

# WHATEVER HAPPENED TO THE IVORY TOWER?

## PROCESS CHANGE IN HIGHER EDUCATION: FROM TQM TO BPR<sup>†</sup>

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*This paper considers the impact of the unprecedented changes facing higher education upon the traditional assumption that the hallmark of universities has been and always will be that of quality. This implicit assumption now faces the challenge of new ways of demonstrating quality, at a time of an eroding unit of resource. The paper briefly overviews the changes taking place within British higher education which require a new approach to quality management. A way forward is explored through the implementation of Total Quality Management (TQM) and Business Process Redesign (BPR), drawing on experiences at the author's own institution, and at another in the USA.*

Most academics would like to believe that quality has always been part of the tradition of higher education, even though the processes for achieving this have varied between different cultures and countries. As Frazer (1994) illustrates however, in recent years and in a variety of ways, this comforting assumption has been called into question in many countries.

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Essentially the "ivory tower" image of universities, whereby the academic way of life was considered by many to be remote from the rest of society has eroded in the face of consumerism and movements towards mass higher education. Universities are now having to demonstrate the quality of their work in unfamiliar ways to a much wider audience, in the face of increasing intervention from external agencies.

For instance, the last decade and a half has seen various far reaching changes affecting the size, structure and resourcing of the British higher education system. In 1979, only one in eight young people entered higher education, whereas by the mid 1990s the participation rate has risen to nearly one in three. The expansion has gathered pace over this period with a 53% increase in home students on undergraduate and postgraduate courses since 1988/89. There is also much more heterogeneity within the system in terms of both the student population and the courses which they follow. This expansion has been achieved despite a lowering of the unit of resource, as overall funding per student has been cut by over 25% in real terms over the past five years and the next three years are likely to see at least a further nine percent reduction (CVCP, 1995).

Structural change has also been introduced which has removed the "binary line" as until 1993 British higher education was divided into university and polytechnic sectors with different missions and funding arrangements. The universities concentrated on research and on teaching undergraduates and postgraduates, whereas the polytechnics had a much wider portfolio of teaching, including sub-degree work and many vocational courses but carried out less research. In comparison with polytechnics and colleges of higher education, universities were accorded more autonomy and benefited from a system of specially designated funding for research.

In 1993 universities and other higher education institutions all came under the same funding body and the former polytechnics and many of the colleges of higher education, also took on the title of university. Thus the

"university sector" more than doubled as a result of these changes, and with the sharing of a common title and basis for funding, former distinctions about the type and quality of educational provision have rapidly become more blurred. Alongside these structural changes various new forms of quality control have been introduced. Back in the mid 1980s research selectivity was introduced by the government funding body, with institutions graded in terms of the perceived quality of their research, based upon peer review. Initially no direct funding implication followed from this system but along with the other changes in the 1990s and the repetition of the exercise, now direct funding for research (as opposed to funds distributed via research councils) is based on an institution's research rating, rather than the "old" university system, whereby research funding was based upon student numbers.

Attention has now turned to quality assurance processes within universities. First of all quality audit was introduced to determine the adequacy of an institution's quality assurance procedures. A separate process has also been put in place to assess the quality of educational provision for different disciplines within an institution. It is anticipated that the two systems of audit and assessment will be brought together. Although at present the grading of disciplines is not tied to funding for English universities, the experience with research assessment and indeed teaching assessment within the Scottish Higher Education system, suggest that such a move is only a matter of time.

Such a period of unprecedented change has inevitably brought strains in the system. Universities are now educating more students for a lower unit of resource, even though total funding for teaching has increased in real terms by 45% since 1989 (CVCP, 1995). Thus the implications of expansions in student numbers for public expenditure, coupled with the quest for better public services generally, growing competition for both resources and students and the inevitable tensions between efficiency and effectiveness in service delivery have led to much of the current concern over quality and standards in higher education (Green, 1994).

Although circumstances vary, the situation for higher education as the century draws to a close is not so very different in other countries. For instance, Lewis & Smith identify changes in American higher education, which heighten the need to take issues of quality seriously. As in Britain, there is a changing environment in which competition for students and funds continues to increase, at a time when institutions are having to accomplish more with less (Lewis & Smith, 1994). Australian higher education is also characterized by change, having undergone rapid expansion since the late 1980s, coupled with declining levels of funding. This has occasioned concerns over quality assurance and the setting up of a national structure, independent of the government, to report and comment on university quality assurance (Hambly, 1995).

An international study of quality in higher education which considered the UK, USA, and Australia, as well as France, Germany, Hong Kong, India, the Netherlands, New Zealand and South Africa found multiple sources of concern for quality coming from government, tax payers, employers, students and their parents and academics and managers in universities in the various countries. The author identifies a range of different types of agency concerned with quality in these countries, including university-owned agencies, government agencies, validating and accrediting bodies, and awarding and other non-governmental agencies. He argues for the importance of self-evaluation by institutions, rather than evaluation by external agencies but suggests that it should be aided by external quality assurance agencies. This requires staff development and training to facilitate self-evaluation and information on best practice and innovation in teaching, learning and assessment to be disseminated (Frazer, 1994).

## **TACKLING QUALITY IMPROVEMENT**

Thus the global scene for higher education is one of change coupled with more overt concerns over quality assurance and the ways in which



this can be managed. Faced with a changing environment and the need to demonstrate quality of provision in research and teaching, universities have had to respond to these pressures by finding their own path towards improving their performance as a deliverer of services, in ways which are commensurate with their particular mission and cultural context.

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At the author’s institution Aston University in the United Kingdom, an awareness of the need to manage processes more effectively, began in the mid 1980s with a programme of management development for senior academics and administrators. This was followed by further workshops and seminars to provide insights into the various attempts to bring about quality improvements in industry. At the same time, a more bottom up movement was also taking place with Quality Circles being formed by groups in different parts of the university, for example amongst support staff in the business school and by the university cleaners.

Then, in the early 1990s, the university decided to adopt a Total Quality Management philosophy based upon Kaizen and the principles of Deming. A consultant, with experience of TQM in industry, was appointed to facilitate the setting up of a university Quality Council, composed of senior academics and administrators, including the Vice Chancellor, the Pro-Vice Chancellors, the Deans of Faculties and Heads of all the central services departments. The Quality Council identified the major processes within the university and their related critical success factors (CSFs). Each

process was then nominated a process owner, who invited others to join that Process Council from across the university. The different Process Councils went through the same procedure, in order to establish their sub-processes and CSFs and then identified problem areas where quality improvement projects (QIPs) would help to enhance the effectiveness of that process. These QIPs would recruit new members, thus through a cascading principle, continuous improvement could be achieved across the university. The movement was facilitated by training courses on quality awareness and tools and techniques of quality management, which were open to all staff in the university. Those involved in Process Councils were encouraged to complete the training programme as early as possible.

### **SOME REFLECTIONS ON TQM IN ACTION IN THE UNIVERSITY CONTEXT**

The TQM approach was pioneered within industry, but has been spreading to other sectors in many parts of the world (Lawler et al., 1992). Educational institutions have been seen as slow to adopt TQM (Madu et al., 1994; Weller & Hartley, 1994) even though business schools and various engineering departments now teach courses in this area. Also successful implementation of TQM has been far from universal and there is growing recognition that the various principles propounded by the TQM gurus are not universally applicable to all organizations and organizational activities but contingency dependent (Sitking, Sutcliffe & Schroeder, 1994). Boaden (1994) argues that there is now recognition amongst organizations that a universal definition is neither desirable nor applicable and that they therefore develop their own definitions of TQM to suit their own particular culture. Nevertheless, she identifies four "Hallmarks" of TQM from the literature as: customer satisfaction, leadership, quality awareness by all employees and a supportive organizational culture (Boaden, 1994:470).

In the university context, such basic elements have different implications from in industry. For instance, there are different facets to the concept of the external and the internal customer for universities, as their two core products, student education and research have various different customers. In the case of the teaching and learning experience, there are not only the students themselves as customers and their parents who support them but also employers who have a stake as consumers of the products of universities. Similarly, in the case of research, various funding bodies representing government, industry, etc., have to be satisfied, as well as the academic community.

Universities are "people intensive" organizations, with for instance around 70% of the resources of universities in the UK taken up with employment costs. There is growing recognition in the literature of the importance of human resourcing issues for the successful implementation of TQM (Boronico & Mosca, 1994). What is often referred to as the "soft" side of TQM relies on the ability of the institution to create an organizational culture in which quality awareness is endemic. This requires people to have a deep rooted commitment to quality and the competence to build these concerns into their everyday work. Leadership is central to building such a culture but training and development in appropriate tools and techniques is also required to turn intentions into reality.

Leadership in professionally based institutions like universities might at first sight appear not to be as complex an issue as say finding appropriate tools and techniques for the academic environment, but this is not necessarily the case. There are cultural traditions in universities about academic freedom and autonomy, which typically make the exercise of leadership a more diffuse and less top down process, than say in industry or government. The commitment and active involvement of the most senior members of an organization is a key factor in diffusing the TQM approach in any type of organization. Thus leading by example is

important in all organizations, including universities but there are other differences in relation to the diffusion process.

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In a command structure, it may be acceptable to require employees to participate in quality training as a way of overcoming initial resistance. In the more democratic structures of the university, it is easier for academics in particular to remain complacent about quality and simply to reject the need for a new approach. Others who are interested and ready to be involved are still likely to be very skeptical of an approach, if it does not appear to deliver results in the areas which directly affect their teaching and research. Thus the form and content of the training has to be handled with sensitivity. Models lifted directly from an industrial context are unlikely to capture the imagination and enthusiasm of participants from higher education. Although cultural change is less easily facilitated in these circumstances, arguably if achieved, it may be more thoroughly internalized and profound, as it has successfully run the gauntlet of those trained to question and challenge the assertions of others. These are just some of the facets of attempting to implement TQM in universities, which is in any case recognized as neither a quick nor easy process.

The slow path to process improvement via TQM is further exacerbated in the university context, through the decision making structures which abound, with academic boards, committees, sub-boards, working parties etc. The existence of such a plethora of often democratically structured

bodies, not only makes for slow decision making, but also has implications for the introduction of still more groups in the form of say process councils. The latter are normally based upon cross functional membership but this too can be the case with traditional university bodies and the possibilities for confusion, duplication of effort and suspicion are seemingly endless. Also the outcomes of the "business as usual" approaches to work in the traditional bodies can certainly, at least at first, appear to be far more productive than the early faltering steps in attempting to apply TQM principles and techniques.

The strength of the TQM approach is that it is based around the vision, mission and strategic direction of the organization, so that any quality improvements that follow should address the core concerns of the institution. Nevertheless the complexities of sorting out TQM issues within universities and getting agreement on such matters as "what are the critical success factors for a process?" "who are the customers?" "what are the root causes of a problem?" or "how can we measure this process?" are seemingly very slow, even to those directly involved and familiar with the methodology. The absence of the kinds of clear and tangible results, which are typically arrived at more quickly say through the often simpler function based work of Quality Circles, or even the traditional "business as usual" committee structures, can make it particularly hard to establish the credibility of a TQM approach in a university, even to those who claim to be aware and concerned about issues of quality. This is especially the case with academics, who tend to view any participation in activities which is not directly and immediately related to teaching and research, as a distraction from their "raison d'etre".

### **Shared Experiences**

A recent account of the implementation of TQM in an American University acknowledges that it too has proved to be "more challenging

than many of us realized at first" (Coate, 1992, cited in Lewis & Smith, 1994:255). At Oregon State University the barriers were identified as:

- Skepticism* - it's seen as a fad.
- Time* - it's another assignment.
- Language* - suspicion of industry based jargon-laden language.
- Middle management* - teamwork approach is unfamiliar.
- University governance* - committees are used to "doing their own thing" without reference to overall institutional mission and vision.
- Dysfunctional units* - TQM brings hidden problems to the surface and perhaps intensifies them.
- Attitude* - individual resistance to change is compounded organizationally.

In the account of Oregon's experiences, as at Aston, the argument is made that these barriers have to be recognized as part of any change and should not distract from what has been achieved. Rather, Coate argues that they should be tackled through: Support from the top, the "Just do it" principle, focussing teams on process improvement, finding champions to see it through, using breakthrough (Hoshin) planning and introducing TQM into the service or administrative side first (Coate, 1990, cited in Lewis & Smith, 1994:259).

In many respects the last prescription could be seen alternatively as either walking away from the real problems or as a sound short-term tactic. Certainly the experience at Aston suggests that progress on process improvement projects has been more immediate in some of the central

services areas, as for instance in bringing about process redesign within the library to meet the reduction in staffing. Also quality improvement projects, even if they are led by people associated with a support service, are likely to be more readily supported by academics if they are seen say to benefit the student experience. In the end though, to realize TQM in an educational institution it cannot be left to support services to drive the initiative, as it has to have commitment from academics and directly infuse their approach to their work.

### **FROM TQM TO BPR?**

The step-wise approach to quality improvement through TQM provides an institution with an important underpinning to process change but sometimes external events in particular intervene, which cannot be addressed, simply through continually improving existing processes. Although still maintaining the TQM thrust, some of the thinking behind BPR is also being implicitly adopted at Aston. BPR originally stood for Business Process Re-engineering but has subsequently encompassed a range of variations including Business Process Redesign, Business Transformation and Re-engineering but all imply radical organizational change (Courtney, 1994:226).

BPR, like TQM, aims at achieving strategic redirection but according to BPR proponents, this is done through more fundamental rethinking and the radical redesign of business processes (Hammer & Champy, 1993). Thus it is argued change is taken further through BPR to achieve organizational transformation. This is achieved most effectively through a fundamental reappraisal of business activities, by revising the business strategy and business planning, redesigning business processes and rethinking management approaches (CCTA, 1994).

Organizations have been depicted as turning to the more radical approaches to change propounded by BPR, when faced with significant



external threats (Burke & Peppard, 1994). Certainly for universities today, the external environment is perceived as exceptionally hostile and posing a threat to a well established and much valued academic way of life. This may require a more fundamental reappraisal of organizational processes than would stem naturally from the methodology for continuous improvement with TQM. Also it is argued that successful re-engineering requires attention to be given to changing management processes, as well as operational processes (Champy, 1995).

In response to the need to become more effective and efficient, at Aston a trading company model (TCM) approach has been recently introduced to give heads of individual departments (both academic and support services) greater knowledge and understanding of their finances in relation to those of the rest of the institution. In some respects TCM is seen as divisive and moving in the opposite direction to TQM. Whereas TQM is based upon cross functional teamwork to achieve process improvements, the TCM encourages an individualized departmental perspective. Hence when changes in funding forced the university to cut its staff costs, heads of academic departments argued successfully for the greater burden to fall upon central services. One path towards resolving such tensions has been to redesign part of the process for allocating resources. Service level agreements are now being negotiated between departments which specify the services required and their cost implications. Thus for instance an academic department would specify the core services it requires from a support service to be met from central funding. If additional services are also requested, the costs would then have to be met by the academic department.

This type of process redesign helps to resolve some of the tensions arising from reductions in funding but it does not fundamentally change the ways in which academic work is conducted. When universities are faced with taking more and often more diverse types of students, without commensurate increases in funding, there is a limit in the extent to which economies can be made, whilst continuing to teach in traditional ways.



One way to maintain standards but make more effective use of resources is to redesign the teaching processes, involving say more stream lined structures which cut out duplication of effort in teaching and in support. This may also require a radical rethinking of the role of technology in teaching to find effective ways of exploiting the use of technologies to enhance the learning experience, whilst also easing the burden on staff time.

The democratic traditions of universities involve a great deal of time being taken up for academics in different types of committee work, to arrive at consensus decision making. At the author's institution it is recognized that a radical review of the university committee system is needed, to create a more responsive and dynamic approach to decision making. At present the work of the more recently created process councils runs in parallel to the traditional committee structures, which is not an effective use of scarce resources. To have a major impact upon the ways in which the University goes about its business, a strategic redesign of organization wide processes is required. As Ovenden has argued a customer focus is at the core of successful BPR, as without them there would be no business. He questions how many activities are in place in a business just to satisfy the internal wishes of the company's own organization (Ovenden, 1994:57). This same question can usefully be asked of universities, as an acid test of the need for a particular committee say would be to demonstrate how it contributes directly to the educational experience of the student - would the students or indeed research suffer if this activity did not take place?

It has been argued that BPR, in its current stage of development, more often focuses on projects in particular functional areas (Morgan, 1994), but where some of the most successful applications have taken place, these have been across the supply chain. For instance Proctor and Gamble and Wal-Mart have co-operatively set out to redesign radically their joint consumer - retailer - manufacturer chains, to benefit both companies. (Hewitt, 1995:151).

Within the context of higher education the supply chain focus to process change also has much potential. For instance the greater diversity of students entering higher education makes it difficult to continue to work with teaching programmes based upon earlier assumptions about prior learning and discipline knowledge. In the British context universities have traditionally relied upon recruiting students who have passed nationally recognized "A" level examinations. Now that more open access to universities is being encouraged, applicants are coming forward through recently introduced "Access Courses", which are very different from conventional "A" levels. These applicants are often more mature students who live in the vicinity of a university. Close collaboration with local colleges can help universities to adapt their selection procedures and to design courses which are appropriate for such non-traditional university entrants.

At the other end of the supply chain, closer links with employers can greatly assist the successful placement of students in employment upon graduation. Aston University has many "sandwich" programmes where students work for a year for an organization during the third year of their four year programme. Managing these schemes involves very close links with employers nationally and abroad. The types of programmes that it offers and its close links with employers has enabled Aston for many years to be at the top of the league for the employability of its graduates. Drawing on these links with employing organizations to ensure a user perspective during the redesign of programmes, facilitates the ease of transition for students from education to work.

## **CONCLUSIONS**

This paper has overviewed some of the strategic issues which are facing higher education in the final stages of the twentieth century and has cited attempts by institutions to work towards more viable approaches for the future. TQM is gaining acceptance in various quarters as a means of

bringing about process improvements, although it has had less visible success in the context of education than in industry (Weller & Hartley, 1994).

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The question is whether continuous improvement in processes alone will prove to be a sufficiently effective route to greater efficiency and effectiveness in higher education or whether a more radical approach, say in the form of BPR is needed? Whilst TQM according to some proponents is the answer to every organizational ill, it can also be criticized for its reliance on the cumulative benefits of many small improvements, inherent in the continuous improvement approach. The improvements that are achieved through TQM will be important to the organization but situations may require things to be done radically differently and this is where the BPR approach can provide a way forward. Nevertheless this does not mean that organizations are faced with an either-or decision, as both approaches can add value and be complementary (Burdett, 1994).

Thus current thinking suggests that a way forward is for BPR to build on to the gains being achieved through TQM rather than replace it. Reflecting on the experiences of her own and other institutions, this author concludes that if the core business of a university, that of teaching and research, is to be significantly enhanced, it is unlikely that any one recipe for change will provide an adequate answer. The higher education sector is particularly dynamic and an institution needs to be capable of both

anticipating and responding to change, in ways which have not been typical of much of British higher education to date. One way of creating a more dynamic system is for institutions to be prepared to sacrifice their tried and tested ways and to experiment with other approaches, whilst avoiding the situation where the "new of today", becomes the "sacred cow of tomorrow". TQM has an attraction for universities as a response to the need to manage more effectively, especially if it is perceived as an adaptive way forward. However, faced with scale of changes confronting higher education in the UK and elsewhere, it is unlikely that improving the ways in which the same can be done with fewer resources is likely to provide an adequate strategy for survival. This is why the more radical approach associated with BPR, especially if it is conceived in terms of supply chain relations, is likely to become a more propitious way forward for higher education.

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