

Being strategic about improving teaching and learning in research-intensive environments

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Introduction

This paper is about a changing focus of attention, and the use of different change tactics, as teaching-focussed higher education institutions have attempted to improve the efficiency and effectiveness of their teaching, and to orient teaching to new goals. It is also about a recent phenomenon of world class research-intensive institutions adopting distinctive tactics to develop their teaching. For example the Massachusetts Institute of Technology (MIT), ranked third in the world in terms of research, now provides 80% of its first year undergraduates with an extended experience of working in a research group or as a research assistant to a researcher, often outside term time, outside the curriculum, and at close to zero cost to the teaching budget. It does this as a way of orienting students to the nature of academic learning in a research environment, and to groom students for future PhD studies. The questions this paper will explore are not about the nature of such pedagogies but rather how they come about – how institutions organise themselves so as to produce significant and worthwhile changes in teaching of this kind. Until recently most progress had been made in teaching-focussed institutions and the research-focussed had stood aloof or struggled. The University of Oxford has had a learning and teaching strategy since 1998 which has involved ‘research-informed’ support for individual teachers or small groups. In 2004 a new Vice Chancellor took up office at Oxford with a strategic approach and an agenda for change and a range of somewhat more strategic changes in teaching are now planned. An international network of universities has been established by Oxford to explore, collaboratively, how teaching can be supported and developed in very research-intensive environments. The institutions invited to be involved are listed in Table 1. They are either in the world’s top 10 in terms of research or are amongst the top research institutions in their country. They are distinguished from other potential members of the network by also having a track record of taking distinctive steps to support and develop teaching in various ways.

Visits to each to undertake case studies of the ways they go about doing this, and why, were undertaken during 2004-5. The member of senior management responsible for teaching (such as a Pro-Vice Chancellor or Vice-Rector) and the head of the educational development unit, of each institution, took part in two-day meeting in Oxford in June 2005. The case studies are mounted on a password-protected confidential web site together with an analysis of the range of teaching development mechanisms the institutions employ, for the benefits of the network members. Annual meetings are now planned and collaborative projects of particular interest to network members, such as a research project on the nature of departmental leadership of teaching in research-intensive environments, have begun.

Table 1 The ‘Times Higher’ world research rankings of institutions involved in the network

MIT	3
Oxford	5
Stanford	7
Princeton	9
Cornell	23
Sydney	40
Edinburgh	48
Oslo ¹	101
Utrecht	120
Helsinki	129
Lund	171
Leuven ²	201+
Queen’s (Canada)	201+

Background and context

My previous keynote presentation to HERDSA was in Wellington in 1991 and was concerned with teaching large classes. In that presentation I ‘walked the talk’ and demonstrated a range of large class teaching methods so as to help participants to learn about the methods I was talking about. For the previous decade I and colleagues had been collating and publishing collections of what would today be called student-focussed or constructivist teaching and assessment methods. Initially these were published in the ‘53 Interesting Ways to Teach’ series which have sold more copies than anything else about teaching in higher education before or since, with the sole exception of Bill McKeachie’s ‘Teaching Tips’. Then as class size became the major challenge to traditional teacher-focussed methods in the UK, a group of us at what was then Oxford Polytechnic produced a series of publications in the ‘Teaching More Students’ series. About 20,000 copies were produced in the UK and they have also been translated into Canadian and Australian. Workshops were run to introduce the methods in these publications to every Polytechnic and Higher Education Institute and College in England (but not in the research-oriented Universities) and over 9,500 teachers in over 100 institutions experienced half or full day workshops.

The focus of all this work was the individual teacher who had autonomy over the choice of teaching and assessment methods in the courses or ‘modules’ they taught. These teachers had, at that time, a fair degree of freedom to implement almost anything they saw fit. Over a period of 20 years I undertook consultancies in about 150 teaching-oriented institutions worldwide, and I got a feel for the kinds of problems teachers were faced with and the kinds of organisational obstructions they encountered. Very little of this work was in research-oriented institutions. This was partly because resource constraints and class-size problems reared their ugly heads at least a

¹ Rankings of non-English speaking universities are compromised by the way citation indices preference English language journals.

² The ranking for Leuven has been confused by The Times with that of the University of Louvain and should be similar to that of Utrecht

decade later than in the less well funded Polytechnics and partly because research universities' students were, by and large, so able that they bailed these universities out, overcoming by their own commitment and ingenuity the problems caused by the inadequately thought through patterns of pedagogy. The research-oriented simply did not perceive there to be problems on the scale that required institutional initiatives to tackle, and were also largely unaware of any expertise or knowledge existing outside their own walls, and so tended not to hire consultants.

In the late 1990's it had become clear that the rate of change in higher education teaching, learning and assessment systems had failed to keep pace with the rate of change in their context. These changes in context are almost universal internationally and include reductions in real terms in funding per student (by over 50% in little over a decade in the UK), rapid increases in student numbers and more dramatic increases in class sizes, a more diverse and less well educationally prepared (and less motivated) student body, and attempts by governments to re-orient higher education to train students to contribute to the economy rather than to provide an education. National quality assurance systems have commonly become intrusive and in Europe have now been supplemented by the demands of the Bologna Agreement which has led to large scale curriculum restructuring (into a three-cycle degree format already familiar in Australasia) and more educationally significant redesign of curricula around learning outcomes.

Traditional patterns of teaching have been largely retained, despite all the efforts of staff and educational development, and the main change has been that these patterns have become attenuated: students experience less frequent discussion and in larger groups, essays and assignments are less frequent and, most significantly, students receive less, less frequent and less personal feedback on their learning and progress. There are now fewer books per student and less space per student for them to study in. Despite the reductions in teaching hours students do not undertake study independently to a greater extent, but tend to study less, and instead spend more time earning income to cover increasing debts, and allocate their reduced study time in highly strategic ways focussed on meeting assessment demands. Teaching patterns that used to work tolerably well started to fall apart more than a decade ago in some institutions. The main response of teachers has been to work harder doing more of what they used to do but now spreading this effort much more thinly across their students. A study of academics' workload in the UK, designed to establish if funds for teaching were subsidising research, or the other way round, discovered that academics were subsidising both research and teaching by putting in many more hours a week than they were paid for and more than in any other field of employment. It was clearly not the case that academics lacked commitment to their students.

While studies of the impact of the 'workshop and advice' approach to educational development showed that teachers who engaged with this approach both promised and delivered changes to their teaching methods, there was little evidence that the new methods actually improved student learning or that they were any more cost-effective than the methods they had replaced. Student performance was shown in a series of large scale studies to be strongly negatively correlated to class size and strongly negatively correlated to the time students spent earning income, but this did not prevent further increases in class size or further reductions in total study effort. Changes in assessment patterns and regulations allowed students to get away with this. Average marks actually increased in the UK, although retention declined. Twenty years of extensive efforts to improve student retention in the US have had no overall impact (despite some local successes), possibly because the context has become harsher at much the same rate that the efficiency of new forms of student support has improved. The number of years students take to complete their degrees has increased in the USA and in most of Europe and in the USA the cost of higher education has increased, rather than reduced as elsewhere, without improving performance.

Simply undertaking ever larger scale educational development of the same kind seems unlikely to solve these problems. Despite generic evidence of the lack of efficacy of commonly used teaching methods and the comparatively better efficacy of a range of alternatives, change has tended to be limited in scale, and tenuous. One of the reasons for this has been that many methods have been impossible to implement on any scale, given the way institutions organised themselves. Teachers' productivity has been measured in class contact hours, and so a teacher implementing cost-effective forms of resource-based learning (of any kind, including e-learning) is likely to be rewarded by being allocated an additional course to teach in order to bring their class contact hours back up to the contracted maximum. There has as a consequence been no personal incentive to be efficient. While duty allocation systems specified class contact hours, they did not specify course redesign time and the scale of changes required more time than teachers were allocated. A consequence has been that much innovation has been funded by special one-off 'innovation funds' allocated through competitive bidding, rather than being part of the duty allocation system. In contrast the Open University in the UK allocates 'design time' to academics at the centre and 'teaching time' (determined by student numbers) to the tutors at the periphery, and so manages to resource the best designed distance learning courses in the world.

While library costs have not usually been charged directly to departments, photocopying and computers have been. Resource-based learning might cost the university less overall but cost the department more so Heads of Department are unlikely to support such change. Patterns of teaching have been determined by conventions about where the costs fall rather than by overall costs and efficiency. Exam regulations have often prevented widespread use of methods known to improve student performance and retention such as coursework, self and peer assessment and group assessment. Regulations designed to limit plagiarism have increased the use of assessment methods that are known to be less valid, that have corrupted preceding study effort, that have constrained collaborative work on projects or theses, and prevented cost-effective approaches to supervision. There has been inappropriate learning space available to support out-of-class individual learning and a lack of collaborative and 'noisy' learning space in libraries. Library acquisition and lending policies have supported specialist research rather than mass higher education and even in the better resourced libraries the student experience is that 'the book is out'. 'Reading for a degree' is a sour joke for today's generation of students. Appointment, recognition and reward processes have made it clear where ambitious academics' futures lay, and have devalued teaching efforts. Timetabling systems and room booking systems have often been predicated on traditional patterns of teaching and made alternatives extremely difficult to plan. Classroom design and furniture have made implementation of student-focussed methods extremely frustrating.

Innovations could often only be implemented at the margins where rules and systems could be bent or avoided, and resources scraped together, but innovation could not be mainstreamed. Even professional, well trained and energetic teachers found it difficult to make more than small scale local changes and even these could easily be washed away by changes in staffing or duties. In most contexts a force field diagram would reveal that the list of forces for change was extensive but that the list of forces obstructing change was far greater. Where change was achieved it was often piecemeal and oriented to a variety of contradictory goals. Educational development focussed on individual teachers making idiosyncratic changes where what was needed was medium or large groups of teachers agreeing on implementing the same change collaboratively across whole programmes. Most published accounts of successful innovation have been at the level of the module rather than the programme, and have not provided evidence of sustained benefit to students across programmes.

This was the situation in England in 1997. About A\$500m had been allocated in the previous decade or so through a series of national initiatives designed to bring about radical change in teaching, especially involving the use of information technology. Usually six months after each short-term initiative was completed hardly a ripple was left in its wake. The Higher Education Funding Council (HEFCE) commissioned me to undertake a review of why all previous national attempts to change teaching had largely failed, and what alternative approaches might be more effective. The current review in Australia of 'dissemination' concerning teaching has a similar concern for the cost-effectiveness of investment in innovation in teaching, though the Carrick Institute seems to have ignored much of the evidence that was presented to it, judging from the decisions that have been made about how to use funds. The HEFCE review was undertaken in order to be prepared for the findings of the 'Dearing Report' on higher education, in 1997, which would say that universities had changed slower than their contexts and that their teaching methods were no longer 'fit for purpose'.

An outcome of the HEFCE review with which I am concerned here was the decision to fund institutions to develop 'institutional learning and teaching strategies' so as to provide a more supportive environment for more coherent and larger scale purposeful change. There was no specification of what such a strategy should consist of or be for or what form it should take, and involvement was voluntary. A review of institutional attempts to be strategic about teaching and its quality and improvement found that less than half of all institutions had anything resembling central plans and most simply had a series of policy documents produced by different committees and different pro-Vice Chancellors forming a totally incoherent framework. There was, for example, little link between the focus of quality assurance or student feedback mechanisms and the priorities of the institution. For example there would be no definition of 'quality' and student feedback would focus on teacher behaviour, despite the institutional priority being student retention. There was never a link between the research strategy and the teaching strategy, except that the nature of research strategies usually made the achievement of the goals of teaching strategies much less likely. There was rarely any evidence of joined up thinking about estates, appointments practice, student support, library policy and the exploitation of information technology. Much of this policy was not in practice being implemented and there were no examples of monitoring, let alone evaluation or research, to tell if any of the policies or plans were having the desired consequences. Usually no consequences had been specified, and certainly no measurable targets, and so little purposeful evaluation could have been undertaken.

About A\$250m was provided between 1997 and 2005 to support institutions in developing and implementing learning and teaching strategies, and some related initiatives (such as professionalising teaching) delivered through these strategies. Three reviews of institutional progress were made at two-year intervals, involving the analysis of institutional documentation and follow-up case studies and visits where practices were particularly interesting. A conventional wisdom developed about what a comprehensive learning and teaching consisted of (see Table 2).

Table 2 Components of an Institutional Learning and Teaching Strategy

Context	An 'environmental scan' that explains the focus of the strategy
Process of creation	How the strategy was developed and how ownership was achieved

Goals	What the strategy is attempting to achieve
Culture	What kind culture is appropriate to underpin such a strategy
Targets	Quantitative goals, and dates for achieving them, where these can be specified
Curriculum	What changes in the shape and focus of the overall curriculum will be required
Learning, teaching and assessment practices	What broad ‘signature pedagogy’ is likely to be appropriate, and why
Quality Assurance	How course approval and review will be conducted as a lever towards the goals of the strategy
Quality enhancement and infrastructure	What change processes will be utilised, (innovation funds, teaching development units, recognition and reward etc)
Implementation	How the implementation of the strategy will be managed, including new management positions and portfolios
Monitoring	How routine monitoring information will be collected to monitor change in the desired directions, including changing the student feedback system.
Evaluation	How research and evaluation will be conducted so as to understand the change process and to develop the strategy and its implementation.

Progress

Learning and teaching strategies, or something like them, had existed at some institutions such as Sunderland Polytechnic, since the late 1980’s, but were very unusual at that time. Within one year of the introduction of the national initiative in 1997 all 134 English higher education institutions had a learning and teaching strategy and by 1999 all Welsh institutions also had strategies, though of generally less well developed forms (with the exception of the University of Wales Institute, Cardiff, that had started some years earlier). Within four years these strategies contained all or almost all of the components listed in Table 1, and the number of change mechanisms that institutions had put in place had on average quadrupled. Promotion mechanisms changed dramatically in some institutions, even in some research-intensive institutions, and new kinds of posts were established such as ‘Readerships in teaching’ and ‘Departmental Teaching Co-ordinators’. Annual teaching conferences sprung up everywhere, and in some institutions these were faculty-specific. Several institutions founded their own refereed teaching journals and many funded pedagogic research and established professorships in teaching in higher education.

Different elements of institutional infrastructure began to be used together to pull change in a particular direction in a coherent way, for example:

- using estates strategy to support pedagogy, for example by building ‘noisy learning space’ to support collaborative learning outside of class that was not silent library space, or successively removing internal walls between classrooms to create large flexible learning spaces, to make conventional didactic classroom teaching almost impossible;
- changing research policy, funding and promotion criteria so that research effort was re-oriented to supporting new curriculum goals;
- creating new senior teaching-focussed posts and parallel career paths for researchers and teachers, to create local ‘leadership of teaching’;
- refocusing promotion criteria and teaching innovation fund criteria to focus on the achievement of institutional goals rather than on poorly defined ‘excellence’;
- changing funding formula for departments in relation to targets (such as retention rates);
- changing course approval and review criteria so that curriculum design was oriented to strategic goals.

Institutions learnt that not all this effort could be directed effectively centrally and that it was sensible to devolve responsibility, and funding, to departments who were then required to develop their own learning and teaching strategy, in line with the institutional priorities, and report on use of funds to achieve targeted change, using performance indicators in relation to targets.

The scale of change initiatives increased dramatically and took some strikingly novel forms. Sometimes this involved taking responsibility away from local providers for certain aspects of student support and setting up completely new centralised systems supported by management information systems and justified through careful cost-benefit analyses. At the Open University very substantial devolved funding for local efforts to improve student retention had repeatedly produced no measurable benefit to retention or student performance. Through a series of centrally run large scale research and development studies the effectiveness of a collection of proactive interventions (such as phoning students two weeks before their first assignment) was demonstrated statistically. These interventions were built into a centrally run system and shown to produce returns on investment of 300-600% through increasing fee income and reducing recruitment costs to replace lost students. This was not about Carl Rogers and academic autonomy, but about customer relations management information systems, call centres and marketing theory. However it worked, and staff development for tutors or individual course designs had previously not worked.

Progress in research-intensive contexts

While progress nationally was both rapid and extensive, this hid quite a lot of variation between different kinds of institutions. Small institutions found it very difficult to be strategic about anything and had less financial flexibility to support new initiatives. But most markedly, research-intensive institutions made less progress, and where changes were made, they seemed less well embedded and secure. Some of the initiatives in these institutions stopped as soon as the external funding ended. These institutions had also been very weakly represented in a series of national initiatives where there was competitive bidding for funds, to the point that Cambridge and others protested that there was a national conspiracy only to support the teacher-focussed institutions. For example despite dominating the national ‘league tables’ for teaching quality, only one of the top six ranked institutions in England won a single ‘Centre for Excellence in Teaching’ while several teaching-focussed institutions with much weaker quality records acquired up to four

each. Nearly all the 'National Teaching Fellowships' (and there are now 50 a year) have been awarded to teachers from outside the top twenty ranked institutions.

There was clearly less, and less effective, engagement with the development of teaching, and it was clearly much harder to make progress in terms of taking steps to develop teaching, in research-intensive institutions. What progress was made came slowly and was precarious. Why should this be so?

There are some obvious issues to do with priorities. The research pressures in the UK are extreme, with much of the available research funding determined by formulae linked to research performance. Departments do get closed, for financial or reputation reasons, if their research ratings go down, but not if their teaching is not quite as good as it might be. Workload pressures on academics in the UK are also extreme and research has first call on any 'spare' time. While teaching is listed on academics' lists of duties, the development of teaching or of new courses is not – and anything not explicitly specified gets squeezed out. There are also obvious problems associated with the relative values and status associated with research and teaching – though this is not always as straightforward an issue as one might imagine. At Oxford the current attempts to be more strategic to maintain Oxford's global research rankings are being opposed by academics who fear a dilution of Oxford's traditional focus on undergraduate education, to which they are strongly committed.

Highly ranked research-intensive institutions are also less subject to extreme teaching problems. They tend to attract outstanding students who need less support and fill in gaps for themselves. For example Oxford has over 97% of its intake graduating three years later, while the proportion at some English institutions is nearer 60% or ten times the level of drop-out. The attitude at several in the network of research-intensive institutions was 'if it isn't broken, don't fix it'. They tend to attract outstanding academics – and they are outstanding at everything they do, not just at their research. Student diversity tends to be cultural rather than associated with ability or educational background, though several of the European institutions do have surprisingly open access. Student demand is sky high. There are seldom problems with the employability of graduates and a high proportion progress to more advanced study. At Oxford 56% of the 4,600 DPhil students progress to academic positions! So it is not common for problems to be the driving force behind attention to teaching in such institutions – though it still happens. At two of the institutions in the network critical external quality reviews and poor ratings and rankings in the mid 1990's led to widespread strategic changes and at a third institution a recent critical review submitted by students is being used as leverage to change first year programmes across the institution. At a fourth, poor progression rates in some subject areas is likely to limit the level of autonomy those areas can expect to exercise in future. Where problems exist they tend to be associated with large size and accompanying large classes where there is less likelihood of teachers' research strengths being a real asset – in other words where the context resembles that in less prestigious institutions. Some of the institutions in the network are small by choice with quite modest undergraduate numbers, small classes and plenty of individual attention. They simply do not experience the problems associated with the massification of higher education, and traditional approaches have not broken down in the face of resource pressures.

When problems do emerge these institutions may not feel that they are a special challenge to deal with. They tend to be richer (especially in the US) and can often throw money at any problems that arise. An appeal to alumni at one of the institutions in the network for donations to support initiatives associated with the undergraduate programme brought in almost a billion dollars within two years. At another institution where there is an entrepreneurial culture (associated with fast

moving applied technology research) if a teacher has a bright idea to address a perceived problem then the first response is to find a way to fund its immediate implementation.

The organisational structure and culture of such institutions also mitigates against centralised strategic planning. Departments are highly autonomous, often with local responsibility for budgets, quality, curricula and hiring and firing. The almost total lack of central involvement in teaching quality issues is quite striking in some of these institutions and can be accompanied by a lack of belief in the value of quality assurance systems that would astonish other kinds of institution. The belief that top quality research is most likely to be fostered through unfettered academic autonomy can extend to similar beliefs about teaching. Partly because departments operate so independently there may be little communication between departments. Disciplinary teaching may go on in deep disciplinary silos with little awareness of the existence of alternative approaches and a lack of the kind of community of teaching practice across boundaries that other kinds of institutions have fostered through seminars, conferences, programmes and general collation and dissemination of good practice.

There is a very much greater emphasis on graduate supervision as a dominant form of teaching than at other kinds of institutions, with PhD numbers sometimes exceeding undergraduate numbers. Supervision is a more private and idiosyncratic process and less susceptible to 'systems redesign' compared with large enrolment courses. Oxford has a similar issue with regard to its tutorial system. What goes on in tutorials is much less susceptible to outside influence and change than is curriculum design, for instance – and Oxford tutors would add "and long may it remain so". Two institutions in the network have instituted compulsory training for supervisors, but this is unusual.

There is also, almost without exception, a lack of track record of taking teaching development seriously and a lack of history of widespread engagement by any but a very small minority of enthusiasts. In England at the institutions that made the fastest and most dramatic progress with implementing learning and teaching strategies 25% or sometimes more of their teachers possessed teaching qualifications. At the University of Coventry, for example, over half of all teachers had been through the same initial training programme, established a quarter of a century ago. This builds a common language and a shared level of expertise that makes discussion of teaching and building consensus about appropriate change very much more likely, but this may take decades to achieve. At Oxford fewer than 100 academics (out of more than 1,400 academic staff) have completed the teaching programme that was established only five years ago and about half of those have already left Oxford, so proportionately the impact is comparatively modest. The research intensive institutions have started later and more tentatively – though some are catching up. One recognised in the mid 1990's that its staff, however eminent as researchers, simply lacked the expertise to understand what was going on in teaching, learning and assessment, or what to do about it, and so set about systematically to develop a greater level of expertise, including programmes and specifying levels of pedagogic requirements for both appointment and promotion. This recognition that teaching and curriculum design requires special expertise that top researchers may lack is not universally shared, but even if it were, doing something effective about it is a very long term project.

Finally, many of the network institutions are medieval, or at least the oldest in their country. They carry burdens of tradition that define their identity. One has a central approval process for course proposals that is designed explicitly to maintain the 'look and feel' of its traditional institutional approach to teaching and to block certain kinds of innovation that might threaten that identity. In another both the method and the volume of teaching is defined in academics' contract of employment and the method of assessment is a part of the structure of the institution. In such

contexts the kinds of pedagogic options open to those in conventional institutions are simply not available to academics and they operate within much more constrained environments. While individuals may exercise considerable autonomy in some aspects of their work they may not in their teaching. At some institutions it is necessary to achieve a position of some seniority before choice of teaching methods or changes to the curriculum could be contemplated. Quality is perceived to lie in the existing paradigms and in implementing them well. In one institution a proposed teaching awards system had the term 'innovation' deleted from the criteria.

Tactics that research intensive institutions adopt

The relative lack of comprehensive learning and teaching strategies in research-intensive institutions does not mean that there are no change tactics used – though in all but two cases within the network these tactics do not form a coherent and aligned strategic whole. This final section summarises some of the distinctive tactics evident in the network institutions listed above.

Hiring and retaining academics who take teaching seriously

Several institutions in the network have 'pedagogic requirements' that new academics have to meet to be appointed, or to meet shortly afterwards through attending a training programme of some kind, and without which it is not possible to gain a permanent academic position. A difficulty is that the level of teaching experience of 'new' academics in these institutions can be quite high. At Oxford the average new academic is in their late 30's and some are experienced and highly competent teachers already, though some may have had research-only careers up to that point – and so it can be difficult to set a 'required' standard appropriately. Some institutions make a point of ensuring that teaching is taken seriously in appointment decisions and in tenure decisions. In particular several institutions select their chairs of department almost exclusively from amongst their existing academic staff, and so leadership of teaching is dependent on appointing and retaining potential leaders of teaching at an earlier stage. Some institutions have rigorous review of teaching leading up to a tenure decision and several have annual reviews of teaching as part of performance related pay. In the US performance appraisal can determine not just additional pay but your whole salary, which can go down as well as up, and so there is plenty of leverage to exploit here.

Growing leaders of teaching

Departmental chairs and heads assume much greater importance where central institutional efforts to develop teaching are limited and where departments are autonomous. The network has spawned a research project focussing on how departmental leadership of teaching can create the kinds of teaching environments that support teachers to produce excellent teaching. Several institutions put effort into supporting new department chairs and one has an extensive programme to develop the leaders of teaching of the future. The programme involves careful selection of potential leaders of the future, visits to benchmark institutions, as a group, to examine how they create high quality teaching, and funding for individuals to visit the institutions of their choice. Individuals are supported in undertaking a change initiative of some kind in order to understand more about the process of change. Those who have been through this programme are then quickly snapped up as course directors and heads of department. In only a few years those with special interests in developing teaching have been 'planted' across the institution in positions of influence.

Employing ‘teaching-only’ staff

There is a vigorous debate in the UK about whether some teaching-oriented institutions should employ academic staff to focus exclusively on the core mission of the institution, and only to teach, rather than to teach and undertake research. The majority of the research-intensive institutions in the network already employ large numbers of ‘teaching only’ academic staff on terms and conditions that are less attractive than those for tenured faculty. They may teach five courses a year instead of three and have no access to sabbaticals and other research support. Interestingly most of these staff undertake research anyway – you couldn’t stop them even by not paying them! Some choose these positions to get away from the relentless research pressure and performance-related pay that tenured faculty may be subject to and some simply have an aptitude for teaching that some researchers may lack.

Building entrepreneurial cultures

While several of the institutions have mechanisms that are designed to protect traditional pedagogies from erosion, others have highly entrepreneurial cultures that encourage, support and fund a wide range of radical pedagogies and experimentation. The only issues are ‘is it likely to work?’ and then ‘does it work?’ and so these innovations tend to be evaluated carefully. These entrepreneurial cultures are closely linked to the institution’s research cultures which may involve fast-moving fields of study, substantial funding opportunities and considerable freedom to exploit opportunities and take risks. Such cultures are enormously helped by readily available supplies of funding from donors and other sources and in North America the funds available to support ‘good ideas’ in teaching can be very substantial.

Funding special initiatives

In several institutions in the network substantial central resources are allocated to special initiatives to develop teaching. In the US this is likely to be through special appeals to alumni or special gifts for a specific purpose. In Europe core funding may be allocated on a scale that dwarfs the investments common in Australasia or the UK. In one institution an initiative to redesign all curricula around learning outcomes (ostensibly to comply with the Bologna agreement) involved, amongst other things, the employment of 14 curriculum design experts to support faculties. At another the central teaching development unit has over 100 staff. Some of the distinctive features of pedagogy at some of the institutions started off as small scale experiments in one department and have become almost universally adopted, initially through funded support – though always voluntarily, over an extended period of time and never comprehensively.

Incubators

For a whole variety of reasons it may be very difficult to change traditional curricula and traditional pedagogies at these institutions, and especially difficult for the centre to have much influence over departments. One tactic that is exploited to considerable effect is for the centre to establish ‘incubators’ that consist of parallel curricula, pedagogic processes or even whole colleges within the institution, but outside departments, and that use radical new approaches to teaching and learning while leaving the mainstream processes intact. Sometimes this involves a single subject area and sometimes an entire parallel first year curriculum or, in one case, virtually a parallel institution. Those academics who are attracted to be involved in these incubators learn how to teach, support students and assess in completely new ways, and then take these insights and methods back into their own departments. Methods then migrate into mainstream practice

with no action required from the centre. In one case an entire mainstream department has now converted to the approach taken in the incubating 'college'. Vision, leadership and funding are required to get these incubators established but they then seem to develop a momentum of their own. They often attract special funding and the attention and time of teaching development staff, and they are often thoroughly evaluated, documented and well publicised compared with conventional practices, which can help dissemination.

Explicit pedagogies and aligned strategies

In two cases the institution has an explicit definition of the kind of pedagogy that it thinks is appropriate in a research-intensive environment and this that drives most components of teaching development efforts. For example at one institution this involves the notion of 'guided independent learning'. This notion is built in to training for academics, criteria for funding for innovation, course review criteria and so on. At another, the research on what supports students in taking a deep approach to learning underpins a whole raft of policies and initiatives, including a performance-based funding system for teaching that employs the Course Experience Questionnaire that measures students' experience of those features of the learning environment that are known to foster a deep approach. While these are amongst the most comprehensive and coherent 'teaching and learning strategies' evident in the network, they are not characteristic of research-intensive institutions in general.

Focussing on learning environments

Several institutions in the network focus their attention not on improving individual teachers so much as on improving entire learning environments. Two of the institutions have developed their own versions of the Course Experience Questionnaire that focuses on students' experience of whole programmes, and administer this every year for all programmes. Several other institutions use the same underlying educational theory about the way student learning is influenced by certain features of learning environments. One has an annual teaching award which is for the best learning environment, not for the best teacher.

Protecting traditional teaching values

There is a widespread perception, especially in Europe, that declining resources, widening student access and government agendas have threatened traditional qualities of higher education. The response at several institutions in the network has been to defend traditional approaches against these outside and unwanted pressures. Effort is devoted not so much to innovation but to preventing change of a kind that is considered damaging. One has a course approval system that is intended to block certain kinds of change and others define their pedagogic approach in terms of existing patterns of teaching and assessment rather than in terms of educational principles. At Oxford the tutorial system is perceived to be a unique treasure to be protected at almost any cost and if this is not stated explicitly in every educational policy document there are howls of protest. Supporting the quality of teaching by refusing to change may be a very effective approach given what can sometimes be seen going on elsewhere.

Exploiting organisational cracks

European universities in the network are all subject to the Bologna agreement: an attempt to harmonise the length and standard of undergraduate, Masters and doctoral study in such a way that there is freer flow of students and wider recognition of qualifications for employment, across all EU countries. Some have so far largely ignored Bologna while others have embraced it and

made far reaching changes and have used Bologna as an external lever to achieve the kind of internal changes they would have liked to bring about anyway – such as using the Bologna demand for specification of learning outcomes to redesign curricula in more aligned ways, reducing the length of some programmes and introducing more competition into the allocation of Masters places so as to raise the quality of the students involved. In several institutions the scale of changes made goes well beyond what is actually required. Several of the institutions have also seen national external quality assurance systems as providing ‘organisational cracks’ into which they can insert their foot and hold open the opportunity for change as long as possible.

Benchmarking

These institutions are acutely aware of their national and especially their international standing. Their peer group often consists of top institutions in other countries rather than rather different kinds of institution in their own country. Many belong to benchmarking groups (such as the League of European Research Universities, LERU) and several have set up or are involved in special benchmarking processes concerned with specific issues (such as the ‘Ivy League’ group of teaching development units in the USA and a group of European institutions concerned with links between research and teaching). Involvement in the network described above is an example indication of this phenomenon of finding out how the competition do things, including how they teach and support teaching, and making judgements about relative performance. As with other aspects of improving teaching this is again a direct parallel with how things already work in relation to research performance and ranking.

Bottom-up organisational change and emergent change

Given the difficulty, and often the inappropriateness, of centrally driven change in teaching, there is often more emphasis on ‘bottom-up’ strategies and change emerging from networking processes. Teaching development units might work, more than in other kinds of institution, with individual teachers or small groups, on small scale innovation, in the hope that it might spread locally. Student feedback might focus on micro-level issues concerned with individual teachers or individual courses (in marked contrast to those institutions that focussed on the learning environment). Consultancy with departments or whole programmes is rare in some of the institutions. In some cases there is a focus on developing the capacity of local change agents who could make spreading and embedding of new practices locally more likely. Sometimes programmes on teaching for academics are more concerned with growing change agents than they are with developing teaching competence. In several institutions there are extensive efforts to network these isolated change agents across the university and build communities of practice around particular roles such as course directors or departmental teaching coordinators. It is much less common for such communities of practice to be organised around educational topics (such as assessment or graduate supervision) because it would be assumed that disciplinary differences would make sharing of practice unproductive. There is enormous scope in most of the network institutions to document truly outstanding practices and disseminate them outside of the contexts in which they have been developed, but very little of this scope is currently exploited. It might be necessary to form disciplinary communities of practice across the institutions to achieve such dissemination and this option is being explored.

Discipline-based developments

Given the importance of traditional disciplines and the strength of accompanying disciplinary boundaries it is perhaps not surprising that in some institutions in the network there are teaching development units within disciplines rather than large central generic centres. While in teaching-

focussed and more managerial institutions in the UK this might involve a central initiative to establish such centres in every faculty, in research-focussed and more collegial institutions the decisions and funding would be devolved and so practice can be very varied across disciplines. Faculties of Medicine often have pedagogic centres, science and technology sometimes, humanities seldom. In several institutions in the network where there is a central pedagogic unit there are also many staff employed to develop teaching, full or part time, who are primarily disciplinary academics based in departments. In several institutions the central units operate in disciplinary ways with each member of staff in the central unit working almost exclusively with one discipline and possessing a relevant disciplinary background. The total number of individuals employed to develop teaching in some of these institutions often exceeded the number one might expect to find in more teaching-focussed but more centralised institutions.

Oxford's attempts to be strategic

Oxford's income for teaching, fixed by government for its home students, is insufficient to maintain its traditional tutorial system, and its annual deficit is approaching A\$200m. Expansion is very difficult (due to planning limitations on medieval buildings) and considered largely undesirable. Harvard and Princeton are much smaller than Oxford, and intentionally so: size is perceived to be an enemy of quality. Decision-making is difficult and often slow, due partly to the relationship between the colleges and the university, and governance reform has been problematic. In 2004 Oxford appointed a new Vice Chancellor, and in breach of tradition chose someone with a strategic management background rather than an Oxford scholar.

Patterns of teaching and assessment are determined not by evidence of either effectiveness or efficiency, but by tradition. Academics' contracts specify the number of tutorials they should give each week. Most, and in some cases all, marks are derived from final unseen examinations. Probably no other institution in the world specifies both the nature and quantity of teaching methods and the assessment method, in advance of the design of any particular course, to this extent. There is little performance appraisal. Teaching is rarely taken into account to any great extent in appointment or tenure ('re-appointment') decisions and plays almost no part in 'recognition of distinction' for Readerships and Professorships. There is no promotion – there is a single salary scale related to age and a Professorship does not affect your salary. Pay is markedly lower than international competitors and teaching loads markedly higher. There is a very strong teaching culture and extensive, individualised and effective student support undertaken almost entirely by academics rather than by 'support staff'. Student entry is so competitive that almost all have 'perfect' schools leaving grades and other means have to be developed to distinguish between them, including interviews with every applicant involving both the department and the college.

An Oxford team participated in a national 'Change Academy' four-day event at which institutional teams worked on major change initiatives. The Oxford team involved the Pro-Vice Chancellor (Academic), two heads of division (like Deans), a 'head of house' of a college, a senior tutor, the finance director, and myself, as Director of the Institute for the Advancement of University Learning. We had a brief from the Vice Chancellor to develop a corporate plan that would encompass strategic changes to teaching. The outcomes of the work undertaken at the Change Academy fed into the writing of a strategic 'Green paper', wide consultation within the university, much debate and controversy, and some progress. The elements of the corporate plan that are now planned to go ahead that relate to teaching include:

- attempts to address undergraduate teaching issues indirectly, through, for example, reviewing academic contracts and exploring ways to increase flexibility of duty allocation mechanisms, improving support for graduates and others who teach so as to reduce teaching workloads, rewarding excellent teaching, focussing on the learning environment rather than on individual teachers, developing a four-level scheme for the development of all types of teachers (graduates, contract researchers, new academics and experienced academics) in relation to national professional standards, and continuing with a research-informed approach to all aspects of teaching development and educational policy.
- a much stronger focus on graduate learning, whether or not expansion of graduate numbers goes ahead. Patterns of graduate education are less immersed in tradition and the college system and are therefore more open to change. A 'Centre for Excellence in Preparing for Academic Practice' has been established to develop all aspects of graduates' and contract research staff's academic practice, including their teaching and their generic skills, with over A\$10m funding over five years. A national benchmarking group of the top eight research institutions in the UK has been formed to collaborate on this development. A proposal for 'Academic Assistantships' has been developed and approved subject to consultation. Academic Assistants would be like Teaching Assistants but encompassing all aspects of academic work and involving preparation and support for teaching and other academic duties, and guaranteed income. An Oxford version of the Course Experience Questionnaire is already in annual use with results on a public web site and a graduate experience questionnaire is under development for both taught graduates and DPhil students.
- a continuation of the benchmarking process involving the international network described above;
- an overall strategy for the delivery of professional development support that involves devolving and embedding, using all available resources to fund staff within departments, through temporary secondments and buy-outs, to design and implement their own local schemes for training and mentoring, and using centrally available expertise to develop local capacity rather than to provide services directly to teachers.

These may not seem especially radical steps, but they are markedly more strategic, wide-ranging and large scale than previously and are intended to be aligned with institutional values, priorities and ways of operating. They address infrastructure issues rather than trying to work round them, and they involve looking outwards through benchmarking (as with international research performance comparisons) rather than looking inwards and backwards.

Conclusions

It has been argued that organisations cannot change simply through instituting centrally driven strategic change processes and that individuals need to change if organisational change is to have any substance. The kinds of networking, collating and discussion of practice and building functioning communities of practice that are associated with such change in individuals, are reasonably familiar to those involved in teaching development. However it also seems clear that the traditional educational development focus on changing individuals (or on individual practices or on individual courses) is also not enough. Without large scale strategic approaches, especially in crucial aspects of the teaching infrastructure, institutions have over the past twenty years

changed much slower than have the environments within which they operate and have as a consequence run into severe problems that individual teachers feel powerless to tackle. In the UK many institutions have made rapid progress in learning how to be more strategic about changing what used to be the private domain of teaching. In research-intensive institutions in the UK the progress has been much less marked and they are now facing the kinds of teaching dilemmas and difficulties that the Polytechnics faced two decades ago, but with less expertise with which to address them and with most of their attention diverted to research. An international network of leading universities has been examining how teaching can be developed even in highly research-intensive environments and the range of strategies and tactics being adopted is gradually being articulated and understood. Even institutions such as Oxford are becoming a little more strategic about developing teaching, and teaching development staff are having to learn new skills and adopt new approaches to support these strategies.

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