission groups' profiles are borne out by the intake of first degree students: about 13% of the intake of young entrants to Million+ and University Alliance members originate from low-participation neighbourhoods, as opposed to 6% of the intake of the other universities.[2] Even if you look at the subject mix or geographical catchment area, the Russell and 1994 group of universities' performance lags behind Million+ and University Alliance (National Audit Office, 2008).

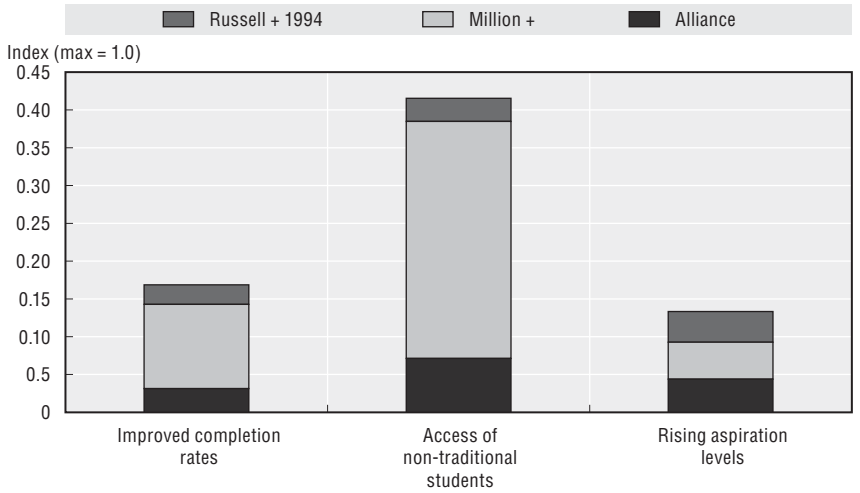
In terms of research funding, the difference between the Russell and the 1994 groups on the one hand – and the Million+ and University Alliance groups on the other – is clearest when their respective shares of research funding are compared against the total recurrent grant per institution. The share of the total recurrent research funding of the Million+ and University Alliance is dwarfed by that of the Russell and 1994 groups. The first two accounted for 2.9% and 5.1% respectively of all recurrent research funding in the 2009/10 budget year, whereas the Russell Group alone accounted for 62.3% (source: HEFCE Funding Recurrent Grant 2009-10). These data do not take into account research income from other sources, but this would not change the picture significantly.

A cynical observer might muse that the differences shown above are more a question of fate than of zeal. Because the post-1992 universities started off with limited research capacities and less-than-brilliant reputations, they did not stand a chance to develop into very selective research-intensive universities. Such a position suggests that beauty contests between universities only take one dimension into consideration: research intensity. This is questionable. Other dimensions, such as widening participation or link-up to

the labour market, may also come into play. In order to analyse mission development it is important to know whether these other dimensions have been internalised in universities' missions.

To bear this out, I examined the universities' strategic plans. This involved a text analysis along the following lines. First, I made word clouds using the strategic plans of four universities selected at random from each of four groups (Russell Group, 1994 Group, Million+ and University Alliance. Guild HE was left out because of its specialist nature). Second, I searched for frequently used words related to widening participation. Third, these words were assigned to the main strands of widening participation policy: completion rates, access for non-traditional students and raising aspiration levels of potential students. Fourth, I measured and normalised the frequency of these word clusters in the strategic plans of four universities selected at random within each of the four groups. The outcomes of the Russell Group and the 1994 Group were very similar, so they are presented together. The outcome of this analysis is shown in Figure 1.

Figure 1. **The focus on widening participation in strategic plans**



This analysis shows very clearly that the strategic plans of Million+ universities are distinguished by the attention they pay to access for non-traditional students and the improvement of completion rates. These widening participation issues receive more attention than at other universities. The University Alliance members do slightly better than the Russell and 1994 groups in terms of access for non-traditional students, but are not distinguished on the other issues. Raising the aspiration levels of potential students seems to receive equal attention by all groups.

Although this text analysis is a slightly crude attempt to get to the root of mission development, it is very informative. Indeed, there are more dimensions at play than one would have thought. Million+ members are clearly on their way to developing a distinctive profile, which will prevent them from becoming faint copies of research-intensive universities. What is also very clear is that one of the conditions that Vught postulated – the differences in the external environment – plays an important role. It is not the detailed regulation or segmentation of the system that makes it important, but the creation of (quasi) market conditions to which the universities have to find an answer. To what extent the other condition – the influence of academic norms and values – is at play is not clear yet. Private communications with the vice-chancellors of Million+ universities made it quite clear that branding their institutions is at the top of their agendas, but the way in which this affects the organisational culture will have to be investigated further.

Mission development of comprehensive universities in New York State

Some system characteristics

Under the New York State constitution all colleges and universities – public, private or for-profit – are part of the University of New York, from which they receive their degree awarding powers. The State Education Department is the administrative agency for the Board of Regents of this virtual university. Although the State Board of Education has wide-ranging formal powers, it normally avoids actions which would antagonise the public university systems or the influential private universities such as Cornell, Johns Hopkins and Columbia University. The governor of New York State is in fact the most important policy maker because of his budgetary powers. This influence extends to private and for-profit institutions as well, because the state's students also qualify for tuition support. Private (not-for-profit) universities additionally receive institutional support for every graduate they produce as well as some capital funding.

The governor appoints the trustees of the State University of New York (SUNY), directs collective bargaining with faculty and staff unions and approves the SUNY Master Plan, which gives directions for the development of the 64 institutions of higher education within the SUNY system. Some governors take initiatives that have a large impact on system development such as the establishment of the Center of Excellence in Nanoelectronics at the University at Albany. The governor may use the budgetary process, system planning and/or exercise his power to appoint the key actors of the system to influence its development. Governor Pataki, for example, made ample use of the latter method: he carefully screened the people he appointed. Other governors used a mix of instruments.

This does not mean that SUNY is a totalitarian system. Some trustee initiatives just prove less effective than others. It is clear, however, that the state budget process and politics in general are the principal drivers of higher education policy (Richardson and Martinez, 2009, p. 145). The chief administrative officer of the SUNY system is the chancellor, who is appointed by the SUNY Board of Trustees. Over the last decade, this post was occupied for very short periods and even fell vacant for almost two years. In February 2009, the Board of Trustees appointed as chancellor Dr. Nancy L. Zimpher, a well-known higher education leader. Before that, the SUNY system suffered in the absence of a strong leader in a highly politicised environment, especially at a time when public expenditure at state level came under severe pressure.

The higher education institutions within the SUNY system are evenly distributed all over New York State. Apart from a few specialist institutions, all campuses are located outside New York City. The City University of New York (CUNY) system, which has a different governance structure, is concentrated in New York City. SUNY is the largest public higher education system of the United States with about 465 000 students. Together, CUNY (City University of New York) and SUNY admit half of all undergraduate higher education students enrolled in four-year universities in New York State, of which SUNY accepts about two-thirds.[3] SUNY has no "flagship university", unlike many other public higher education systems. It has 13 University Centers (doctoral-granting research-intensive universities), 13 University Colleges (comprehensive four-year state universities, otherwise known as CSUs), 8 Technology Colleges and 30 Community Colleges.

The doctoral granting research-intensive universities have solid reputations. Two of them are members of the American Association of Universities (AAU), an exclusive "invitation-only" club of 61 US and 2 Canadian top research universities. The SUNY Master Plan 2004-08[4] defines the comprehensive four-year universities as "institutions providing a range of high quality disciplinary and interdisciplinary programs at the baccalaureate and master's level, as well as selected undergraduate and graduate professional programs, based on state and regional need." The Technology Colleges are described as "colleges with a strong technical orientation [that offer programs at] certificate, associate, baccalaureate, and selected master's level." The 30 Community Colleges have very clear missions: they offer transfer programmes leading to bachelor programmes as well as career associate degree and certificate programmes.

External conditions

Apart from some specific grants of limited size and differences in regional setting and programme composition, the external conditions of all institutions within the four groups are roughly the same. The research-intensive University

Centers receive higher per student funding than the institutions in the other segments and the per student expenditure on student aid is higher at the Technology and Community colleges than at the other two groups, but within the segments external conditions are similar. If we assume that the organisational cultures of the institutions within each segment are similar too, Vught's (2008) interpretation of resource dependency implies that the differences between the universities' missions within the segments are very limited.

Mission development

From the point of mission development it is interesting to note that SUNY maintains a system of "mission reviews", a cyclical five-year planning process. The process involves a dialogue between system and campus representatives; this in turn leads to a Memorandum of Understanding (MoU) which sets out, *inter alia*, agreed development targets in relation to enrolment, selectivity, programmes, human resources and facilities. During this process, each campus is invited to identify, develop and fine-tune a distinctive mission.[5] The SUNY Master Plan makes it very clear that this process is also meant to avoid "institutional drift and mission creep". In order to have a clearer idea of what this signifies, it is useful to take a look at the mission differences between the three sectors of SUNY: the University Centers, the University Colleges and the Technical Colleges. After that, I will look in more detail at mission development within the university college sector.

The profiles of the institutions were analysed using data (mainly 2007/2008) compiled by the Integrated Post-Secondary Education Data System (IPEDS) of the US Department of Education's National Center for Education Statistics.[6] I compared a large range of data on admissions and test scores, fall enrolment, graduation rates, student financial aid, finance and human resources of all institutions concerned and looked for statistically significant differences between the variables of the three groups (F-test at 1% level).

The University Centers emerge very clearly as research-intensive, selective universities with predominantly full-time students. The Technical Colleges on the other hand clearly focus on teaching, are access oriented and less selective. The profile of the University Colleges (*i.e.* CSUs) is less clear. Although they have no research focus, they are – as a group – almost as selective as the University Centers. There is no statistically significant difference between the averages of the SAT and ACT admission test scores of the University Centers and the CSUs. However, CSUs attract significantly more students who receive federal grant aid. This state of affairs is relatively new: a historical analysis of IPEDS data shows that five years back the proportion of students who received federal grants at CSUs was not different from that at University Centers. These observations make a further analysis of differences between the missions within the sector of CSUs very worthwhile.

To find out more about the mission differentiation of SUNY's CSUs I analysed relevant policy documents from all CSUs with the exception of Empire State College, because of its special mission as an institution that serves mature students on line and on site at 35 different locations in New York State. The policy documents I considered were *i)* mission and vision statements; *ii)* strategic plans; *iii)* the presidents' annual "State of the College" addresses; and *iv)* the most recent MoU between the presidents and the chancellor of SUNY. A detailed analysis reveals four mission orientations among the CSUs:

1. A group of six CSUs identify themselves as selective "public liberal arts and sciences" colleges with a residential character. This implies that they have high graduation rates, predominantly undergraduate student populations and only a moderate research focus. I refer to this group as the "public liberal arts and sciences CSUs".
2. Another group of three CSUs single themselves out as public liberal arts and sciences colleges with a strong component of performing arts and music education. Because of this profile one would expect that their student/faculty ratios would differ considerably from that of the other colleges. One of the MoUs recognises this and even suggests the possibility of a special additional tuition regime for these colleges, which in the SUNY context is a very controversial statement.
3. Two other CSUs refrain from any association with the liberal arts and sciences tradition, but present themselves as access-oriented colleges with a strong commitment to diversity, lifelong learning and service to society. This suggests that they are less selective and will enrol relatively more students who receive federal grant aid.
4. Finally, there are two CSUs that would like to develop into liberal arts and science master's colleges with a strong postgraduate component. They would need to stand out through the composition of their student population.

Further analysis of IPEDS data of these categories should make it clear whether relevant parameters (outcomes) really reflect mission differentiation as shown by the policy documents.

The public liberal arts and science colleges should stand out thanks to high SAT and ACT admission scores, high graduation rates and an enrolment profile that is predominantly undergraduate. An analysis of relevant IPEDS data shows that the average of all four parameters of this group is statistically different from that of all other CSUs.

The liberal arts colleges which possess a strong arts component (the second group) have on average the lowest student to faculty ratio but, compared to the group as a whole, the difference is not statistically significant.

This group's instruction expenditure – as a percentage of core expenditure – is also relatively high, but the difference is not statistically significant.

One would expect that CSUs which have a strong commitment to access would also stand out as having a high percentage of students who receive Pell Grants, high enrolment rates of "non-white" students and adult students, a high percentage of part-time students and relatively low SAT and ACT admission scores. An analysis of relevant IPEDS data shows that the averages of all these indicators for this group are statistically different from that of all other CSUs. It is interesting to note that the average research expenditure (as a percentage of core expenditure) of the third group is higher than that of the other CSUs and that they receive relatively more government grants.

The CSUs which wish to develop into master's colleges should make their mark in two ways: first, their student mix should, globally, comprise less undergraduate and more graduate students; second, they should dispose of relatively high amounts of research funding. An analysis of IPEDS data shows that CSUs which aspire to develop into master's colleges have the highest average percentage of master's students, although these percentages are not statistically different. The average research expenditure per full-time equivalent (FTE) does not differ from that of the overall average.

One can conclude that the first and the third mission orientations are corroborated by the outcomes as shown by the analysis of IPEDS data, but that the outcomes of the other mission orientations of CSUs are less distinctive. This does not mean that the second and fourth mission orientations are non-existent. They do not show up in the data for the moment, but may do so at a later time. For example, the average percentage of graduate students at CSUs in the fourth group was consistently higher than that of the other colleges over a range of years, although in none of these years was the difference statistically significant. The most important finding is that the overall drive to become a "research-led" university seems to be absent.

When looking for explanations in terms of resource dependency, one could argue that the "access CSU" is incentivised by the relatively high level of additional government grants. Secondary analysis shows that as a percentage of core revenues, government grants and contracts at these universities are about 9 percentage points higher than in other CSU groups. The budgetary incentive for the Million+ universities in England is of about the same magnitude, which may have helped to bring about this development. At first sight the explanation for the development of public liberal arts and science colleges' profiles is less clear. However, a private communication with one of the presidents of the colleges concerned pointed in the direction of future demographic changes in New York State. Between 2010 and 2020, the New York State Education Department expects a drop of about 15% in the number

of high school graduates, which will generate severe competition for students. According to the president, for some CSUs the niche of becoming an "access CSU" is not an option. They are therefore looking for another niche, that of becoming selective public liberal arts and science colleges.

The analysis shows that there are two more directions in which missions might develop, but they are less clear cut. The CSUs that aspire to become master's colleges will have to prove their mettle in the coming years. They might succeed in joining the chancellor's initiative embodied in the new strategic plan of SUNY to engage with local enterprise (SUNY, 2010). The CSUs in which education in the fine arts and music is a dominant feature will face a struggle to remain firm on their positions.

Coming back to Vught's two conditions for mission differentiation, it is clear that differences in the external environment have had a large impact on the development of CSUs. Again, this is not really due to detailed regulation or segmentation of the system, but to the creation of (quasi) market conditions to which CSUs have to provide an answer. Their periodic mission reviews encourage this process. CSUs are not forced into a one-size-fits-all format, but they are invited to follow their own paths. In what way the other condition – academic norms and values – is at play needs further inquiry. Staff surveys, such as those of the Higher Education Research Institute at UCLA (DeAngelo *et al.*, 2009), show considerable differences between faculty goals for undergraduate education between different types of universities. As in England, private communication with presidents of CSUs makes it clear that all of them want to establish a brand that is well understood within their organisations and by their stakeholders.

Mission development of comprehensive universities in California

Some system characteristics

The public higher education system of California is held in high esteem by most observers of higher education. The master plan concept of 1960 which defined three segments of higher education is still viewed as a best practice, although the author of the plan qualified it later as a treaty between the segments (Richardson and Martinez, 2009, p. 70).[7] Each segment has a distinct mission in terms of accessibility and degrees that it may offer. The Universities of California's (UCs; ten campuses) are supposed to enrol the top eighth of secondary school leavers; they offer a wide range of PhD programmes and lower academic degrees. The California State Universities (CalState; 23 campuses) are supposed to absorb the top third of secondary school leavers and offer bachelor's and master's degrees and, in a few isolated cases, doctoral programmes. The California Community Colleges (CCC; more than 100 campuses) should absorb the remaining school leavers who wish to

proceed to higher education. The master plan contains arrangements that allow for CCC students to transfer to CalState or UC. This is an important feature of the system because the CCCs enrol 75% of all college students in California, whereas the national average is about 40% (Shulock and Moore, 2004). Due to enrolment and budgetary pressures these transfer arrangements have become very cumbersome in the last few years, although politicians have taken new initiatives to address this situation (*The Chronicle of Higher Education*, 2010).

The average profile of CalState Universities (California's CSUs) differs considerably from that of the other two segments. For example, on average more than 25% of the core expenditure of the ten campuses of the University of California is spent on research. Furthermore, each of these universities awards several hundred first professional degrees and doctorates, whereas San Diego CalState University is the only university so far to have awarded Doctor of Education (Ed.D) degrees. On the other hand, student enrolment at California Community Colleges is about 75% part time, whereas at CalState Universities this amounts to 25% and at the University of California is less than 4%.

Other differences between the three segments are detailed in Table 2.

Table 2. **Characteristics of university systems in California**

	CCC	CalState	UC
Expenditure on instruction as a percentage of core expenditure	40%	40%	28%
Overall graduation rates	22%	48%	79%
Transfer-out rate to other university systems	25%	37%	11%
First-time, full-time students who receive Pell Grants	30%	34%	30%
Top 25% percentile SAT score critical reading/math	N/A	428/440	511/544
Percentage of undergraduates between 25 and 64 years old	40%	22%	5%
Student/faculty ratio	24	21	21

Note: Data refer to 2008.
Source: Results based on IPECS database 2010.

The budgetary process is the state's main governance instrument. Because the higher education system and, for example, the Department of Prisons are both part of the discretionary budget, California's continuous fiscal crises have a severe impact on the university system. The budget for education below university level is mandated and therefore less affected by the multiple budgetary, demographic and economic challenges of the state. The governor proposes a budget to the legislature and has a "line item veto". He also appoints the majority of the members of the governing boards of the system segments (subject to legislative approval). Over the last years the segment budgets were the result of an arrangement between the governor and

its top administrators. In some cases this led to painful compromises such as increased tuition fees (plus 30%, but they are still low compared to other states), reduced student aid, a drop in student intake (minus 10%), salary cuts and obligatory furloughs for all employees. Of course, every US state is cutting back expenditure on higher education, but the impact in California is enormous because of the sheer size of the public sector.

The missions of the research-intensive universities (UCs) and those of the community colleges (CCCs) are quite clear. Judging by the key parameters, the missions of these segments have been stable over a long period of time. This is less so for the CalState segment. Therefore, our focus will be on the Californian CSUs, the CalState universities. Their primary mission is undergraduate education as well as graduate education through master's degrees and professional and teacher education. Faculty research is authorised, consistent with the primary function of instruction. Recently the segment was allowed to award a Doctor of Education (Ed.D) degree in educational leadership. Other doctorates can be awarded jointly with UC or an independent institution.

External conditions

The CalState segment consists of 23 campuses of very different size with more than 450 000 students (of which 74 000 are postgraduates); there are 24 000 faculty members and 23 000 staff members.[8] There are eight campuses with fewer than 10 000 students, five with 10 000 to 20 000 students and ten with more than 20 000 students. CalState universities are supposed to take in transfers from CCCs. Therefore, their student populations differ from normal four-year CSUs. Consequently, only about 40% of the total number of students in CalState Universities are enrolled in the first two years of the undergraduate programmes. This distribution (at system level) has remained stable throughout the last 30 years.[8] Some campuses have a higher percentage of freshmen and sophomores. In most cases this goes together with a relatively low enrolment of postgraduate students. The reverse is also true: low enrolment in the first two years is combined with relatively high numbers of postgraduates. I will demonstrate below that this is associated with mission differentiation.

Generally speaking, more than half of the core expenditure of CalState Universities is spent on instruction. A limited part of the core expenditure is also spent on research, but with one exception (CalState Bakersfield) that does not surpass 5%. This does not mean that the faculty of CalState Universities is not research active. About 10% of the faculty is engaged in sponsored research. Faculty on tenure track may take on research projects without external funding in order to progress properly. Staff appraisal relies strongly on research productivity. In order to be considered for tenure at a CalState University, a candidate will normally have to produce at least one peer

reviewed article per year. In practice the university has two ways to allocate faculty time for research activity, which in many cases is used to prepare applications for research grants. This is done *i)* by reallocating workloads so that some faculty are released from teaching duties for more than the regularly allotted time for public service, research and consultancy; or *ii)* by promoting the use of summer release time, *i.e.* the two- or three-month period over the summer when faculty do not have any teaching or other obligations to the university. This practice is seen by many observers as an important drive within the CalState segment to become more research intensive, to the detriment of its teaching function.

Mission development

Again, I analyse mission development within the CalState segment from a resource-dependence perspective in line with Vught's (2008) two hypotheses. At first sight, the external conditions of all institutions within the CalState segment are roughly the same. Apart from some specific grants of limited size and differences in regional setting and programme composition, the funding levels of the universities do not differ very much. The organisational cultures may be driven by the research-oriented faculty appraisal system, but that would apply to all CalState universities. However, just as I found in New York State, competition for students within the system may be in play as an important external factor. Fresher definitions of programme quality with consequent impacts on selectivity could also have considerable bearing on mission change.

In order to have a good understanding of the competition that students face I looked first at admission policies. California's Master Plan defines the admission targets of high school graduates: the research-intensive universities (UCs) enrol the top 12.5%, CalState enrols the top 17.5% and CCC the remainder. Over time the percentage has changed (Table 3).

Table 3. **First destination high school graduates, 2008**

Year	% UC	% Cal State	% CCC
1985	13	17	65
2007	13	23	55

Note: Data refer to July 2008.
Source: Statistical Abstract, CalState 2009.

CalState universities apparently do enrol more high school graduates than in the past and, as a consequence, the transfer of CCC students to CalState universities has suffered. Further analysis of transfer data, the number of programmes that are "compacted" (*i.e.* that have additional entry requirements) and the distribution of students over the lower and upper

divisions of undergraduate programmes shows that this is indeed the case. Some CalState universities that enrol a relatively small number of students from CCCs have many compacted programmes and – in comparison to other CalState universities – a relatively high number of lower division students. The reverse is also true. Table 4 shows figures for six universities; the difference between the top and bottom three is striking.

Table 4. **Profile difference between CalState Universities**

CalState	% of transfers of all undergraduates	% of compacted programmes	% lower division students
Maritime	7.3	All	47
Pomona	6.2	10	41
San Luis Obispo	3.7	All	46
Dominguez Hills	11.4	7.4	32
Fresno	14.7	6.3	32
Los Angeles	11.9	3.2	34

Note: Data refer to 2007.
Source: Data are retrieved from the Statistical Abstract, CalState 2009.

In order to find out whether these differences can be related to mission development in CalState universities I developed three mission orientations on the basis of private exchanges with leaders within the CalState system. These orientations were labelled "access", "professional" and "research driven". Next, I performed a word frequency analysis of all CalState universities' mission and vision statements. From this analysis I selected three sets of terms related to the three mission orientations. The sets of terms are shown in the second column of Table 5. In the last stage I assigned each university to one of the mission orientations on the basis of their respective mission and vision statements. Not all assignments are clear cut: for example, the assignment of mission orientations of three CalState universities – CalState Chico, East-Bay and Stanislaus – to the "access" orientation is weak. The assignment of mission orientations for all CalState universities is shown in the third column of Table 5.

Table 5. **Results of a text analysis of mission and vision statements**

Orientation	Selection of terms	CalState Universities
Access	Personal development, future role in community, service orientation	Bakersfield, Chico, Dominguez Hills, East Bay, Fresno, San Marcos, Stanislaus, Sonoma, Humboldt, Monterey Bay, Los Angeles, Northridge, Sacramento
Professional	Preparation of professionals, leadership, applied research	Maritime, San Luis Obispo, Pomona, Fullerton
Research-driven	Intellectual growth, research and scholarship, excellence	Long Beach, San Francisco State, San Jose, San Diego

Visibly, the mission orientations can be associated with certain institutional policies. For example, a CalState University which is characterised by "access" orientation is likely to enrol students with relatively low SAT/ACT scores and a high number of both minority students and students who receive federal student aid. In Table 6 these predictions are compared to observed outcomes as provided by IPEDS data. An IPEDS variable average is found to be different compared to the average of other orientations if this is confirmed by a Student T-test at 5% level or better.

Table 6. **A test of predicted characteristics on the basis of orientation of mission and vision**

Orientation	Predicted	Observed
Access	Low SAT/ACT admission scores	Lower SAT/ACT scores compared to other orientations
	High percentage of Pell Grants	Higher percentage Pell Grants compared to other orientations
	Low enrolment among 18-24 cohort, high among 25 to 64-year-olds	Confirmed, compared to other two orientations
	High enrolment rates among minority students	Not confirmed, on the contrary: enrolment of Asian students is lower
	High transfer rate to CalState/UC	Confirmed
Professional	Average SAT/ACT admission scores	Higher than those of "access", but otherwise no difference
	Low percentage of Pell Grants	Confirmed
	High enrolment among 18-24 cohort	Higher than those of "access", but otherwise no difference
	Low transfer rate to CalState/UC	Confirmed
Research-driven	High expenditure on research	Not confirmed due to incomplete data
	High percentage of postgraduates	Confirmed
	High SAT/ACT admission scores	Higher than those of "access", but otherwise no difference
	Low enrolment rates among minority students	Not confirmed

The predictions on enrolment figures for students from minority groups were not confirmed, although for one such group significant lower enrolment was found in the "professional" orientation. The exceptional position of Asian students as a minority group has been reported elsewhere (see, for example, Heller, 2009; IHEP, 2010). The lack of a statistically significant difference between the SAT/ACT admission average scores of those last two groups is not overly problematic; in any case, they are significantly higher than those which are access oriented. Higher expenditure on research for the "research driven" orientation could not be confirmed because of missing data. Although the size of the sample with data is too small to draw statistically significant conclusions, further analysis shows that the research expenditure per full-time equivalent

faculty member of universities in the developmental group is twice as large as that of universities in the other two groups. This means that the prediction cannot be rejected without further information.

This brief analysis shows that some mission differentiation is taking place within the CalState segment and that it is associated with selectivity, but not in the usual sense of the word. The fact that CalPoly San Luis Obispo is at par with UC Berkeley in terms of selectivity is not because of the research reputation of San Luis Obispo, but because of its strong professional reputation. Prospective students of this university are welcomed with the message that:

> Cal Poly education pays off. For the past decade, 89.2 percent of Cal Poly students report working full-time or attending graduate school within one year of graduation. A full 89.2 percent of 2007-08 grads are working full-time or attending graduate school – 70.2 percent are working full time, and 18.9 percent went on to graduate school. And 94 percent of those employed are in fields relating to their college degrees.[9]

That is a strong message. As we have seen, CalState Long Beach and San Jose are oriented differently. They are more research driven, are quite selective and enrol high numbers of postgraduate students. In their communication to students they refer to "highly-valued undergraduate and graduate educational opportunities through superior teaching, research, creative activity and service" and "nationally recognized programs". As might be expected, the non-selective CSUs such as Dominguez Hills communicate in an altogether different way with their prospective students. They refer to "excellent and affordable education", "endless opportunities" and "you'll be amazed by what you'll accomplish in just four years". All these statements are directed at different student populations and reflect very different missions.

Returning to Vught's two conditions that guide mission differentiation, this analysis makes it clear that the external environment of the CSUs induces this process. All of them identify brand communities that they wish to belong to and may use to further their cause. Internal documents that describe strategy development demonstrate ample involvement of the campus community. Judging from process documents at several CSUs, academic norms and values – the second condition – seem to evolve alongside this development. However, further systematic inquiry will be needed to corroborate this and to learn how it comes about.

Conclusion

A comparison of mission development in England, New York State and California leads to the conclusion that decreasing institutional diversity in higher education systems is not inescapable for comprehensive state universities. The oldest system segment that we looked into, the Californian state

universities, developed very distinctive missions which cater for well-defined student populations and regional interests. The other two system segments (SUNY's CSUs and the post-1992 universities in England) appear to have developed distinctive missions along similar lines. Although Birnbaum's (1983) analysis applied to university systems as a whole and not only to the middle segment considered in this paper, it appears as if contrary to his prediction: missions have become more articulate over time.

The hypotheses that Vught (2008) advanced to explain mission differentiation (induced by different external conditions and organisational cultures) have not been tested fully. The effect of varied external conditions is clear: budgetary incentives, fresher definitions of quality and increased competition for students seem to have a considerable impact on the development of missions. University leaders of comprehensive state universities are aware of the fact that they will not be able to repeat the act of Michigan State University which developed from an agricultural college at the beginning of the 20th century into a prestigious research-intensive public university which figures at the top of many university rankings. The success of a comprehensive state university is generally not measured in terms of its position on ranking lists such as the Shanghai Jiao Tong University or the *Times Higher Education* tables. University leaders of comprehensive state universities look for other ways in which their universities can excel. As we have seen above, this may give rise to very distinctive missions.

The question that I did not deal with in this paper is how the organisational change comes about. What strategies for change are developed by university leaders who are faced with a "new normal"? This question brings us back to Vught's second hypothesis on the impact of organisational culture. Kezar and Eckel (2002) found that strategies for change that were sensitive to organisational cultures enhanced organisational change. In order to obtain more insight into the effectiveness of strategies for change, it would be useful to study the development of organisational cultures in comprehensive state universities in more detail. The Q-methodology as advised by Trowler (2008) seems to offer a promising avenue that avoids other intrusive and time-consuming approaches.

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Notes

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Differences between public and private universities' fields of study in Argentina

by
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The literature on private higher education has identified striking differences between the public and private sectors in terms of fields of study. For example, unlike their public counterparts, private universities have traditionally specialised in the social sciences and humanities. This paper explores the university market in Argentina to see if these differences still persist today, or if they have blurred over time. This dynamic is studied from the perspective of both supply (the percentage of institutions offering a specific degree programme) and demand (student enrolments). Clearly, both sectors are venturing further and further into each other's traditional domains.

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Différences entre public et privé par rapport aux domaines d'études dans les universités argentines

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La littérature sur l'enseignement supérieur privé a identifié de fortes différences entre les secteurs public et privé concernant les domaines d'études. Par exemple, à la différence de leurs homologues publiques, les universités privées se sont traditionnellement spécialisées dans les sciences sociales et les lettres. Cet article explore le marché universitaire en Argentine afin de découvrir si ces différences persistent encore aujourd'hui ou si elles se sont estompées au fil du temps. Cette dynamique est étudiée du point de vue de l'offre (le pourcentage d'institutions proposant un diplôme spécifique) et de la demande (étudiants inscrits). Il apparaît clairement que les deux secteurs s'aventurent toujours plus dans les domaines traditionnels de l'autre partie.

Introduction

It is safe to say that, overall, the literature on private higher education (HE) has repeatedly confirmed Levy's (1986) initial finding that differences between the public and private sectors in terms of demand are both striking and fundamental. Studies on Latin America have established that compared to the public sector, the private market has concentrated on the humanities and social areas (Levy, 1986; Moura Castro and Navarro, 1999; CINDA, 2007) and Argentina is not an exception (García de Fanelli and Balán, 1994). However, enrolment patterns in public universities are changing in terms of fields of study. Already over two decades ago, Levy (1986) noted that enrolment patterns in the public sector were undergoing changes and leaning more towards what were traditionally private fields.

Although Frank and Gabler (2006) have suggested that the growth of the social sciences in relation to other disciplines is a world-wide trend that transcends local particularities, it is proven that specific national policies have an additional impact on enrolment patterns among disciplines and between the public and private sectors. In Argentina, for example, and according to Cosentino de Cohen (2003), student enrolment in the social sciences and humanities at national (public) universities has grown in relation to medical and basic sciences[1] since the 1980s. If this trend continues, public-private differentiation can be expected to diminish, particularly if private institutions start to offer their services in what, until now, has been practically the exclusive reserve of the public sector. Before addressing this eventuality, it is clear that both sectors have converged to some extent over time, so it is important to identify the main local forces behind the blurring of public-private differences.

This paper begins by presenting a general overview of how the public and the private university sectors in Argentina have evolved over recent decades. In the following section, a case study – based on statistics compiled by the Secretariat for University Policies (SPU) – serves to evaluate public-private differentiation in terms of academic supply, *i.e.* places on offer. To date, the issue of supply has not been the object of an in-depth analysis in the literature, but it is essential when assessing public-private differences. Demand is then examined through the lense of enrolment by field, which is the conventional mode of analysis used in the literature. A longitudinal

approach (1977-2006) enables an analysis of the extent to which public and private markets have in fact converged with regard to their study programmes, thereby resulting in fewer public-private differences.

The final section discusses the discrepancy between theory and practice. My assessment of the main empirical findings is based on a theoretical framework and organisational study called "new institutionalism" (NI). This framework is useful to analyse why, under certain conditions, a process of evolution over time gives the impression that organisations have the same organisational structure. However, it is not particularly effective in explaining why these organisations change over time (Brint and Karabel, 1991). Therefore, it is prudent to complement the NI approach with consumer choice theory in order to understand how organisations react and adapt under the influence of market forces.

An overview of the university market in Argentina

Although the beginnings of Argentinean higher education can be traced back to the colonial period (the first university, the Catholic University of San Carlos, was created in 1662) it was not until 1821 that a second institution opened its doors. That year, the University of Buenos Aires was created along the lines of the Napoleonic concept of a highly centralised system of control and according to national standards (Cano, 1985); to this day it is still the most prestigious university in the country. A model for the public university system was therefore defined early on.[2]

In parallel to the country's growing economic prosperity, the number of students rose considerably – particularly from 1880 to 1930 (García de Fanelli, 2004). Throughout this period, however, access was still based on an elitist approach. It was not until the late 1940s that free access and gratuity were implemented by the Perón government throughout the entire secular educational system. This paved the way for a significant increase in the number of students, the majority of whom were middle class. Up to this point, Argentina had the highest gross enrolment ratio in higher education in the region.

Going back to the 19th century, public universities were perceived as being a mere appendix of the executive power, so as of the late 1890s there were concerted efforts to challenge the state's monopoly. As in the rest of the continent, the Catholic Church made the first move and in 1910 it opened the Catholic University of Buenos Aires. However, some influential members of the executive power took a strong anticlerical stance which hampered the consolidation of a religious alternative. The university was never recognised by the state and was forced to close in 1922 (Bello *et al.*, 2007). Since the mid-1940s there have been several attempts to break the public sector monopoly. This time the impulse came from non-religious quarters, and from

the scientific community in particular. Its goal was to build up a private research sector in order to shield scientists' academic work from the political struggles that dominated the national university system during this period. Again, the state succeeded in defending its position as the only provider. It is important to recall that from its origins, the concept of the university model in Argentina was that of a fundamental tool, held by the state, to reaffirm national identity. Therefore, for some influential members of society, the private sector was perceived as a threat. Nevertheless, as of the mid-1950s the public monopoly on the university market began to loosen. After much debate, a law was passed in 1958 authorising private universities to open.

In contrast to Brazil, Chile and Colombia (to name but three countries in the region which had high numbers of students), private higher education in Argentina got off to a late start. But within ten years, *i.e.* by the end of the 1960s, the sector had matured and was dynamic. Since opening up the private sector was initially a major public policy issue, its expansion did not take the state by surprise, as was the case in many Latin American countries (*e.g.* Mexico). However, state intervention was needed in order to ensure quality control. The growth of the private sector was therefore curtailed by the fact that authorisations were granted on a highly selective basis.

During the 1980s the public sector absorbed the bulk of new demand for HE (no new private universities were allowed to open for 16 years, between 1973 and 1989); however some radical changes took place in the 1990s. When the state re-authorised private universities to open, although it clearly retained control of the sector, these institutions were given the long-awaited possibility of reaffirming their rights. Taking advantage of this situation, the private sector grew vigorously, surpassing the number of public institutions for the first time. The number of private universities nearly doubled between the late 1980s and the late 1990s, shooting up from 23 to 44 institutions (SPU, 2006).

However, greater freedom was also accompanied by greater supervision, the idea being to control the quality of education. In 1996, the National Commission for University Evaluation and Accreditation (CONEAU) was created; this body proceeded to severely limit the expansion of the private market once again. As Levy (2006) observes, this triggered off reactive action or "delayed regulation" from the state in order to limit private growth, or at least limit low quality growth. After ten years of existence, out of 88 requests for accreditation, CONEAU only authorised 11 universities to operate (CONEAU, 2005). Again, this policy protected the private market in relation to quality. By preventing universities with insufficient credentials from opening, private facilities have now become more attractive to prospective students, which is important given that some public universities are still considered to be among the higher education system's elite. In addition, certain characteristics of the academic labour market have helped private universities to consolidate their

positions as viable alternatives. For example, most private institutions have recruited part of their personnel among professors working in public universities.[3] Thus, private institutions have earned social recognition and legitimacy by hiring faculty members from institutions which form part of the market's elite.

Although it represents a viable alternative, the public system has failed in some areas, which has also allowed the private sector to blossom. Public universities absorb the bulk of new demand but dispose of limited funds, particularly since the mid-1980s; quality has therefore become an issue. And although these institutions maintain their elite status in some fields (*i.e.* the basic sciences), some private institutions are now on an equal footing with national universities. These private facilities offer a high quality alternative in some fields which were traditionally dispensed in the public sector (*e.g.* social sciences and medicine). Finally, intense politicisation has made national universities less attractive for those students who are not interested in playing politics. All of these considerations have contributed to pave the way for the development of the private sector.[4]

Public-private differentiation by fields of study

In relation to supply…

Although the different fields of study offered by public and private institutions have mainly been analysed from the perspective of demand (*i.e.* the percentage of students enrolled in each market), it is important to also examine them from a supply perspective in order to have a better and more comprehensive understanding of each individual sector.

The following paragraphs discuss whether the private and public sectors have the infrastructure they need and, as a result, are in a position to train (independent of the production process itself) chemists, meteorologists or, for example, lawyers. Unsurprisingly, Table 1 clearly underscores a long-established tendency across Latin America: there are striking differences between the public and private sectors, particularly in the applied and basic sciences. Twenty-five years ago only two out of more than twenty private universities in Argentina offered ten or more fields of study (Levy, 1986). Even today, when private institutions are keen to expand and venture into academic fields which are less traditional or more expensive to teach, two key factors – infrastructure costs and relatively low demand – usually dissuade private institutions from increasing their potential reach. However, these factors have not on the whole prevented public institutions from offering a more heterogeneous array of academic courses. Consequently, it is not surprising that there is a big discrepancy between public and private supply. Furthermore, historical considerations still weigh on the situation today.

Table 1. **Academic supply in Argentinean public and private universities and university institutes by field of study, 2006**

	Number of institutions offering the degree		Percentage of institutions offering the degree	
	Public	Private	Public (%)	Private (%)
Applied sciences				
Architecture	18	23	41	46
Astronomy	3	–	7	–
Biochemistry and pharmacy	14	7	32	14
Agricultural and animal sciences	31	10	70	20
Geology	17	–	39	–
Statistics	6	–	14	–
Industry	35	22	80	44
Systems	37	31	84	62
Engineering	37	14	84	28
Meteorology	1	–	2	–
Other applied sciences	3	1	7	2
Basic sciences				
Biology	31	16	70	32
Physics	23	3	52	6
Mathematics	29	4	66	8
Chemistry	25	7	57	14
Health				
Medicine	12	17	27	34
Dentistry	8	5	18	10
Allied health	33	24	75	48
Public health	7	1	16	2
Veterinary	10	4	23	8
Humanities				
Archeology	3	–	7	–
Arts	23	15	52	30
Education	37	29	84	58
Philosophy	20	10	45	20
History	27	5	61	10
Letters and language	31	15	70	30
Psychology	10	29	23	58
Theology	–	7	–	14
Social				
Communicational sciences	33	29	75	58
Political science	19	21	43	42
Geography	31	22	70	44
Law	26	31	59	62
Economy and Administration	43	42	98	84
Institutional Relations	8	19	18	38
Sociology and anthropology	32	13	73	26
Other social sciences	7	3	16	6

Notes: In 2006, Argentina had 44 public and 50 private universities.
In architecture for example, out of a total of 44 public universities, only 18 offer a degree in this discipline; this represents 41% of the sector.
Source: Based on SPU (2006) and author's own calculations.

Given that the state existed long before the private sector, it has been instrumental – to a certain extent – in making provision for a heterogeneous set of courses (Levy, 1986).

Applied sciences. On the whole, the capacity of private institutions in the fields of biochemistry and pharmacy, for example, is relatively limited and it is non-existent in astronomy, geology, statistics and meteorology. However, public institutions also have a relatively modest capacity in astronomy and meteorology.

Basic sciences. As expected, the public sector clearly leads the way in basic sciences – particularly in physics and mathematics. The private sector only stands out in biology, although there can be wide discrepancies between institutions.

Health sciences. The distinction is less evident in relation to health sciences. The private sector clearly dominates in the field of medicine; this reflects the considerable growth of private medical schools which took place as of the mid-1990s and over the last decade. Both well-known scientists and well-respected private hospitals have been working in association with university institutes and these key factors have contributed to consolidate the role of the private sector in non-traditional markets. On the other hand, this atypical growth underlines the fact that the private sector has also expanded into new and costly fields such as medicine and allied health, and will probably continue to do so as long as the labour market offers its graduates good prospects. Health science is therefore a good illustration of the fact that the stark differentiation between the public and the private sectors found by Levy (1986) has blurred somewhat over time.

Humanities. The public sector dominates human sciences, although not as clearly as in the case of basic sciences. Seemingly no private facilities have a department of archeology, even though the public sector capacity is limited. Thus, archeology is a good illustration of the fact that when demand is limited, the private sector is not represented. The private sector, conversely, has a clear lead in the field of psychology, with a capacity doubling that of the private sector (58% *vs.* 23%). This indicates that private universities are keen to respond to market demand when there are latent labour market payoffs.

Social sciences. Not surprisingly, and as previous research shows (Levy, 1986), the private sector is extremely present in "inexpensive" fields, particularly in the social sciences and commercial studies in particular. However, the public sector is also active in less costly areas, which blurs private-public differences in terms of the study fields on offer. Therefore, both the private and public sectors are well represented in the social sciences.

This study of differences between public and private sector supply shows that there are clear differences between the two. These differences are more the result of limited capacity in the private sector in relation to basic and applied fields, rather than the absence of a public sector alternative in traditionally private sector fields, such as human and social sciences. And although the private market tends to specialise in less costly areas, there is also convergence between the two in some more expensive fields (*i.e.* the health sciences) when there is a strong demand that justifies the cost of provision.

… and in relation to demand

Cosentino de Cohen (2003) argued that, since the 1980s, the number of students in public universities in Argentina has been growing more rapidly in the humanities and social programmes than in other fields. Given this dynamic, it seems that public institutions began to imitate their private counterparts by concentrating on those fields that are least expensive to teach. They did not necessarily imitate the private sector intentionally, but this can be seen as the consequence of an increasingly similar response to demand, particularly in the wake of the open admission policy which was implemented in 1984. In this context, public and private sector convergence should come as no surprise.

In Table 2, a pattern emerges in relation to the **public sector** between the three sample years under analysis (1977, 1995 and 2006). Enrolments have clearly fallen in applied and basic sciences as well as health, whereas they have increased in the humanities and social sciences. For example, enrolment figures in applied and basic sciences decrease between 1977 and 1995 – a trend that repeats itself between 1995 and 2006. Agricultural and animal sciences account for the largest decline, particularly between 1977 and 1995. It is also important to note the relative reduction in the proportion of students with engineering, systems and industrial qualifications (the figure fell from 16.8% in 1977 to 13.2% in 2006) and in the exact and natural sciences (here it declined from 4.6% to 3.0%). Not surprisingly, this decrease took place in parallel with a process of deindustrialisation that began to affect the whole economy as of the mid-1970s. After that, it is clear that demand for certain careers was related to changes in expectations in relation to long-term employment perspectives. On the other hand, health – an aggregate field of study – remained relatively stable over the whole period. In light of this fluctuation of student numbers among study fields, one can conclude that humanities and social programmes attracted the bulk of new students in the public sector. Between 1977 and 1995 there was a particularly significant increase in enrolments in "other humanities," a subgroup involving, *inter alia*, psychology and history. Social sciences seem to have followed this trend and have now emerged as the leading group. Indeed, the public sector figures for enrolment in administration and economics increased significantly, especially between 1995 and 2006.

Table 2. **The share of student enrolment in public and private universities by field of study, 1997-2006**

	1977[1]		1995		2006	
	Public (%)	Private (%)	Public (%)	Private (%)	Public (%)	Private (%)
Applied and basic sciences	**40.2**	**22.9**	**33.3**	**21.2**	**27.9**	**18.1**
Agricultural and animal sciences	6.6	2.9	3.6	1.0	2.5	0.9
Architecture	6.8	7.2	5.9	5.5	6.4	5.4
Engineering, systems and industry	16.8	6.9	14.3	11.5	13.2	9.4
Exact and natural sciences	4.6	3.2	5.5	0.3	3.0	0.9
Biochemistry, pharmacy and chemistry	5.4	2.7	4.0	2.9	2.8	1.5
Health	**16.0**	**1.0**	**14.6**	**3.3**	**13.5**	**11.5**
Medicine	13.9	1.0	8.0	1.4	4.8	3.1
Dentistry	2.1	n.a	2.6	0.2	1.4	0.8
Veterinary and allied health	n.a.	n.a	4.0	1.7	7.3	7.6
Humanities	**9.5**	**20.6**	**12.3**	**11.0**	**16.6**	**14.5**
Letters, language and philosophy	2.1	4.0	1.4	1.9	3.2	1.5
Education[2]	1.9	4.5	2.2	2.8	3.8	4.0
Arts	1.7	0.7	1.8	0.7	3.4	1.4
Other humanities	3.8	11.4	6.9	5.6	6.2	7.6
Social	**34.3**	**55.5**	**39.8**	**64.5**	**42.0**	**55.9**
Communication, administ. and economics	21.4	27.8	18.8	40.0	23.8	32.0
Law and political sciences	11.9	22.5	15.3	21.3	13.4	20.2
Other social sciences	1.0	5.2	5.7	3.2	4.8	3.7

1. Author's estimations, based on Levy (1986).
2. Author's estimations, given that data for 1977 included students enrolled in non-university institutions.
Source: Based on Levy (1986); SPU (2006); author's own calculations.

Data in relation to enrolments in the **private sector** point to a different pattern. Although in basic and applied science there is a relative decrease between 1977, 1995 and 2006 (figures fell from 22.9% to 21.2% and 18.1%), this drop is not as drastic as the public sector's performance. However, between the public and the private sectors there is a stark contrast in relation to figures for the health sciences. This is an area historically dominated by the state system and the number of students has grown significantly (from 1% in 1977 to 11.5% in 2006).

Again, looking at the private sector figures for the humanities and social sciences as an aggregate group, a fluctuating pattern emerges. One significant change is the drop in the relative enrolment figures in letters, languages and philosophy (these fell from 4.0% to 1.5% between 1977 and 2006). Also, after having initially risen between 1977 and 1995 (basically thanks to communication, economy and administration) figures for the social fields in general dropped slightly, again due to a relative fall in the number of students in these three fields

(figures dropped from 40% in 1995 to 32% in 2006). However, social sciences are still predominant and the private market accounts for over half of enrolments. In any case, although these figures show that private institutions specialise in less onerous niches, when there is a strong demand for more expensive courses, they are ready to establish themselves in "non traditional" markets (*i.e.* health sciences).

Table 3 attests that contrasts between the sectors are less marked than before. It reveals a common pattern in both sectors: a relative decrease in enrolments in basic and applied sciences, whereas for the other sciences, the contrary is true. More specifically, when relative enrolment in one market increases, the other one falls. Therefore, discrepancies between the public and the private sectors have tended to diminish, even in basic and applied sciences (enrolment in public institutions decreased more than it did in its private counterparts).

Table 3. **Student enrolment in public and private universities and university institutes by field of study, 1975-2006**

Science	Public			Private		
	1975	2006	Variation[1]	1975	2006	Variation[1]
Basic and applied (%)	37.7	27.9	–9.8	21.8	18.1	–3.7
Health (%)	17.4	13.5	–3.9	2.3	11.5	9.2
Humanities (%)	11.6	16.6	5.0	15.5	14.5	–1.0
Social (%)	33.3	42.0	8.7	60.5	55.9	–4.6
Total	**481 155**	**1 303 973**		**55 804**	**279 375**	
Percentage	89.6	82.4		10.4	17.6	

1. In percentage points.
Source: Levy (1986); SPU (2006); author's own calculations.

More importantly, these fluctuations have modified the *status quo*, particularly as regards the public sector. For example, following a 9.8 percentage point decrease in relative enrolments, basic and applied sciences no longer dominate the market, whereas the social sciences do. The latter increased 8.7 percentage points between 1975 and 2006 and now account for 42.0% of public enrolment. Health, which ranked third in 1975 (17.4%) is now fourth, trailing the humanities (16.6% in 2006).

In contrast to the substantial changes the public sector has experienced, with the exception of health, changes in the private market have been less striking. The relative decrease in basic and applied sciences is not totally unexpected (it fell by 3.7 percentage points); moreover it follows a trend that is affecting the whole university system. In contrast, and thus more surprising, is the relative drop of enrolments in the social sciences (this fell by 4.6 percentage

points) which was absorbed by the medical sciences (enrolments rose by 9.2 percentage points). Therefore, although social sciences are still in the lead, the gap between the sciences is now less marked.

The theoretical approach

Coercive isomorphism in the private sector, seen from the perspective of supply

Organisations are living entities which react to internal stimuli (*e.g.* governing bodies' decisions) and external stimuli (*e.g.* legal regulations, or elements which are legitimated externally and adopted by the institution). In this context, the theory of new institutionalism (NI) in organisational analysis suggests that market competition does not play a significant role in shaping an entity's structure. In other words, the legitimate structure could be the result of rules and standards defined by governmental regulations (Tolbert and Zucker, 1983). In a highly regulated market, adaptability to the environment is not the product of a voluntary action. Coercive isomorphism, as defined in the NI literature, is to be expected when a ruling entity limits institutional diversity (Hawley, 1968; DiMaggio and Powell, 1991). In this case, organisational structures tend to reflect the rules imposed by central government (Meyer and Rowan, 1977).

In Argentina, the rules that have been imposed by the Ministry of Education on the private sector since its beginnings in 1959 were effective in limiting substantial institutional differentiation. For example, only institutions with strong academic credentials were allowed to offer their services. Second, the Ministry did not permit any new private universities to open their doors between 1973 and 1989. By putting a stop to private growth, inter-sector discrepancies were necessarily limited. Furthermore, when the private market began to expand once again in the early 1990s, the National Commission for University Evaluation and Accreditation (CONEAU) reacted belatedly in relation to regulation and it forced private diversity into another bottleneck. Between 1996 and 2005 it refused to allow over 70 new private university projects to operate as formal institutions.

As a consequence of the central government's strict regulations, the development of ephemeral private institutions which were proliferating at that time in much of Latin America was curtailed. Thus, the private sector was deprived of the opportunity to develop a stronger "demand-absorbing subsystem" and to enhance its activities in the social fields. However, by avoiding a flood of low quality institutions, the central government helped the private sector to legitimise its presence. In reaction, less traditional private options began to develop. Within this restricted and restrictive legal environment, medical schools were more apt at ensuring that their academic packages conformed to

legislation. They also presented educational projects which were more attuned to the rules defined by the CONEAU, and in accordance with the accountability movement imposed by the MoE. Unsurprisingly, organisational change in the private market was fashioned more by coercive isomorphic forces than by market co-ordination.

Consumers' choice in the public sector, seen from the perspective of demand

When "buying" education, students choose programmes in function of their preferences. But the clients' social background not only affects their decision in relation to "how much" education they buy, it also influences the type of curriculum they choose (Le Chapelain, 2008). Furthermore, preferences are situation-dependent, and context affects the client's final choice. Consequently, the decision-making process can be externally influenced (Payne, 1982; Simonson, 1989).

As we have seen above, bodies can modify consumers' behaviour by imposing constraints in relation to supply or by generating incentives to bias a client in favour of certain goods as opposed to others. For example, an admission process, like any regulatory device, can be used to shape students' choices. It can therefore be an effective way to orient candidates towards different academic disciplines. However, if the objective of an institution is to expand entry points without imposing any limitations, and to eliminate all entrance examinations and quotas, the distribution of students will not be defined internally by the institution's administration, but externally, by market conditions. Moreover, if incentives to redirect demand toward under-represented fields are inadequate (for example, scholarships are scarce, as are subsidised loans), market forces will take precedence over political or administrative decisions.

Argentina is a prime example of the way in which the distribution of students in national institutions has primarily been determined by market forces. As of 1984, all public universities have eliminated entry restrictions, quotas and tuition fees. In this environment, where direct costs are free of charge, students determine their academic future without being burdened by economic considerations. This explains why, in a market suffering from a shortage of scholarships to stimulate the demand for private sector jobs with relatively low wages, enrolments in the basic and exact sciences in public institutions has fallen. On the other hand, a marked increase in the number of humanities and social programmes is to be expected. In sum, given that there are no restrictions to limit the expansion of the humanities and social sciences and insufficient stimuli to channel part of the demand toward applied and basic areas, students – who are rational consumers – choose careers that offer, at least in principle, better employment prospects.

The theoretical model and its dynamics

Table 4 summarises the discussion above and, in relation to both demand (*i.e.* from the student body) and supply (*i.e.* the availability of programmes), it lists the main factors that affect the share of students between public and private institutions in Argentina.

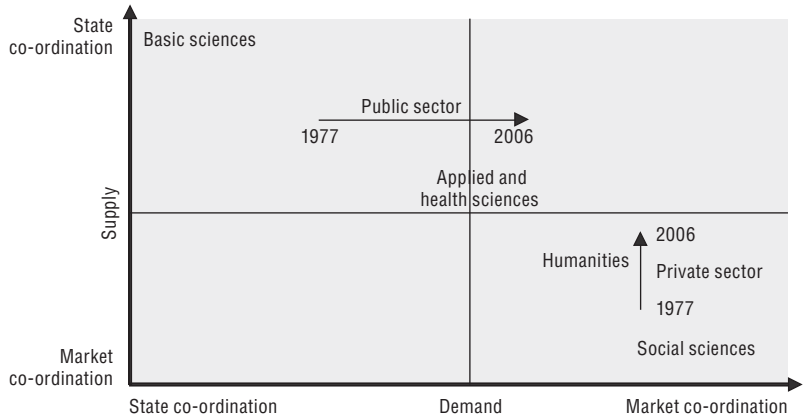
Table 4. **The main factors that determine demand and supply in the university sector**

Sector	Demand	Supply
Public	• Market driven. • Non selective. • Not subject to restricted admission.	• Centrally decided by the state. • Driven by political and social interest. • Priority is given to fields of study with positive social externalities.
Private	• Market driven. • Non selective. • Stimulated by public quality assurance policies.	• Market driven with limitation imposed by the state. • Low initial investments. • Attractive rates on investment.

In relation to demand, both public and private institutions define their strategies in response to market forces. In the public sector, this strategy is the consequence of having no entry restrictions (no tuition fees) as well as a non-selective recruitment policy (as opposed to non-restrictive admission policies or quotas). In the private sector, although some elite institutions define the number of their enrollees according to entrance examination rates, given that tuition and fees account for at least 80% of their total income (Bello *et al.*, 2007), acceptance rates tend to be high. In other words, enrolment in the private sector is also defined by a tacit open admission policy. Furthermore, given the national character of the university market as a whole, no distinction is made between the public and private sectors in terms of the legal recognition of degrees. All diplomas are legalised by the MoE, and all private universities are nationally accredited institutions. So, what was initially a legal restriction has ended up working in favour of private institutions as they emerge as viable alternatives to public universities.

Figure 1 illustrates the interaction between demand and supply in the university market in Argentina between 1977 and 2006. Areas of study are flagged according to the main co-ordinating force (the state or the market) which generates the necessary, albeit sometimes insufficient, conditions to stimulate the growth of that field. For example, from the perspective of **supply** (availability), basic sciences (upper-left hand corner) require state support, given their need for large initial investments. From the perspective of **demand** (enrolment), the state should be actively creating subsidies or scholarships, since there is a relatively low private rate of return in many of the career paths championed by the public sector (*i.e.* mathematics and physics). In the

Figure 1. **Co-ordinating forces, fields of study and student distribution from the perspective of demand and supply, 1977-2006**



right-hand corner of the graph, the market emerges as the main co-ordinating force in the social sciences. Still from the perspective of supply, this is not a costly programme to set up and therefore state aid is not required. In addition, several programmes in the social sciences lead to greater employability, with relatively higher private rates of return (*i.e.* law and administration). Therefore, demand in this science is primarily market driven.

In sum, the narrowing gap between the public and private sectors in terms of field specialisation is largely explained by the effect of demand on the public sector and limited supply in the private sector. Thanks to non-selective and non-restrictive admission policies, demand for public universities has been mainly driven by market forces (as illustrated by the left-to-right arrow in Figure 1). However, supply considerations have had a marked effect on the private sector: coercive isomorphic policies have limited the relative expansion of the social sciences in private universities and this has permitted the health sub-sector to develop (as illustrated by the upward arrow). Consequently, the figure testifies to the fact that the public sector has developed increasingly "private" attributes, and has seen higher enrolment figures in the humanities and social areas, while private universities have not evolved in the same way.

Conclusions

Universities can be regarded as producers of "goods". Some of their characteristics are typical of the public sector (they enjoy a relatively high degree of social benefits), but they also have characteristics which are common to the private sector (its graduates enjoy slightly higher private returns).[5] What the Argentine case illustrates so well is that both sectors

produce both kinds of goods; however, and more importantly, it also demonstrates that the proportion of each type of good can change over time. The longitudinal analysis (Figure 1) shows that public institutions increased the rate of production of private goods (there were more students in the social sciences) to the detriment of public goods (the basic sciences had fewer enrollees). On the other hand, the private sector increased the rate of production of public goods (there were more students in the health sciences, for example), while relative enrolment in social studies decreased. This evolution reinforces the notion that in higher education, a distinction between the public and the private sectors is more a question of ownership rather than the kind of good produced by each sector (Marginson, 2007).

However, when public-private differentiation is studied from the perspective of supply, the findings suggest that discrepancies still exist: the infrastructure which serves to produce public goods is for the most part concentrated in the public sector. Compared to private universities, national institutions still specialise in applied and basic areas. Moreover, data confirm that private universities are only ready to offer study courses in fields for which there is a strong demand. Public-private differentiation in the basic and applied sciences is more likely the consequence of social responsibility (the state is present when there are social externalities) rather than the simple interplay between demand and supply. Therefore, in terms of supply, what contributes to public-private differentiation is the absence of a private alternative, but not the lack of public offer.

On the other hand, the performance of health science confirms the fact that other than provision costs, private universities are ready to offer study programmes when there is a strong demand to justify their investment. The increase in the demand for private medical schools can also be interpreted in three ways (the first two can be categorised as public failures). First, in comparison to public universities, private institutions on the whole offer better-organised study plans, allowing students to finish their degrees within a shorter time frame. Second, there is a perception, founded or unfounded, that the overcrowded and underfunded University of Buenos Aires – an institution that accounts for almost half of all public sector students in medicine – is losing its former prestige. Therefore, for some students, the private market appears to be a viable alternative. Third, highly reputed public schools of medicine (*i.e.* the National University of La Plata and National University of Córdoba) have opted to put a stop to unrestricted admission policies in order to exercise quality control. These factors underline how the impact of administrative mismanagement (poor articulation of courses), a *laissez faire* policy (open admission) and public intervention by limiting access (supply restrictions) can create the right conditions for private institutions to expand beyond their traditional niches.

Lastly, in relation to demand, a strong convergence which weakens public-private differences clearly arises in the humanities and social sciences. As we have seen above, less differentiation is expected in those fields where the market offers graduates high payoffs (*i.e.* psychology and administration), particularly if demand in the public sector is market driven. Consequently, the decline in differences between the public and private sectors over the years can be attributed to the fact that their share of students is determined by a common criterion. This criterion is consumers' choice. In addition, a coercive isomorphic force has pushed the private sector to reproduce public sector behaviour (*i.e.* there has been a rise in enrollees in the health sciences to the detriment of social sciences). In short, the way students have evolved in each sector and within the sciences supports the idea that public-private distinction in terms of student enrolment has become blurred. This is probably as a consequence of public universities repositioning themselves in private waters rather than the opposite, although private institutions are also increasingly present in certain fields which were once "public property." It follows, naturally, that public-private distinction is not as clear as it used to be.

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Notes

1. In this work, the words "public" and "national" are used interchangeably. Except for one provincial university (state), all public universities in Argentina are national institutions (federal).
2. When the Jesuits were expelled from the continent in 1767, the institution was governed by a colonial administration. After the declaration of independence from the Spanish Crown in 1816 it was renamed Provincial University of Córdoba and in 1856 it was nationalised in keeping with the Napoleonic idea of a highly centralised system and according to national standards.
3. Almost 85% of academics in public universities in Argentina have part-time contracts. These faculty members work less than 44 hours per week and in a single institution.

4. The private sector has definitely consolidated its position in terms of supply, as by 2009 58 of Argentina's 106 universities were private. However, from a demand perspective its performance has not been totally convincing. Currently it accounts for 19% of all university students.

5. In economic terms, a public good is non-rival and non-excludable. Non-rivalry means that the consumption of the good does not reduce its availability for others. Non-excludable means that it is not possible to prevent others from using it. A private good is just the opposite. Therefore, a public good has a larger social impact in comparison to a private good.

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Danish universities in the financial crisis: change and trust

by
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Universities have always been important to national economies, but since the financial crisis of 2007-08 they have become key economic actors. Because they supply highly skilled labour and undertake basic research that enable nations to engage in global competition, they are capable of boosting production and innovation.

This article explores the impact of the institutional reform of Danish universities since 2001, notably in relation to research, teaching and innovation. It also discusses how these reforms have affected universities' capacity to stave off the financial crisis. By the time the financial crisis erupted these institutions were strong and independent, which is one reason why – so far – Denmark has fared relatively well compared to other European countries. If its universities are to maintain this position they will need to be continuously reformed, but change needs to go hand-in-hand with greater trust in the reform process by government and politicians.

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Les universités danoises dans la crise financière : changement et confiance

par
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Les universités ont toujours été importantes pour l'économie nationale; toutefois, depuis la crise financière de 2007-08, elles sont devenues des acteurs économiques clés. Elles fournissent des compétences pointues utilisables sur le marché du travail et aussi par la recherche, offrant ainsi à chaque pays les instruments nécessaires pour faire face à la concurrence mondiale et encourager la production et l'innovation.

Cet article analyse l'impact de la réforme institutionnelle des universités danoises depuis 2001, notamment dans les domaines de la recherche, de l'enseignement et de l'innovation. Il explique également comment ces réformes ont affecté la capacité des universités à surmonter la crise financière. En effet, lorsque la crise financière frappa, les universités danoises étaient des institutions fortement indépendantes, ce qui constitue l'une des raisons pour lesquelles le Danemark a su échapper, jusqu'ici, aux retombées de la crise contrairement aux autres pays européens. Pour maintenir les universités danoises dans cet état, elles doivent être constamment réformées, mais ces changements doivent aller de pair avec une meilleure confiance de la part du gouvernement et des hommes politiques dans le processus de réforme.

The changing role of universities

The importance of universities in relation to national development and innovation has always been evident, although they have played a less than key role in everyday politics and have hardly been prioritised in political agendas. Since the 1990s their role has been changing and, progressively, universities have found themselves more and more in the limelight because of their potential contribution to national development and innovation. Their importance in the political arena has also grown. University policy has become centre stage politics, and this in turn has generated increased attention to universities' spheres of action.

With the financial crisis it became evident that certain elements contribute more to a country's resilience than others. Both the ability of private enterprises, for example, to adapt themselves to change and the educational level of a nation's workforce are critical and depend upon its universities' performance.

One of the main characteristics that universities – as institutions – share is that all change takes time – a lot of time. Take educational programmes, for example. Between the moment when an idea for a new study field or programme emerges and when the first students on that programme graduate, it takes at least five years, if not seven to ten. Change is even slower in new research areas. First of all the idea for new research has to mature, then often others need to back the idea. The instigators need to attract funding; conduct experiments; test repeatedly; write articles; have them accepted, peer reviewed and published in journals; and finally have the research results translated into commercially viable products. This process can take 10, 15, 20 or 50 years and generally it is not until the end of this period that one can be sure whether or not the investment has paid off. On top of this, much of university research does not even attempt to be commercially viable.

The fact that universities have become centre stage politics therefore leads to a major challenge. In general, politicians want to see the results of political initiatives and investments rapidly and preferably within an election period. How does one reconcile these needs with the fact that innovative wheels turn slowly? This challenge is particularly acute when it comes to developing universities (and public universities in particular): on the one hand politicians are racing for results; on the other hand, successful reform needs continuity over a relatively long period. Hence, reformers need both trust and time.

Something else that universities have in common is that reform should be ongoing. Universities need to be at the forefront of research, education and innovation and should therefore have strong institutional frameworks if they want figure among the world's elite in their fields. A university which does not renew itself constantly will cease to be ahead of others.

The second major challenge is therefore for stakeholders to keep developing structures and fields while maintaining trust in the long-term changes that have been made.

It becomes evident that in relation to the role of universities in overcoming a financial crisis, their strength will not come from changes or reforms made when a crisis has set in, but from reforms made prior to the crisis. Only universities that are strong when a crisis sets in can help the country as a whole to resist the crisis.

Major reforms implemented since 2001

Danish universities have undergone major reforms since the current government took office in 2001, as one of its goals was to create better links between education, research and innovation. These are the most far-reaching reforms implemented since the University of Copenhagen – Denmark's first university – was founded in 1479.

In 2001 Denmark counted 12 universities – all of which were public – and 25 government research institutions (GRIs). Several laws regulated the universities, most had elected leadership. There are currently eight universities and four GRIs. The universities are regulated by the 2003 University Act and their institutional structures include boards with a majority of external members and appointed leaders at all management levels. For an overview of Danish universities, see Annex I.

The reforms were introduced in two rounds. First, in 2003 the University Act reformed universities' internal governance structures. Second, in 2007 universities were merged with other universities and/or with government research institutions. This consolidation fundamentally changed the higher education institutional landscape. In the following sections of this paper the two reforms will be described in more detail.

Governance reform in 2003: building strong independent institutions

On 11 October 2002, a political settlement on a new university act was made by a parliamentary majority. This political agreement was accompanied by an explanatory memorandum called "Time for Change for Denmark's Universities". The reform aimed to establish strong independent institutions capable of meeting the demands of the internationalised university

environment. The act was passed by Parliament on 28 May 2003; its primary objective was to enhance research, education and knowledge exchange by strengthening the universities' institutional framework.

Self-governing bodies: state-run institutions, but run from afar

Changes to universities' institutional framework aimed to increase their ability to make strategic priorities as well as strengthen their decision-making powers. The new framework maintained an academic governing body and enabled universities to remain independent of special interests.

The 2003 University Act transformed universities' status from that of government institutions to independent institutions under public-sector administration. The self-governing structure was designed to create a distance between the Danish state and national universities although the latter are still required to comply with common public-sector requirements. One consequence of being self-governing is that these institutions do not form part of the public-sector hierarchy and they are not subject to instructions from the Minister for Science, Technology and Innovation.

Danish universities are obliged to operate within the framework set out in the act. For example, they are still – to a large extent – subject to the rules applying to government institutions (staff issues, financial disposal rules, accounting regulations, etc.). Furthermore, in a number of areas, a set of rules governs issues pertaining to the universities' academic activities. The act thus regulates a university's capacity to govern itself; the extent and scope of this autonomy can be changed pursuant to amendments made to the act.

The self-governing structure means that universities fall within the public-law domain. They are, however, legal entities which have procedural capacity, *i.e.* they have rights and obligations and can institute proceedings before a court of law against, for example, the Danish state, to settle a dispute.

Denmark's eight universities are protected against competition for state funding from foreign institutions as well as private national universities. A law was passed in spring 2010 prohibiting such institutions from opening without passing a certified quality assessment and they are not, for example, able to offer study programmes with public funding.

Unified and competent management

The University Act lays down a precise framework for universities' management structure and is designed, among other things, to help ensure the quality of university activities. It regulates the authorisation of decision-making capacity, including at sub-executive management levels.

The board: serving the institution and society

The highest university authority is the board. Its mission is to safeguard the university's interests as an educational and research institution and provide guidelines for its organisation, long-term activities and development. The tasks of the board comprise, among other things, approving the university's budget and accounts. Approximately every third year it signs a development contract with the Minister for Science, Technology and Innovation; this contract is based on indicators and describes the university's goals over the coming years. The board also appoints and dismisses the rector.

The board comprises a majority of external members, *i.e.* persons who are neither employed at the university nor students. Its chair is elected among its external members. Internal members of the board must be elected by, and among, the academic staff, which includes PhD students, technical and administrative staff and students.

External members are elected on merit and in function of their personal qualifications. New board members are identified and appointed by the board itself or, in the case of certain universities, through a procedure involving a wider section of university staff. In no circumstances does the Danish state have any influence over the composition of the board. Furthermore, a recent revision of the University Act will ensure that all universities will make such appointments through an even wider consultative process (the revised act was proposed to Parliament in February 2011).

The purpose of having boards with a majority of external members who are empowered to co-opt was to ensure close relations between universities and civil society; at the same time, it also ensures a certain distance in relation to the Danish state.

Day-to-day management: quality and structure

As mentioned above, rectors are appointed by the board; their main tasks are set out in the University Act. The rector assures the day-to-day management of the university and makes recommendations to the board in relation to appointing and dismissing other members of the university's executive management. The act also stipulates who is responsible for appointing the university's other management teams as well as the division of tasks between the different levels of management.

During the appointment procedure, care is taken to ensure that managers have both academic and managerial legitimacy. Thus, as was the case before the implementation of the act, only recognised researchers are appointed to university management positions. The rector, deans, heads of departments and heads of PhD schools must also be recognised researchers.

One of the goals of the act is to ensure high quality educational institutions. This explains why the management structure is bound by detailed regulations, as well as the fact that management must be composed of recognised researchers. When they were introduced in 2003, the provisions also supported the implementation of the new management structure as described above.

The amendment to the University Act that was tabled in February 2011 contains a proposal to simplify the regulation of university management structures. According to this amendment, the university itself would be able to define its management structure through its internal regulations and all decision-making powers would be delegated by the rector. However, all academic leaders would still need to be recognised researchers.

Deregulation

One of the main objectives of the political settlement on the University Act was to ease the rules which regulated the sector. An appendix to the settlement listed ten fields in which the universities were to develop greater autonomy. The ten fields covered a wide range of issues including staff regulations; procedures in relation to the appropriation of public funding; the regulations governing universities' tech-trans activities; and education regulations.

By the summer of 2007, deregulation in relation to nine out of the ten areas had been implemented. But universities reopened the debate by demanding even further autonomy. A working group was therefore set up: it was chaired by the Ministry of Science, Technology and Innovation and included the chairs of the Association of Danish University Chairs as well as the chair of the Association of Danish University Rectors. The group was asked to identify further fields where more autonomy could be given to universities. This initiative resulted in another ten proposals, mostly within the area of financial governance and staff regulations. By 2010, eight out of the ten proposals had been implemented.

The 2007 mergers: strengthening the structural landscape

The government's political programme of 2001 was inspired by a major report produced that year by the Research Commission, which was mandated by parliament to analyse the legal and structural framework underpinning Danish research. The outcome of its work was a proposal for a new strategy to guide the future development of the sector. A focal point of the strategy was the relationship between GRIs and universities, and the Commission recommended establishing partnerships among institutions in the fields of research and education.

One of the government's political priorities was to enhance the overall structure of Danish research institutions and to shift funds from the GRIs to independent research undertaken in universities. In preparation for this move,

the government asked the Danish Council for Research Policy, which advises the Minister for Science, Technology and Innovation on research policy, to conduct a study on the role of the government research institution sector.

At that time, government research institutions were regulated by the Act on Government Research Institutions. In 2002, the Danish Council for Research Policy examined their fields of activity in order to rationalise their research efforts. On the basis of the Council's recommendations, the government reduced the number of GRIs from 25 to 15, essentially by merging a number of them with universities.

Over 2003-04, the OECD Education Committee conducted an evaluation of the Danish university sector and recommended a number of initiatives, some of which focused on the institutional structures of research institutions. The Committee recommended, for example, that the sector should:

- Concentrate public research spending on fewer institutions.
- Gain synergy effects within research and education by consolidating universities in fewer, larger units and integrating single-faculty universities with larger multi-faculty institutions.
- Merge more GRIs with universities, while retaining their operations organisationally separate.

The government's new political programme of 2005 echoed these recommendations and focused on the need for strong national research institutions. The idea was that by concentrating education and research activities in fewer institutions or by establishing consortiums, this would enhance the international competitiveness of Danish research and education.

In 2006, the government launched a comprehensive globalisation strategy to prepare for Denmark's future role in the global economy. This strategy was the result of a wide-reaching process throughout 2005 which incorporated many sectors of society. The process was led by the Globalisation Council which was chaired by the then Prime Minister Anders Fogh Rasmussen. The Globalisation Council comprised members of the government and representatives of important sectors of society across traditional divides: employers with trade unions, and representatives of the major educational and research fields with private enterprises. Its prime mission was to advise the government.

The globalisation strategy followed the recommendations of the Globalisation Council. The plan was described in the government publication *Progress, Innovation and Cohesion: Strategy for Denmark in the Global Economy*. This lists 350 specific initiatives which together amount to extensive reforms in relation to education and training programmes and in the fields of research and entrepreneurship, as well as substantial improvements in the framework conditions for growth and innovation in all areas of society.

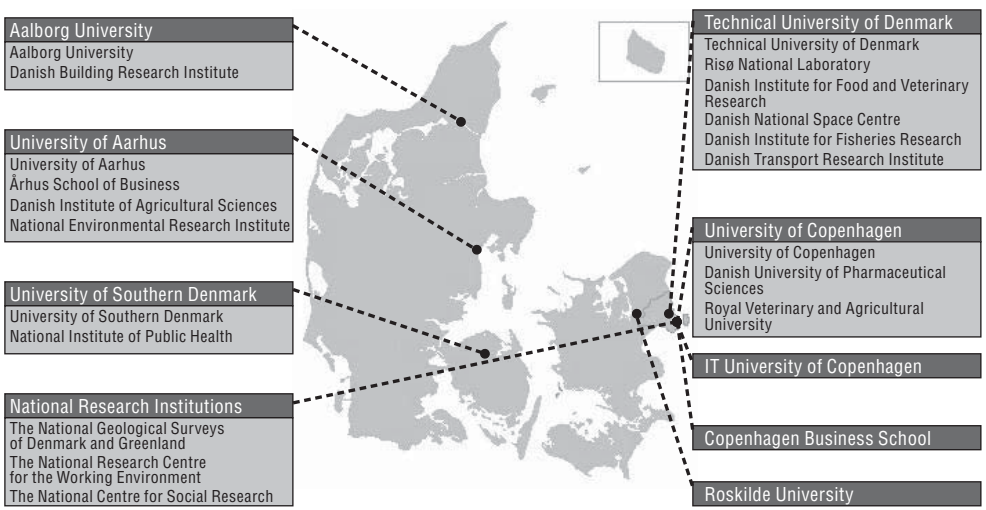
One initiative embodied in the globalisation strategy was to merge GRIs with universities; this aimed to ensure close links between public research and educational activities in universities. More specifically, it aimed not only to make sure that research carried out in GRIs would support the education of graduates and PhDs, but also – by consolidating these institutions – to better enhance the international impact of Danish research.

As part of the process of merging GRIs with universities, the government decided to review the overall structure of the university sector. In the years preceding the government's decision to carry through the fore-mentioned comprehensive mergers in 2007, a number of different models for university mergers had been tabled by different parties and discussed publicly.

The government did not propose a guiding model or "master plan" ahead of the merger negotiations but issued three guidelines for the process. First, institutions should remain intact throughout the merger process and not be divided into smaller units or be divided among different institutions. Second, all merged institutions should have a unified management structure. Third, institutional mergers should not automatically entail geographical or physical mergers.

On the basis of the merger process, as well as institutions' responses and views on potential mergers, on 4 October 2006 the government decided to implement a new university structure. On 1 January 2007 a total of 25 GRIs and universities were merged, forming eight universities, three national research institutions (Figure 1) and one government research institution, the Kennedy Centre, whose future affiliation is still undecided.

Figure 1. **Danish universities, 2007**



Source: Danish University and Property Agency (2009).

Denmark now has three large universities (University of Copenhagen, Aarhus University and Technical University of Denmark), four medium-sized ones (University of Southern Denmark, Aalborg University, Roskilde University and Copenhagen Business School) and a single small university (IT University). In all, nine GRIs were incorporated into universities.

University of Copenhagen was formed by amalgamating the University of Copenhagen, the Danish University of Pharmaceutical Sciences and the Royal Veterinary and Agricultural University.

Aarhus University was formed by amalgamating Aarhus University, Aarhus School of Business, the Danish University of Education, the Danish Institute of Agricultural Sciences and the National Environmental Research Institute.[1]

Technical University of Denmark was formed by amalgamating the Technical University of Denmark and five GRIs: Risoe National Laboratory, the Danish Institute for Food and Veterinary Research, the Danish Institute for Fisheries Research, the Danish National Space Centre and the Danish Transport Research Institute.

GRIs were integrated into universities in the form of faculties, departments or professional units. New boards were appointed in universities where the mergers significantly modified professional profiles or task structures and at several universities new management structures were introduced concurrently with the mergers.

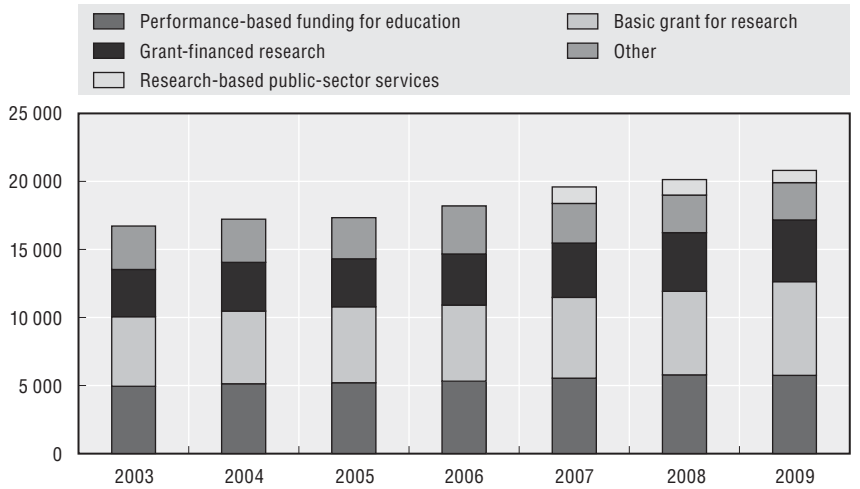
The National Institute of Public Health was merged with the University of Southern Denmark. The Danish Building Research Institute was merged with Aalborg University. Roskilde University, Copenhagen Business School and the IT University remained unaltered.

The National Geological Surveys of Denmark and Greenland remained a government research institution and this decision was formalised in a subsequent Act. The National Research Centre for the Working Environment and the National Centre for Social Research remained GRIs under the Act of Government Research Institutions. Both institutions were reorganised; they were also given new names and new boards that reflected the institutions' network-based culture and their close collaboration with universities. One institution, the Kennedy Centre, remained unaffected. Its future affiliation is still undecided.

Increased public investment

University reform was followed by a considerable increase in public funding for universities. The total turnover increased from DKK 16.7 billion in 2003 to DKK 20.8 billion in 2009, which corresponds to an increase of 24% (Figure 2).

Figure 2. **The increase in university turnover, 2003-09**
(DKK billion in 2009 prices)



Note: Research-based public-sector services are included as of 2007 when these activities were handed over to universities. The figure shows the amount of "grant-financed research" as the universities' annual consumption. This consumption has been estimated for 2009.

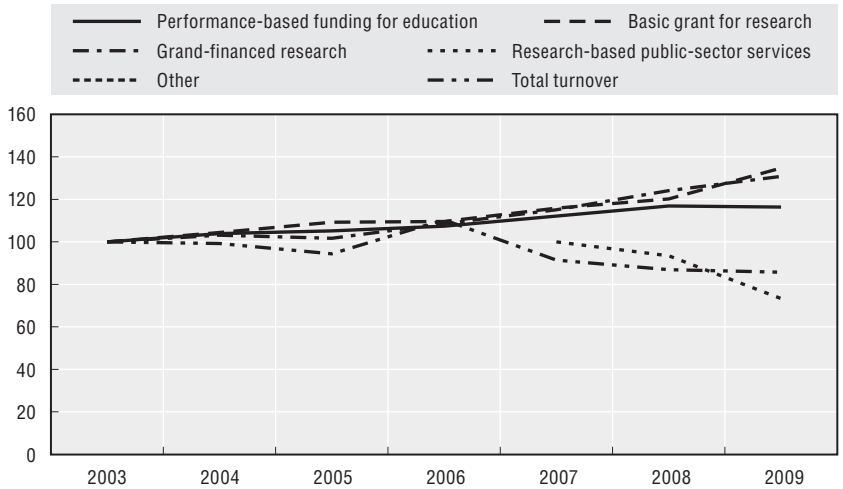
Source: Danish Appropriations Act 2009, pp. 76-77.

Several key factors contributed to the increase in funding. These were the introduction of research-based public-sector services following the merger of nine government research institutions in 2007; increases in the basic grants to universities; and increases in consumption of competitive grant-financed research (Figure 3).

Universities' basic grants for research and the consumption of grant-financed research have increased by 35% and 31% respectively. The fact that nine government research institutions were merged with universities and that research-based public-sector services became university activities increased the universities' turnover by some DKK 1.2 billion (approximately EUR 161 million).

It should be noted that the figures for grant-financed research tend to underrate the increase. The curve in Figure 3 illustrates the consumption of grant-financed research and not the actual granted appropriations. The impact of an increase in appropriations on the turnover will not be visible for some time to come.

Figure 3. **Development in university turnover, 2003-09**
(2003 = 100[1])



Note: There is notable shift in research-based public-sector services and basic grant for research between 2008 and 2009. This is due to the fact that the Ministry of Science, Technology and Innovation transferred its grant for research-based public-sector services, previously allocated to Risø and the Space Centre, to the Technical University of Denmark (DTU). It was therefore added to the DTU's basic grant for research, which represented a total increase of DKK 305 million.
1. Research-based public-sector services: index 2007 = 100.

Source: Danish Appropriations Act 2009, pp. 76-77.

Are the reforms working?

By 2009 it was decided to undertake an independent evaluation on the recent reforms and assess the development of universities' level of autonomy. A parliamentary resolution paved the way for an independent international evaluation and a panel was appointed by the Danish Minister for Science, Technology and Innovation. The panel conducted an evaluation of five themes in relation to the recent reforms (Danish University Evaluation Panel, 2009).

The framework for the evaluation was specified in the Terms of Reference and the Preamble set out the aims of the reforms: "The aim of the reforms in the university area was to provide universities with an enhanced capacity for strategic prioritization across their core areas of activity: education, research, and knowledge transfer, as well as with an enhanced ability to meet demands of society." (Danish Minister for Science, Technology and Innovation, 2008)

It was also stated in the Terms of Reference that "the creation, through the reform of 2003, of a clear and transparent management structure including appointed leaders and government boards with a majority of members from outside the university, forms the basis for the evaluation."

As laid out in the Terms of Reference, the five areas that the evaluation was to cover were:

- Achievement of the aims of the merger of universities and government research institutions in 2007.
- Co-determination for employees and students.
- Free academic debate.
- Research freedom.
- Levels of autonomy.

The evaluation panel consisted of:

- Dr. Agneta Bladh, Rector, Kalmar University (Chair).
- Professor Georg Winckler, Rector, University of Vienna.
- Dr. Abrar Hasan, independent advisor.
- Professor Elaine El-Khawas, George Washington University.
- Professor Peter Maassen, Oslo University.

The background material that was prepared for the evaluation panel consisted of consultancy reports based on surveys and interviews with staff and students at the universities; statements by universities, government research institutions, ministries and other stakeholders; and factual papers from the Ministry of Science, Technology and Innovation. In all, more than 2 000 pages were handed over to the evaluation panel.[2] Once the background material was compiled, in August 2009 the panel visited each university and met with stakeholders.

Conclusions of the evaluation report

The evaluation report was published on 3 December 2009 and is available in English.[3]

In the evaluation report, the panel developed a key question which they considered underpins the overall reform efforts in relation to Danish universities: "How to provide appropriate levels of institutional autonomy and, at the same time, complement institutional autonomy with an accountability regime that satisfies the public interest without becoming a constraint on universities' responsiveness and innovation?" (Danish University Evaluation Panel, 2009, p. 18).

This paper focuses on the institutional changes to the regulations governing Danish universities which were enacted in 2003 and the overall changes which affected the institutional landscape in 2007. Therefore, only the panel's recommendations on **autonomy** and **mergers** are included here; for full details of the panel's assessments please see the Evaluation Report.

Overall, the panel concluded that the 2003 University Act has helped to make Danish universities more dynamic thanks to their newly gained autonomy. The Act has therefore contributed to strengthen universities as global players: "The Act is generally welcomed and, by and large, the stakeholders view the 2003 Act as a big step forward in strengthening the universities' autonomous status and providing room for flexibility and innovation." (Danish University Evaluation Panel, 2009, p. 28.)

Although, overall, the panel approved the aims and the framework specified by the University Act, it also recommended that work towards the goal of deregulating the university sector should continue. The panel considered that the act has been followed by too many rules and regulations that are now undermining universities' efforts to achieve their strategic priorities. It therefore recommended that a high-trust strategy be implemented in order to bring about further autonomy for universities. The latter should also show themselves worthy of this trust by being accountable – to a large extent – for their strategic choices.

In respect to mergers, the panel hesitated to draw conclusions as the decision to merge facilities was made only three years prior to the evaluation. "Nonetheless, the Panel has got the clear impression that at most universities the merger processes have acted in certain ways as change drivers. This concerns in the first place changes at those universities that have been involved in mergers." (Danish University Evaluation Panel, 2009, p. 46.) The panel advocated giving universities time to settle and finalise the mergers, but also recommended that further discussions on the Danish research landscape in general continue so that the universities in question could develop even more distinct profiles.

Conclusion

Danish universities have undergone far-reaching reforms since 2001. These have changed the universities' internal governance practices and the entire public-research landscape. The reforms have been followed by a substantial increase in government funding to universities.

The reforms aimed to create stronger universities which would flourish despite ever-increasing global competition between universities; the second major goal was that they should be in a position to act as drivers of development in Denmark with regard to innovation.

The Danish university evaluation report of 2009 concluded that the reforms have been instrumental in making Danish universities stronger and more dynamic; this in turn has been important in staving off the financial crisis. Although the report also concluded that there are still important

changes to be made in the Danish university sector, such as slackening government regulation even further, much has already been achieved in a short space of time.

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Notes

1. The Danish University of Education was merged with the University of Aarhus as of 1 June 2007.
2. All background material is available in English on *www.ubst.dk/institutioner-og-okonomi/universitetsevalueringen-i-2009/baggrundsmateriale*.
3. See: *www.ubst.dk/en/universities-in-denmark/university-evaluation-2009*.

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ANNEX I

Fact sheet on Danish universities

This fact sheet gives an overview of Danish universities in generally comparable figures.

Table 1. **Key figures**

University education	2004	2005	2006	2007	2008	2009
Intake	19 314	20 060	19 893	21 185	19 121	19 183
Completion	Hum	Social	Natural	Technical	Health	Total
Distribution % (2007)	33%	42%	13%	6%	6%	100%
Internationalisation	2002	2003	2004	2005	2006	2007
Danish students studying abroad	3 399	3 455	3 506	3 436	3 504	–
Foreign students in Denmark	3 629	3 913	4 357	4 442	4 541	–
PhD	2005	2006	2007	2008	2009	2010
Intake	1 352	1 451	1 792	2 063	2 236	2 423
Research Resources	2003	2006	2007	2008	2009	
Public R&D of GDP	0.78%	0.77%	0.83%	0.89%	0.94%	
Private R&D of GDP	1.78%	1.65%				

Source: VTU Key Figures, March 2009.

Table 2. **University turnover and the number of bachelor, master and PhD students**

Name	Turnover in MDKK	Bachelor	Master	PhD	Total number of students
Aalborg University	2 177	6 868	4 184	706	11 253
Aarhus University	6 057	15 197	15 009	1 574	30 414
Technical University of Denmark	4 026	6 441	6 761	192	13 202
Copenhagen Business School	1 209	4 040	2 520	1 004	6 560
IT University of Copenhagen	231	190	878	48	1 068
University of Copenhagen	7 346	21 489	16 521	2 476	38 010
Roskilde University	765	3 885	3 217	296	7 102
University of Southern Denmark	2 509	9 394	5 418	724	14 812
TOTAL		67 504	54 508	7 020	122 421

Source: Danish Appropriations Act 2011, *www.oes-cs.dk/olapdatabase/finanslov/index.cgi*, and Universities Denmark: University Statistics 2009, *http://dkuni.dk/politik_debat/statistik/testside/*.

Table 3. **The number of university employees, staff and faculty members (full-time equivalents)**

University	Total	Faculty	Staff
Aalborg University	2 281	1 244.7	1 036.3
Aarhus University	6 428.5	3 091.7	3 336.8
Technical University of Denmark	1 214.3	569.1	645.2
Copenhagen Business School	4 182	2 004.8	2 177.2
IT University of Copenhagen	149.1	69.5	79.6
University of Copenhagen	8 069.2	3 806.8	4 262.4
Roskilde University	865.4	482.2	383.2
University of Southern Denmark	2 794.5	1 379.4	1 415.1

Source: Negotiating Database, Danish Ministry of Finance, 2nd quarter 2008.

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Quality assured assessment processes: evaluating staff response to change

by
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Medical education is not exempt from the increasing societal expectations of accountability and this is evidenced by an increasing number of litigation cases by students who are dissatisfied with their assessment. The time and monetary costs of student appeals makes it imperative that medical schools adopt robust quality assured assessment processes. The success of these processes depends on the ability of faculty to determine the necessary changes required and manage the change process. Openness to change is critical; therefore, identifying the processes that facilitate staff openness constitutes an important step in better understanding how higher education institutions can ensure that staff members are willing to support and engage in change initiatives. This paper examines the contribution of the three attributes of the change model (content, process and context) in relation to staff openness to the quality assurance processes of assessment changes that were implemented at the University of Tasmania's School of Medicine.

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Évaluation de la réponse des personnels au changement des processus d'assurance qualité : une étude de cas

par

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L'enseignement médical n'est pas épargné par l'augmentation des attentes sociétales en matière de responsabilité et ceci est mis en évidence par l'augmentation des cas de litiges avec des étudiants mécontents de leur évaluation. Le coût en temps et en argent de ces contestations nécessite que les écoles médicales adoptent de solides processus d'évaluation de la qualité. Le succès de ces processus dépend de la capacité du corps enseignant à définir les changements nécessaires et à gérer le processus de changement. L'ouverture au changement est cruciale ; c'est pourquoi l'identification des processus qui facilitent un état d'esprit ouvert de la part des personnels constitue une étape importante pour mieux comprendre comment les institutions d'enseignement supérieur peuvent faire en sorte que leur personnel soit disposé à soutenir les initiatives de changement. Cet article examine la contribution des trois attributs du modèle de changement (contenu, contexte et processus) en relation avec l'ouverture d'esprit du personnel vis-à-vis des changements des processus d'assurance qualité mis en place à l'Université de Tasmanie, École de Médecine (TSoM).

Introduction

Medical education is increasingly being subjected to evaluation and internal monitoring processes are vital to the ongoing improvement of the education provided by institutions. Over the past decade, the university sector has seen considerable change and increased accountability for its activities, simultaneously. Medical schools are having to acknowledge the implementation of new curricula, the consequences of new health service priorities and an increase in the number of medical students (Norcini *et al.*, 2008).

Many people have an interest in the quality of medical education. Students have the right to as good an education as possible, and the public has the right to well-educated and well-trained general physicians and specialists (Vroeijenstijn, 1995). Therefore, a medical school or faculty must ensure its quality and be accountable for the caliber of the training it provides. Quality depends not only on measurement instruments and tools but also on the spread of quality awareness among faculty, staff and students. Therefore, in order to safeguard excellence, institutions need a well-designed quality assessment tool (Vroeijenstijn, 1995). Furthermore, the best way to ensure quality is by paying continuous attention to the design and administration of assessment items, based on two pillars: a system of internal quality control and external assessment by peers (Hays, 2008). For an assessment process to be successful, it is critical that educators play an active role in both the development and administration of assessment programmes in order to gauge whether learning has occurred or not and to determine the necessary changes for improved learning (Ramsden, 2003). Improper management of the change process can cause resistance to innovative assessment practices. To minimise this occurrence, evaluation and monitoring of the change process is essential.

The successful management of change is accepted as a necessity in order to survive and succeed in today's highly competitive and continuously evolving environment (Self *et al.*, 2007). However, Balogun and Hailey (cited in Todnem, 2005) reported a failure rate of around 70% of initiated change programmes, because of the non-consideration of a key element of the change process: openness of employees towards the change. Beer and Nohria (2000) stated that the poor success rate of change programmes is due to a lack of a valid framework detailing how to implement and manage change. An effective framework for categorising organisational change variables consists of three factors, namely content, process and context (Armenakis and Bedeian, 1999).

Although organisational science researchers acknowledge the importance of all three variables, there is insufficient empirical evidence of these variables being assessed simultaneously in organisational change efforts (Self *et al.*, 2007). This dearth of empirical evidence is a crucial knowledge vacuum that needs addressing to support the understanding of organisational change.

In 2009, the University of Tasmania, School of Medicine (TSoM) undertook major reforms of the Bachelor of Medicine, Bachelor of Surgery (MBBS) programme in terms of content, delivery and duration. These reforms included extensive, comprehensive and procedural changes to assessment processes. These changes then needed to be evaluated to quantify how well the reforms had achieved, or failed to achieve, their intended outcomes. Due to the centrality of content, process and context to the success or failure of change, the study on which this paper is based investigated the implementation and management of change in the assessment processes at TSoM. Its objective was to examine the influence of the three major attributes of change (content, process and context) on staff openness towards the newly implemented quality assurance processes for assessment.

This paper starts by analysing the evaluation and improvement of quality in medical education. It goes on to look at change management models, contextual factors of change and methods for implementing change efforts. It concludes by discussing the global change environment and implications for practitioners.

Evaluation and improvement of quality in medical education

Medical education is a complex combination of systematic teaching and learning activities within a professional environment where unplanned learning is an important objective part of clinical learning (McCoubrie, 2007). Curriculum should be designed so that teaching and learning activities and assessment tasks are co-ordinated with the intended learning outcomes (ILOs) (Fraser and Bosanquet, 2006). Biggs (2003) refers to this process as "constructive alignment". "Constructive" refers to the type of learning and what the learner does, while "alignment" refers to what the teacher does. The connection between teaching, assessment and learning outcomes helps to make the overall learning experience more transparent (Adam, 2006). Medical schools should have in place an identified group of individuals with expertise and interest in medical education who are responsible for the overall curriculum implementation and student assessment (Smith and Dollase, 1999).

Quality in medical education results from a co-ordinated effort to ensure relevance and efficiency in the education of future doctors and to ensure that these doctors match society's needs optimally (Boelen, 1995). Implicit in the notion of quality is a special consideration for social accountability. Indicators

are therefore expected not only on educational content and process and availability and use of resources, but also on how medical schools implement their social and health mission. Central to both accountability and quality assurance is assessment. It offers a means of identifying those whose overall performance is well below standard and identifying areas of weakness, thereby helping to drive the continuous quality improvement process.

Assessment is an integral part of curriculum development, delivery and evaluation, needing both "backroom" science to develop the most appropriate assessment programmes and a group of subject specialists to make any necessary judgments (Hays, 2008, p. 24). What and how students learn depends largely on what and how they think they will be assessed. Assessment practices must send the right signals to students about what and how they should be learning. More often than not, wrong signals are sent to students; therefore, it is important to examine the purposes of assessment, the relation between assessment and the assumed nature of what is being assessed and who might usefully be involved in the process. The underlying principle is that assessment tasks should comprise an authentic representation of the course's intended learning outcomes. There has been increasing awareness that assessments in medical education should demonstrate a high degree of construct validity (Downing, 2003). To assist in this process, a set of best practice guidelines has been developed by an international group of experts in assessment outlining the principles and steps required to ensure that procedures are defensible to both internal and external scrutiny (Newble *et al.*, 1994). Major areas for consideration by an examination/assessment committee are: blueprinting to ensure content validity; selection of best test formats; applying strategies to achieve adequate levels of reliability; and instituting appropriate standard-setting and decision-making procedures.

These developments have helped to fuel the creation of several new methods of assessment and to increase the use of those already available. The increase in the number of methods and the enhanced sophistication of assessment overall has been motivated by public pressure for accountability and quality improvement. This has been accompanied by curricular changes in the form of outcomes-based education and supported by improvements in technology and psychometrics. All improvement requires change. However, change in medical education should be driven by improvement evidence and not by social or political fashion (McCoubrie, 2007). Quality assurance of assessment practices in medical education involves changes in processes and people's behaviour. Faculty development reinforces the importance of assessment and provides medical educators the opportunity to develop common standards for performance. The development of assessment that supports learning in medical education requires both qualified and skilled educators who understand assessment methodology, what needs to be

assessed and how to judge the performance of students. To achieve this goal, current assessment practices need to be reviewed, changed according to needs and the change process managed effectively.

Change management models

According to Burnes (2004), change is an ever-present feature of organisational life, both at the operational and strategic level. Therefore, in any organisation, there should be no doubt of its ability to identify where it needs to be in the future, and how to manage the changes required. Consequently, organisational change cannot be separated from organisational strategy, or *vice versa* (Burnes, 2004; Rieley and Clarkson, 2001). Due to the importance of change, its management is becoming a highly required managerial skill (Senior, 2002). Change management as defined by Moran and Brightman (2001, p. 111) is "the process of continually renewing an organisation's direction, structure, and capabilities to serve the ever-changing needs of external and internal customers".

The high failure rate of change projects has led some researchers to conclude that factors other than organisational- and system-level variables are equally important in establishing successful change. As an approach, some researchers have adopted a more micro-level perspective on change by examining individuals within organisations and the psychological factors influencing change efforts (Kavanagh and Ashkanasy, 2006; Vakola *et al.*, 2004; Wanberg and Banas, 2000). Kavanagh and Ashkanasy (2006) asserted that changes in structures, hierarchy, reward systems and technology are mediated through individual change. One plausible explanation for the poor results in organisational change efforts may be that change leaders/change agents and researchers are inattentive to some of the human variables that are important during organisational change efforts.

Armenakis and Bedeian (1999) provided an effective theoretical framework based on three factors (content, process and context) that can shape employees' reactions to change efforts. Although researchers have widely acknowledged the importance of all three factors, they have rarely considered them simultaneously as they relate to organisational change. Most researchers have examined the impact of only one of these factors on openness to change (Armenakis and Harris, 2002; Bommer *et al.*, 2005; Oreg, 2006; Wanberg and Banas, 2000). However, to gain a comprehensive understanding of organisational change, it is essential to know the conditions related to all three factors.

The content, process and contextual factors of change

Content factors relate to the "what" of a change initiative. Various content models have been applied to organisational change efforts (Cunningham, 2006) and they include changes in structure, human resource practices, technology,

total quality management, social issues and physical settings. The reaction of employees to change is influenced by how a specific change has affected their day-to-day lives. This notion is supported by Piderit's (2000) argument that individuals often exhibit resistance because of the anticipated impact that change will have on them personally, rather than resisting the change itself.

Process factors relate to the "how" of a change initiative, that is, the specific methods utilised to implement a change. The process model encompasses the unfreezing, moving and freezing phases through which successful organisational changes progress (Robbins *et al.*, 2004). It underlines that the way in which change agents introduce change will certainly affect the reaction of the employees to these changes. The strategies and tactics that are applicable for justifying an organisational change (before, during and after implementation) include, but are not limited to, persuasive communication (executive briefings and newsletters), active participation (activities capitalising on self-discovery) and various forms of symbolism (rites and ceremonies) (Quinn, 2004).

More substantive forms of participation in the change process tend to be associated with higher commitment (Armenakis and Harris, 2002) and employee involvement in decision making in particular tends to lead to employee acceptance or openness to change (Wanberg and Banas, 2000). Thus, if an organisational change is perceived by employees as justified, acceptance of the change is more probable.

The context variable relates to the "why", "when" and "where" of a change initiative and it is concerned with the areas of transformation. Substantive contextual factors may explain why a change initiative is not successful (Johns, 2001; 2006), independent of the content of the change. Several researchers have indicated that the culture and climate of organisations are decisive in sustaining organisational change (Jones *et al.*, 2005). The fundamental culture, or "feel", of the organisation directs and motivates employee efforts (Chonko *et al.*, 2002). Contextual factors are the circumstances, or the existing external and internal conditions, that have been shown to influence organisational effectiveness (Pettigrew, 2000). Outer context refers to conditions such as prevailing economic circumstances as well as social and political environments, whereas inner context refers to internal influences such as resources, capabilities, structure, culture and politics (Pettigrew, 2000). Self *et al.* (2007) defined internal context as a moderator of the relationship between *i)* change content and process and *ii)* employee beliefs, attitudes and intentions. That is, the interpretations of the changes made and the process used during the implementation will be influenced by existing organisational circumstances. Johns (2001) argued that internal context might be responsible for explaining why a change initiative did not produce favourable effects, even though the change agents employed appropriate tactics. He stated that assessing context by capitalising on the perceptions of those who experience the benefits and

limitations of organisational practices may be an effective methodology. Perceived organisational support (Eisenberger *et al.*, 2002) and strong feelings of affect (*i.e.* the body's way of preparing itself for action in a given circumstance by adding a quantitative dimension of intensity to the quality of an experience) are some of the internal contextual variables that can make employees more receptive towards change initiatives. These apply not only in the early stages of an organisation's efforts to introduce and implement the change initiative, but also during and following the change effort.

Method

Organisational context

In 2006, the Tasmanian School of Medicine (TSoM) implemented an innovative, five-year undergraduate medical programme. Compared to the previous six-year discipline-based curriculum, the new programme is explicitly outcome based, requiring students to demonstrate specified levels of performance in a range of medicine-specific capabilities (human health and disease, communication and collaboration, community health and disease, personal and professional development) and generic capabilities (critical evaluation, reflection, communication and teamwork) at defined levels as they progress through the programme. All courses are interdisciplinary and highly integrated both horizontally and vertically. Important features include early clinical experience, small-group teaching and student-centred facilitative teaching/assessment approaches that foster deep learning. The programme's assessment system is particularly important and incorporates many novel features, including criterion referencing of results, interdisciplinary examinations, a balance between continuous and barrier assessments, peer feedback and performance assessments of clinical competence.

Change context

Previous assessment processes for TSoM's medical programme in relation to Years 1-3 were discipline-based and content-specific with no formal or documented quality assurance processes in place for exam item writing and peer review. The major reforms of the MBBS course facilitated a change in assessment procedures to encourage disciplinary integration. Furthermore, the new assessment processes described herein had a significant element of centralisation in order to facilitate development, documentation, exam management and QA reporting of assessment activities. The Medical Education Unit (MEU) was central to the management of the assessment process for the MBBS programme and, prior to implementation, the "what", "how" and "why" of the change process was communicated to staff individually and at

workshops. A document was circulated in advance outlining a proposal for the introduction of quality assessment processes.

The change process included setting up QA processes around assessment practices (as shown in Appendix I) and these in turn included blueprinting the educational objectives, selecting appropriate test formats and applying assessment strategies to achieve adequate levels of reliability. It also meant implementing appropriate standard-setting and decision-making procedures and running workshops for the peer review of assessment items before they were administered to students to ensure that the items were constructed properly, without item writing flaws. To minimise the error of measurement and thus increase the overall validity and reliability of the exam, the review workshops focused on: *i)* what the question tested; *ii)* why the question was relevant or important; and *iii)* if it was core knowledge.

Participants and procedures

Questionnaires were administered to the 25 prospective participants. These were full or part-time academic staff members of TSoM who were involved in the development of assessment questions for medical students in Years 1-3, as well as the administrative staff who co-ordinated the programme. Participation was voluntary and anonymous.

Measures

The survey instrument measured staff members' openness to change based on the concept developed by Armenakis and Bedeian (1999) and on the scales developed by Bamford (2008) and McNish (2001). The questionnaire comprised 15 close-ended questions, was measured on a 5-point scale and structured along 3 variables: change content, change process and organisational context, as shown in Table 1. The questionnaire also included an open-ended component, which allowed respondents to provide general comments on the change process.

Change content focused on the impact of change (*e.g.* "There were reasons for change which are visible and the goals are transparent"). Change process focused on institutional communication (*e.g.* "Communications about the change are timely and relevant"). Change context evaluated staff perceptions of the degree of support they believed the School of Medicine and MEU provided to them in the implementation of the new assessment practices (*e.g.* adequate training was provided to those who required it). Scale options ranged from 1 (strongly disagree) to 5 (strongly agree).

Table 1. **Means and acceptance level of change factors**

Variable	Mean score (out of 5)	Disagree %	Neutral %	Agree %
Change content				
The change was necessary	4.44	0	0	100
Do you think this was the correct change to make?	4.33	0	0	100
This change initiative will succeed	4.06	0	11	89
There are logical reasons for change which are visible and the goals are transparent	4.28	0	0	100
Change process				
The basic goals for the change were clearly defined and communicated	4.00	0	6	94
The people affected by the change within the organisation (TSoM) agreed with the goals	3.56	0	41	59
Regular feedback on the change process was always given	3.94	0	24	76
The implementation team had specific lines of responsibility	3.71	0	25	75
Communications about the change are timely and relevant	4.18	0	13	88
The success of this change depends on individual contributions to the process	4.41	0	7	93
Organisational context				
Adequate training was provided to those who required it	3.71	6	31	63
Resources were made available to resolve practical difficulties as soon as they arose	3.83	0	35	65
Those concerned with the outcome of the change process take part in planning	3.78	6	24	71
The process of implementation for the change is flexible and reactive	3.89	0	18	82
You are able to take ownership and influence details of the change	4.11	6	0	94

Note: Number of respondents: 18.

Analysis

Mean scores for each Likert item were calculated with the SPSS computer programme using a 5-point scale, with a score of 1 for strongly disagree and 5 for strongly agree. Item responses relating to each change variable were summed to create scores for each variable and the mean scores of participants' responses were determined. The relationship between the three variables (change content, change process and organisational context) was also determined using correlation analysis and by comparing the percentage of openness to change for each variable.

Results

There was a 72% response rate as 18 out of the 25 prospective participants filled out and returned the questionnaires. The means and the acceptance level for the Likert items are presented in Table 1. It was clearly demonstrated that within the change content variable, all respondents (100%) agreed that the change was necessary. The change made was perceived to be correct and the reasons and goals for change were considered visible and transparent. Also, 89%

of respondents agreed that the change initiative would succeed. The remaining 11% were neutral.

Within the change process variable, 94% of the respondents agreed that the goals of the change were clearly defined and communicated, 93% agreed that the success of the change depended on individual contributions to the process and 88% agreed that communications about the change were timely and relevant. It was also evident that 76% of the respondents agreed that the implementation team had specific responsibilities and 75% agreed that regular feedback on the change process was always given. Only 59% of the respondents reckoned that the people affected by the change agreed with the goals; the remaining 41% were neutral. No one disagreed.

Within the organisational context, 94% of the respondents agreed that they were able to take ownership and influence elements of the change. However, 6% of the respondents disagreed. In addition, 6% of respondents indicated that adequate training was not provided to those who required it and that those concerned with the outcome of the change process did not take part in the planning process. It was clear that 82% of the respondents agreed that the implementation process for the change was flexible and reactive, while 65% agreed that resources were made available to resolve practical difficulties as soon as they arose. It was noted that there was a high level of openness to the change, and staff level of perception of support from the school and MEU influenced their openness to the change content and process.

Figure 1 shows mean score values of 4.28, 3.97 and 3.86 for change content, change process and organisational context, respectively. This indicates that respondents were most open and in agreement with the content, but less open to the context, of the change. Table 2 indicates the positive correlation between content and process ($r = 0.48$), content and context ($r = 0.58$) and process and context ($r = 0.46$). The positive relationship between the three variables indicates that respondents who felt more positive about the content of the change also felt more positive about the process and the context of the change, with a more positive relationship occurring between the content and context of the change. The test reliability was 0.87. Internal consistency for each measure of change was high with Cronbach's Alpha of 0.72, 0.68 and 0.76 for change content, process and context respectively.

Figure 2 presents the level of acceptance of the three change variables. While 97% of the respondents agreed with the change content, 3% were neutral and no one disagreed with it. Furthermore, 81% agreed with the change process, 19% were neutral and none opposed it. In terms of organisational context, 4% of the respondents disagreed, 21% were neutral and 75% agreed with it. The general comments from respondents are presented in Table 3.

Figure 1. **Mean scores for change variables**

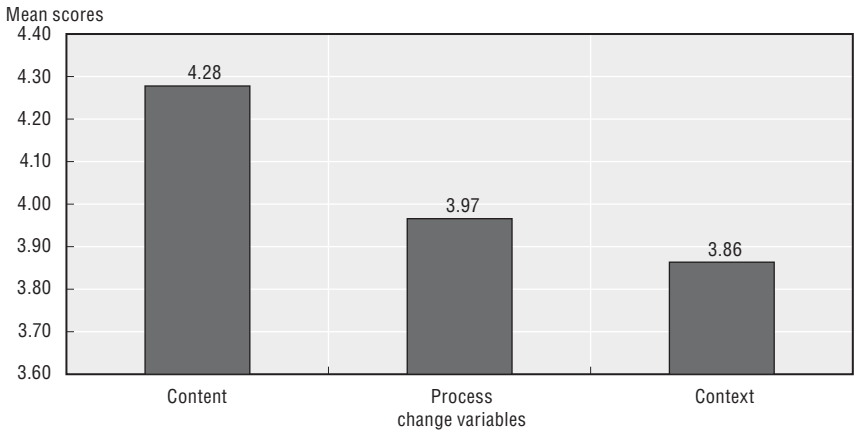


Table 2. **Correlations between change variables**

Variable	Content	Process	Context
Content	1		
Process	0.48	1.00	
Context	0.58	0.46	1.00

Note: All correlations were highly significant ($P < 0.001$).

Figure 2. **Staff response to change variables**

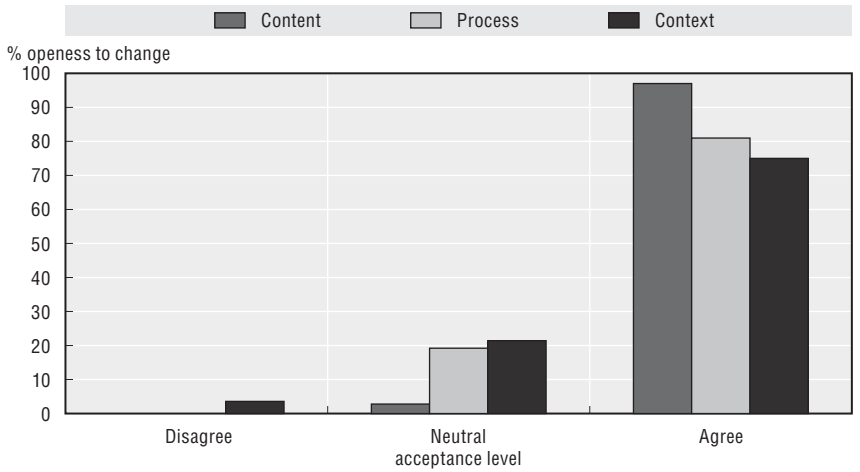


Table 3. **General comments from respondents**

"Very good initiative. Only thing is that sometimes exam requests were a bit late and information or outcomes from the assessment committee did not always filter through in a timely manner. Generally though it was good. QA program and MEU involvement in exam preparation has been excellent."
"I agree that the changes have been necessary – however I think that the expertise of the MEU has made the process more prescriptive than consultative."
"This process has also been useful for re-thinking assessment in other courses outside of the School of Medicine. It also helps to focus on teaching."
"I think that the changes will, with time, make assessment more effective. It needs everyone to be fully engaged for maximum success."
"The change was clearly necessary. The implementation has been fluid, *i.e.* responsive to needs/feedback, but also proactive in (re)setting directions when needed."
"I did not have central involvement with the changes, so my neutral comments tend to reflect a lack of knowledge or involvement in those areas."
"Assessment get togethers are a great opportunity to discuss various issues."
"Somewhat difficult to answer some of the questions as we are still very early into QA process. Succession planning seems to be built in but will only be apparent some time down the track."
"Further work needed on the workshop process. Mapping/blueprinting to be provided with the exams. We probably also need to allow more time for the meetings."

Discussion

This study was undertaken to assess staff members' level of openness to change using the content, process and context factors of change. The positive correlations between the three change variables indicate that openness to change is facilitated by the content (impact of change), process (organisational communication) and context of change (perceived organisational support). This means that content, process and context-related factors have significant inter-related influences on the success of organisational change, as stressed by Armenakis and Bedeian (1999). This result is in agreement with the findings of Self *et al.* (2007), who observed that the extent to which employees perceived an organisational change as justified (impact of change and organisational communication) was influenced by their perceived organisational support. The high correlation between the context and content of organisational change implies that employees who perceive organisational support as high are also more likely to perceive organisational change as more justified and be open to it. On the other hand, this finding contrasts that of Devos *et al.* (2007), who reported that content, process and context factors have a significant influence on change openness and are independent of each other. This may be because the organisational change presented in their study was simulated and the participants only had a limited amount of information about the change taking place. In this study, however, the change was real and all respondents believed that the change was necessary and was the right type of change required. The willingness of faculty to engage in the change process is an

indication of institutional values in the implementation of best practice assessment programmes. Specification of the intended learning outcomes and alignment of the learning outcomes with assessment tasks facilitate an assessment-to-a-standard approach. Here, what matters are the standards that students achieve and not the time they take to achieve them; it also emphasises accountability and quality assurance (Harden *et al.*, 1984).

Enhancing assessment practices and embedding new approaches to assessment within teaching and learning practices require more than professional development for staff; they also require a process of organisational change and development (McInnis and Devlin, 2002). Barriers to change in higher education have been widely explored and these barriers give rise to resistance and conflict among those involved with the change process (Donahoe, 1993; Hargreaves and Fink, 2006). Change at the institutional level requires a planned approach that is fully in tune with the core values of the institution. Getting consensus is not easy and the need for change is not necessarily recognised or widely supported by those engaged in teaching and learning (Borland, 2002). There were more neutral responses in the change process and context than in the change content factors. For example, 41% of the respondents were neutral when asked if "the people affected by the change within the school (TSoM) agreed with the goals". This could be indicative of subtle resistance to change which may be due to increased workload. Allen *et al.* (2007) observed that employees who perceived information about organisational change to be of high quality had a clearer understanding of the change process, suggesting a reduction in their uncertainty. This highlights the importance of providing employees with detailed and accurate information during change processes and indicates that the extent to which information about change is communicated determines the level of openness to the change process.

Although all respondents agreed that the change was necessary, it seems the extra workload and challenges associated with the change process were obvious sources of discomfort. Some of the respondents whose opinions were neutral indicated that because they were not involved in certain areas they felt they could not indicate otherwise. For instance, one respondent wrote: "I did not have central involvement with the changes, so my neutral comments tend to reflect a lack of knowledge or involvement in those areas".

Cunningham *et al.* (2002) reported that employees feel that they have control over organisational change; this seems to be one of the central factors facilitating openness to change and has been confirmed in this study. Indeed, 94% of the respondents agreed that they were able to take ownership and influence the details of the change. Devos *et al.* (2007) stated that people with an internal locus of control see themselves as active agents and believe they have control over their environment and personal successes. Opposition or

resistance to change from academics is most likely when it poses a potential threat to their autonomy and integrity, and when changes appear unnecessary (Borland, 2002). Gaining the political support of faculty leadership across all staff and from the outset will ensure their involvement and promote the credibility of the change project. This is evidenced in this study as faculty staff responded positively due to the communication of the "what, why and how" of the change initiatives to them prior to implementation.

Overall, the change in assessment practices at TSoM has been well accepted by staff members. However, regular feedback needs to be provided on the change process and timely and relevant communications made about the change. There needs to be adequate training for those who require it and resources should be available to resolve practical difficulties as soon as they arise. Lastly, it is important to ensure that those concerned with the outcome of the change process take part in planning.

Implications for practitioners

Introducing a change initiative into an organisation always engenders confusion and concern on the part of employees because the initiative may affect policies, procedures, resource allocation and future workplace exchanges, as well as the possibility of job losses (Real and Poole, 2005). Prior to, and after, the introduction of a change initiative, justifying a change can go far in mitigating possible negative reactions to – and increasing support for – an organisational change. This study demonstrates that if an organisation has purposefully substantiated the necessity of introducing change and its appropriateness, employees will perceive it as a demonstration of the organisation's supportiveness. Since employees' perceptions of a supportive (or non-supportive) organisation are constructed through the ongoing exchanges experienced with the organisation, any failure to justify the change and provide qualitative information about the change process may signal a lack of support from the organisation. This, in turn, affects their willingness to embrace a change initiative.

This study provides a representative picture of the attitudes, experiences and requirements of faculty members with respect to quality assurance of assessment practices. Most of the faculty members were generally positive towards the change process around the quality assurance of assessment practices; however they needed support in this process. In the implementation of quality assurance processes around assessment, well-designed improvement strategies which are continual rather than episodic should be employed to guarantee effectiveness. For any student-centred assessment practice to have an impact it must be workable and have the support and co-operation of all involved. Changing assessment practices and keeping it

going can only be effective if faculty members are supportive; such development needs to take place at all levels, from the institutional to the individual (Hays, 2008). The major challenges posed in effecting change initiatives include staff development, demands on staff time and availability of resources. Resources must be committed to the development and maintenance of effective quality-assured assessment practices and the cost-effectiveness of such intervention processes will need to be evaluated.

Limitations of the study

The size of the survey sample – 25 people – was small because only the staff members involved in the Years 1-3 programme were involved in the change process. Furthermore, some of the potential respondents could not participate in the survey because they were new to the system and felt that they were unable to make judgments about the change implementation process. Another limitation was that TSoM was undergoing major administrative restructuring and preparing for a movement of staff and students to a new location at the time of the study. These two issues constituted radical changes for staff and could have affected their responses in this survey, as evidenced by the high levels of uncertainties and, in some cases, negative responses to the organisational context factors.

Conclusion

Educational innovation can be complex and extensive, but considerations of assessment practices along the lines of continuous quality improvement and innovation are likely to further medical schools as learning organisations with the attendant benefits. Mapping the progress of each change strategy and the ability to retrieve this information through indicators that reflect the values of medical education deserve attention on a global scale.

It was evident from this study that when staff perceive that the institution is supportive of them, this realisation could positively influence their reception of the organisation's justification for introducing a change initiative. In addition, the extent to which the change initiative is successful could be influenced by the quality of communication between the employees and management and/or change agents. Finally, this study confirms the effectiveness of content, process and context framework of change in ensuring successful implementation and management of organisational change initiatives. This is a model that allows for continuous quality improvement, and it is proposed as a positive way forward for institutions, the higher education sector, and all the beneficiaries and stakeholders for whom a quality higher education system is important.

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APPENDIX I

Assessment QA Processes

General principles

- There is a clear relationship between intended learning outcomes, teaching activities designed to achieve those outcomes, and assessment methods to determine the quality of outcomes demonstrated by learners.
- Methods for assessing achievement of learning outcomes are the most appropriate for the learners, given other contextual constraints.
- All students are entitled to feedback on their performance, through formative and reporting on summative assessment performance.
- Validity and reliability of assessments are evaluated through blueprinting processes, analyses of assessment data and correlation with other performance measures.
- The writing of quality assessment items is facilitated by training, team-based processes, refinement by peer review and feedback on the performance of items to writers.
- All staff involved in assessment should have a basic understanding of principles and knowledge of processes involved in development and management.

Test development

- Each year assessment committee plans timelines for the timely development of formative and summative assessment tasks, in association with the university Examinations Office timelines.
- Assessment workload maps are generated annually to monitor frequency and timing of student assessment, as well as staff workloads with marking, reporting and analysis of data.
- Blueprinting processes that align assessment with unit learning outcomes and the Medical Graduate Profile (MGP) are developed to inform the development of tests.
- Blueprinting processes inform the development of new test items; the selection of existing items from the IDEAL database and validation with the final test.

- The items chosen for each assessment are those likely to achieve a stated reliability score (> 0.7).

Item development and review

- All new items are developed in training workshops or small group settings led by experienced academics.
- Items are developed and matched to learning objectives and unit blueprints.
- Each item has a template (MCQ, EMQ, OSCE).
- Each item has an author.
- Each item has a complete feedback section.
- Each item has a complete classification section.
- All new items are reviewed by generalists, discipline experts and clinicians by a defined process and clear audit trial; ideally OSCEs will be trialled before use.
- All new items are formatted according to pre-determined specifications (by the MEU).
- All UTAS items are reviewed for currency and performance every three years.
- Each item has a development history trail.

Exam management and marking

Access to examinations under development is computer-based and password protected.

- Any paper copies of examinations are strictly numbered, controlled and destroyed by shredding.
- Examination papers are reviewed for consistency in presentation and formatting and signed off by the appropriate Unit Co-ordinator.
- The final examination paper is sent by the PDA team leader to the Examinations Office.
- Pre-marking meetings are held to maximise consistency in marking; at least 5% of scripts should be double-marked and all borderline scripts double marked.
- Standard setting is evidence based.
- Assessors are trained to understand the criteria and expected standards of performance.
- Data entry occurs through double entry methods.

- Original papers are stored for six (6) months, then scanned for longer term storage.
- Students are provided feedback via individual standardised templates, whole of class discussion and individual consultation.

Psychometric analyses and review

- Feedback is sought from staff and students on examinations.
- The MEU conducts psychometric analyses to maximise reliability, validity and generalisability.
- Summary reports are provided to staff involved in teaching the unit; the relevant associate head and unit co-ordinators all receive detailed reports.
- Each item has an analysis and review indicating its acceptance, review or rejection using standard templates developed by the MEU.
- The MEU holds all reports in a secure environment.
- Feedback on items is reviewed by authors when review is required.

Information for authors

Contributions to the *Higher Education Management and Policy* Journal should be submitted in either English or French and all articles are received on the understanding that they have not appeared in print elsewhere. Articles submitted for publication in the Journal are refereed anonymously by peers.

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Other criteria include clarity of expression and thought. *Titles of articles should be as brief as possible.*

Presentation

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