INQAAHE PAPER

Conference Sub-Theme: Track 4 – Effectiveness of Quality Assurance

Title: **Is it Possible? Investigating the Influence of External Quality Audit on University Performance**

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Abstract:

This paper explores whether it is possible to isolate independent effects of external quality audit (EQA) and concludes that effectiveness evaluations have a stronger foundation when the combined effects of University governance and management initiatives, and government initiatives together with EQA are examined. These effects often overlap and interact, and, combined with the multidimensional structure of university performance, result in both positive and negative influences. The issue of how successful these influences are is addressed in relation to changing the processes of a university to the benefit of learning outcomes, teaching effectiveness, and enhancements in the quality of research outputs. The paper looks at the subject of how to measure quality and whether there is value in the use of a research-led, evidence-based approach. The authors seek to identify the impact EQAs have had on one institution, the University of Otago, in New Zealand, over the past ten years, as an illustrative example of what is occurring nationally, with relevance to the global level. The authors have developed a model which contextualises the role of external and internal influences in university performance. We invite researchers to apply the evaluation methodology developed herein with the aim of advancing understanding of the influence of EQA in international contexts.

Preamble

External quality audit (EQA) has been implemented in a wide variety of systems in many universities around the world. While some countries have only recently been introduced to quality processes, in others the quality movement has been extensively developed and refined. EQA has been strongly criticised, including by some who advocate abandoning the process. However, there is support from those who believe equally strongly that EQA has made a significant positive contribution to higher education. While quality issues continue to be vigorously debated, there appears to be a dearth of information globally on the actual impact of quality audits. Those who support the continued implementation of EQA have not identified specific evidence of the impact of these audits on the performance of universities. Whether this is because the task is achievable but someone has yet to take up the challenge, or whether it has been attempted and aborted due to difficulties encountered, is uncertain. An examination of the impact of EQA on university performance was the challenge the authors of this paper accepted. The authors have sought to identify the impact EQAs have had on one institution, the University of Otago, in New Zealand, over the past ten years, as an illustrative example of what is occurring nationally, with relevance to the global level.

Operational Definition of Quality

Quality is achieved by identifying and satisfying students' needs and by continually improving processes and their outcomes. The authors adopt an interpretation of quality derived from the Baldrige 2004 Education Criteria for Performance Excellence (Table 1), adapted for universities. The Baldrige Criteria are the basis for organisational self-assessments and have two key roles: the provision of ever-improving educational value to students, contributing to their overall development and well-being; and improvement of overall institutional effectiveness, uses of resources and capabilities (Baldrige National Quality Program, 2004). The original Baldrige criteria do not include a research focus, which has been added. The amended criteria provide a framework in which the quality processes of the institution can be measured.

Table 1: Education Criteria for Performance Excellence
(Adapted from Baldrige National Quality Programme 2004)

Leadership
Strategic Planning
Student, Stakeholder and Market Focus
Measurement, Analysis and Knowledge Management
Academic and General Staff Focus: • Education, training and development • Wellbeing and satisfaction • Communication and consultation
Quality of Process, Product and Service: • Quality Systems • Teaching, learning and assessment • Research and postgraduate study • Community Service • Support processes
Higher Education Institution Performance Success

Impact of External Quality Audit (EQA)

Our examination of the impact of EQA begins with an analysis of the current context surrounding university performance in New Zealand, the influence of other external bodies on university performance, and the part played by quality audits in influencing university performance. The authors have created a model (Figure 1) to assist in identifying and describing the different variables at play. We utilise this model to facilitate a discussion on the roles of external and internal influences on university performance within the New Zealand context[1]. Figure 1 illustrates both the ideal, where external and internal influences are moderated by internal processes, to improve university performance; and the reality of most institutions, where the inherent inertia of the existing internal university processes partially or totally dissipate any benefit that could arise from the external influences. In turn, university performance impacts on: internal university processes; internal university influences; and external influences.

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[1] As of June 2004, there were over 560 tertiary education providers operating in New Zealand. This includes 8 universities; 20 polytechnics; 4 colleges of education (2 of which have recently merged with universities) and 3 wananga*.

* *A wananga is characterised by teaching and research that maintains, advances, and disseminates knowledge and develops intellectual independence, and assists the application of knowledge regarding ahuatanga Māori (Māori tradition) according to tikanga Māori (Māori custom). Apart from this distinguishing feature, Wananga deliver programmes and operate within the same guidelines as Universities, Polytechnics and Colleges of Education.*
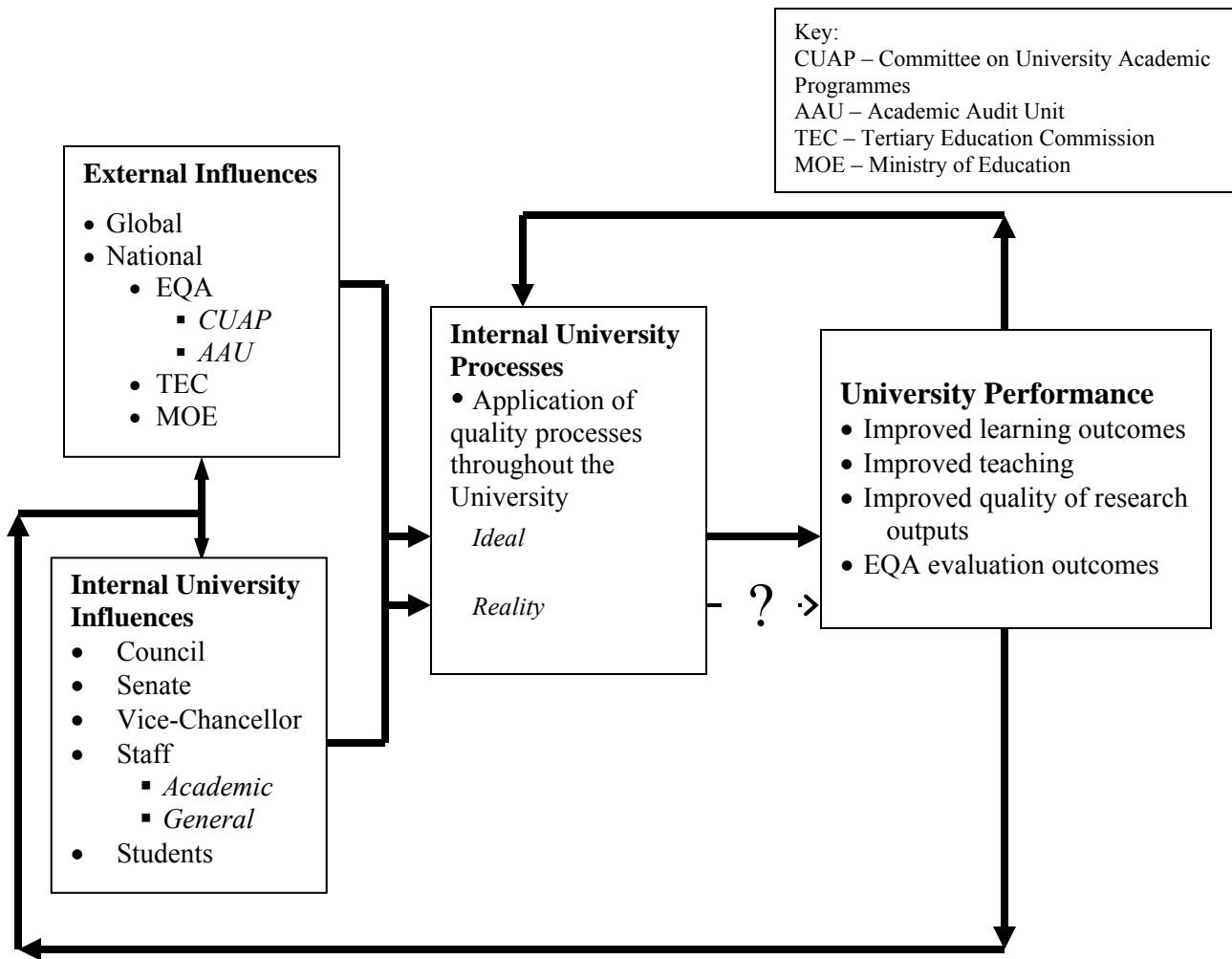
Key:
CUAP – Committee on University Academic Programmes
AAU – Academic Audit Unit
TEC – Tertiary Education Commission
MOE – Ministry of Education

External Influences

- Global
- National
  - EQA
    - *CUAP*
    - *AAU*
  - TEC
  - MOE

Internal University Processes
- Application of quality processes throughout the University

  Ideal

  Reality

Internal University Influences
- Council
- Senate
- Vice-Chancellor
- Staff
  - *Academic*
  - *General*
- Students

University Performance
- Improved learning outcomes
- Improved teaching
- Improved quality of research outputs
- EQA evaluation outcomes

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Figure 1: The role of external and internal influences on changing internal university processes to the benefit or detriment of university performance (as applied to New Zealand).

External Influences

As the massification and globalisation of higher education increases, higher education institutions are faced with increased external influences and levels of accountability. During the past two or three decades, institutions have been faced with an increase in the levels of legislation and involvement from national and local governments, especially in attempts to assure the quality of higher education through formal assessment techniques and accountability processes (Schmidtlein, 2004:264). This increase in accountability has put pressure on institutions to change the way they operate.

Governments are challenging higher education institutions to articulate publicly what they are doing and to measure the achievement of objectives (Meade, 2003:9). The current debate in the UK regarding the closing of 'non-productive' departments illustrates how external pressures can influence the internal processes of a university. Universities have reversed decisions to close departments following public outcries against the decision, for example the Cambridge Department of Architecture. Recent articles in the Times Higher Education Supplement (THES) have illustrated how the governments of France, Germany, Italy, the USA and Australia have differing levels of involvement in the decision-making processes of higher education institutions. There has been a move, external to higher education institutions, towards introducing the concept of higher education as an "industry" as opposed to a "social institution" (Schmidtlein, 2004:264). These changes have meant that both governments and students have increasingly firm expectations of demonstrable accountability and returns for their investments (Coaldrake and Stedman, 1999:5).

Higher education institutions are also having to show that they provide benefits to the community and meet the needs of the nation. One of the more extreme example of this is the Bologna Process in Europe, which is resulting in the creation of a European Higher Education Area in which the systems of higher education in all member nations will be placed into a common frame based on three outcome levels – Bachelor, Master and Doctoral – and recognised different paths according to which they were achieved. The upheaval and change in operation and process for the institutions is, and will continue to be, considerable for a number of years.

Within New Zealand, the New Zealand Vice Chancellors Committee (NZVCC) exercises quality assurance in two different ways. Its standing committee, the Committee on University Academic Programmes (CUAP), is charged with setting up and applying programme approval, accreditation and moderation procedures. It is the body to which universities must submit any proposals to offer new qualifications or to make substantial changes to existing qualifications. NZVCC has also established the New Zealand Universities Academic Audit Unit (AAU). The AAU is an independent body whose chief function is to conduct institutional audits of universities (NZVCC, 2004). The function of the AAU is indicated in Figure 1. Parallels to these bodies can be found in a large number of countries around the world, such as the Australian Universities Quality

Agency in Australia, Teaching Quality Assessment in the United Kingdom, and The Post-Secondary Education Quality Assessment Board in Ontario, Canada.

The CUAP process involves peer review through the evaluation of programmes by discipline specialists at each institution. When a university presents a programme for approval, documentation supporting the proposal is electronically sent to all other New Zealand universities, and appropriate staff within each institution selected as reviewers to critically evaluate the proposed programme. Evaluative comments from reviewers are relayed to the proposing institution, and the documentation supporting the case is often amended by originators of the new programme in light of critical feedback. Using this method, most programmes are approved by university nominees prior to an actual CUAP meeting. In cases where approval is not granted by peer reviewers, the full CUAP committee resolves whether to accept or reject the accreditation proposal. If a proposed programme fails to obtain approval by CUAP, it is not funded by the Ministry of Education (MOE).

A review of CUAP minutes reveals that academic programme proposals of some universities feature on the CUAP meeting agenda more frequently than others. Each university has established a track record based on the past excellence or otherwise of its academic programme development. Once CUAP members accept that a particular university does a very good job with its programme proposals, it is likely that members' views are moderated as they evaluate new proposals.

Following its establishment in 1993, the AAU has undertaken two complete cycles of EQA and is currently conducting a third. The Audits involve universities undertaking a self review process, which is documented in a Performance Portfolio. The Portfolio is assessed by a quality audit panel of trained auditors who visit the university over a three-day period. The resulting Audit Report provides commentary on the university's performance in relation to audit objectives, commendations of current activities, and recommendations for areas of improvement. Each university then has the option to continue a dialogue with the AAU as the recommendations are worked through. The AAU has produced audit reports that are generally considered to be authoritative, rigorous, fair and perceptive. The AAU has earned respect in its primary roles of accountability and improvement in the university sector. The general consensus among universities in New Zealand is that the extensive self-review process (occasionally including trial audits) engenders considerably more improvement initiatives than do the AAU audit reports.

As with CUAP, each New Zealand university has established a track record with the AAU. Indeed the AAU states in its audit manual that the more thorough a university's self review prior to audit, the more the AAU's EQA process turns to one of validating the university's own processes (NZAAU Audit Manual, 2002:4). If a university's self-review is superficial, the AAU will thoroughly investigate the areas not dealt with in the self-review. In the first round of audits in New Zealand there were examples of institutions representing both extremes. A number of universities developed self-review

processes which included a full scale trial audit, designed to be as rigorous and thorough as the actual audit.

In addition to EQA, there are a number of other external influences impacting on universities. First and foremost in many countries are the various levels of government. For example, in 2002, the New Zealand Ministry of Education established the Tertiary Education Commission (TEC)[2] to regulate funding made available to universities. TEC impacts upon university performance through influencing the internal processes of universities. However, its impact has the potential to exert more leverage than those of EQA, due to the importance placed on government funding for institutions. Resource considerations and financial implications are important to universities and in New Zealand, the Government, through the TEC, is forcing reform in universities by manipulating methods of resource distribution.

New Zealand's Ministry of Higher Education has recently introduced two funding initiatives, which are set to have a significant effect on universities. In 2003 a Government trial was undertaken of the Performance Based Research Fund (PBRF)[3], similar to the Research Assessment Exercise in the UK. As a result, New Zealand universities have been introducing new policies and processes to maximise their PBRF outcome. The exercise has the potential to result in competition between NZ universities as a proportion of government funding will be divided up on the basis of institutional rankings determined by PBRF results. It is worth noting that the PBRF exercise is akin to an EQA process with a narrow research focus.

In an attempt to offset possible negative effects of PBRF, to help students succeed and to make teaching quality a priority in universities, the Ministry is in the process of introducing a new scheme entitled Performance Element of the Student Component (PESC). The introduction of PESC will complete the Ministry's redesign of the way New Zealand universities are funded. One element of PESC will see students surveyed about the quality of the programmes they are studying. The former Associate Minister of Education[4] declared that funding will be driven more by learning results and less by enrolments. The TEC will also collect information on course retention rates and successful course completions
(http://www.beehive.govt.nz/ViewDocument.cfm?DocumentID=21343).

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2 The Tertiary Education Commission (TEC) is a crown entity established under the provisions of the Education (Tertiary Reform) Amendment Act 2002. TEC is responsible for funding all post-compulsory education and training offered by universities, polytechnics, colleges of education, wananga, private training establishments, foundation education agencies, industry training organisations and adult and community education providers. One of the TEC's key roles is to oversee implementation of the Tertiary Education Strategy and associated set of priorities.

3 By 2006 PBRF will see the replacement of postgraduate funding via the Equivalent Full-Time Student Numbers (EFTS) by a process which will allocate funding using a combination of the quality of research undertaken by staff, research degree completions and the amount of external research income received.

4 At the time of this announcement, (29 October 2004) the Associate Minister of Tertiary Education was the Hon Steve Maharey.

There is no doubt that PBRF and PESC will have an impact on the way universities operate. Concern at the inertia and slow pace of reform in the tertiary sector has likely been an incentive behind this reform (Gerritsen, 2004:8). It appears that the Minister of Education[5] doubts that AAU alone is able to bring about the reforms he is seeking, that is, improving the quality of learning and improving the quality of research output. It is anticipated that universities will initiate desired reforms to protect both their reputations and their funding base.

Internal Influences

External influences are often exacerbated by the internal influences within a university, including influences emanating from leadership, staff and the student body (Figure 1). Some internal university influences are prompted by the university's own strategic plans and priorities, such as the brand a university seeks to consolidate. In New Zealand internal university influences are initiated in response to the manoeuvres of the EQA, TEC and MOE. The significant changes to the funding and accountability requirements of the tertiary education sector have prompted university leaders to strengthen their senior management structures. Concurrently there has been a major expansion of the roles and responsibilities of academic leaders (Meade, 2003:147).

Each university is also influenced by its staff and students, who have also had their expectations changed by the increasingly competitive nature of academia. Increases in tuition fees have generally influenced how students perceive their education and resulted in higher expectations of the quality of university education. Students now expect a greater role in the governance and decision-making processes of universities (Coaldrake and Stedman, 1999).

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5 The Minister for Education is the Hon Trevor Mallard. In January 2005 he added responsibility for tertiary education to his portfolio.

The University of Otago

The University of Otago is New Zealand's oldest university, and was founded in 1869. The University has campuses in each of the four main cities of New Zealand – Auckland, Wellington, Christchurch and Dunedin. The academic and administrative centre is situated in Dunedin, where the majority of students live and work. The Vice-Chancellor heads the University, and is supported by two Deputy Vice-Chancellors. The governing body of the University is the University Council, which consists of both appointed and elected members, and is headed by the Chancellor. It seeks the advice of Senate on matters of academic policy. In 2004[6] over 19,000 students were enrolled, compared with 15,000 in 1994. Almost 80% of Otago's students came from areas outside of Dunedin. Just over 2,600 international students were enrolled in 2004, compared with 589 in 1994. The University employed 1,578 full-time equivalent academic and research staff in 2004, as well as 1,681 full-time equivalent general staff.

Interaction of External and Internal Influences

In order to ascertain the impact of external audit recommendations on university performance outcomes, the authors undertook an analysis of the characteristics of the 37 recommendations of the University of Otago's 2000 Audit Report (Table 2). This analysis showed that the audit recommendations are directed most frequently at leadership, management, and planning issues, being process-driven rather than outcomes-driven. While EQA recommendations stimulate internal processes to respond, it would be difficult to draw the conclusion that improved performance will result as a direct outcome of these recommendations. These findings were further supported by our analyses of recent audits undertaken at Massey University[7], New Zealand, and the University of Queensland[8], Australia. Similar conclusions are reported by Wahlen (2004), who draws on a study of quality audit recommendations in Sweden by Stensaker (1999). Academic leadership and the establishment of goals and strategies for quality work were the main areas of focus of Swedish audit reports. The Swedish study also concluded that cultural change at the department level was modest.

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6 A comparison of the years 1994 and 2004 have been used throughout this paper. 1994 is used because it was before the University of Otago's first audit took place, while by 2004 the University of Otago had experienced two EQAs and was preparing for its third.

7 Massey University was the first Cycle 3 audit to be completed and the audit focus was on teaching quality, learning outcomes and programme delivery.

8 The University of Queensland was chosen as an example of best practice.

Table 2:   A Frequency Count of Reference to Characteristics of Quality Processes in Quality Audit Recommendations

Quality Processes: Characteristics	University of Otago, NZ	University of Queensland, Australia	Massey University, NZ
Leadership	27	15	22
Strategic Planning	6	1	1
Student, Stakeholder and Market Focus	14	1	3
Measurement, Analysis, and Knowledge Management	1	0	2
Academic and General Staff Focus:			
• Education, training and development	7	2	2
• Wellbeing and satisfaction	2	0	4
• Communication and consultation	9	2	1
Quality of Process, Product and Service:			
• Quality Systems	7	6	4
• Teaching, learning and assessment	2	5	12
• Research and postgraduate study	3	2	1
• Community Service	0	0	0
• Support processes	5	1	1
Higher Education Institution Performance Success	0	0	1
TOTAL	**83**	**35**	**54**

Our analysis of EQA recommendations leads to a conclusion that the scope of influence of audits is mainly focused on the internal processes of a university – the leadership, strategic planning and quality systems. Therefore EQA has an opportunity to influence university performance through the medium of the internal university processes.

Internal Processes

Internal processes encompass the operating structures, policies and procedures involved in enabling the university to achieve core activities. All universities have processes which involve various levels of bureaucracy. These can include:
- programme and degree approvals;
- course approvals;
- resource allocation;
- quality assurance; and
- student and academic support.

By their very nature, universities can be inherently resistant to change however, an effectively implemented operating system allows for the development of processes which can lead to change.

The Role of External and Internal Influences on the University of Otago 1994-2004

In 1994 the University of Otago appointed a new Vice-Chancellor[9], who was acutely conscious of the moves towards increased accountability and the requirements of Government. His vision for the University, "to maintain its leading or unique position in the market", (Graeme Fogelburg, as quoted in Meade, 1997:81) resulted in significant changes to the management structure as we will demonstrate.

The VC recognised the challenges inherent in the quality movement, as providing opportunities to consolidate strengths and initiate reforms (Meade, 1997). To support his plans for the University and to assist with change management he appointed a Deputy Vice-Chancellor (Academic) whose background was in quality advancement, and a Deputy Vice-Chancellor (Research and International) to develop the University's research output, and introduced a number of formal quality processes. Change was implemented at the University of Otago through a new distributed leadership structure and the initiatives of the two Deputy Vice-Chancellors, summarised in Tables 3 and 4, effectively advocating the new VC's vision.

Table 3 records the development of a personnel infrastructure supporting quality processes at the University of Otago since 1994. The number of positions appointed to support the University's academic management and quality processes has significantly increased, and these appointments have contributed to the development and introduction of a number of new policies. The new positions have been fundamental in the implementation of changes to the internal university processes. One impact has been a change in culture of the University towards recognition of the value of quality processes. Table 4 records the introduction of a committee structure to support the processes. The table reveals that there has been a marked increase in the number of such committees since 1994.

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9 Dr Graeme Fogelberg was the Vice-Chancellor of the University of Otago from 1994-2004.

Table 3: The Development of a Personnel Infrastructure Supporting Academic Management and Quality Processes

POSITIONS	1994	2004
Leadership		
Vice-Chancellor	✓	✓
Assistant Vice-Chancellor (non-academic)	✓	
4 Assistant Vice-Chancellors	✓	✓
Deputy Vice-Chancellor (Academic)		✓
Deputy Vice-Chancellor (Research & International)		✓
Director, Development Campaign		✓
Māori Affairs Adviser		✓
Strategic Planning		
Head, Planning, Support and Funding		✓
Student, Stakeholder and Market Focus		
Director, External Relations	✓	
Director, Marketing & Communications		✓
Director, Employer Relations		✓
Measurement, Analysis and Knowledge Management		
Manager, Projects Office		✓
Surveys Co-ordinator		✓
Academic and General Staff Focus		
Equal Employment Opportunities Co-ordinator	✓	
Equity and Planning Adviser		✓
Mediator		✓
Health and Safety Manager		✓
Quality Process, Product and Service		
Quality Systems		
Manager, Quality Advancement		✓
Teaching Learning and Assessment		
Director, Higher Education Development Centre	✓	✓
Director, Summer School & Continuing Education		✓
Director, International		✓
Research and Postgraduate Study		
Director, Research, Higher Degrees and Scholarship		✓
Director, Research & Enterprise		✓
Community Service		
Director, University Extension	✓	
Director, Summer School and Continuing Education		✓
Director, Employer Relations		✓
Support Services		
Accommodation Officer	✓	
Director, Accommodation Services		✓
Director, Student Services	✓	✓
Proctor	✓	✓
Academic Director, Student Learning Centre		✓
Manager, Māori Centre	✓	✓
Manager, Pacific Islands Centre		✓
Manager, Disability Information and Support	✓	✓
Director, Student Health	✓	✓
Māori Counsellor		✓
Māori Librarian		✓

Table 4: The Development of a Committee Infrastructure Supporting Academic Management and Quality Processes

COMMITTEES	1994	2004
Leadership		
Deputy Vice-Chancellor/Assistant Vice-Chancellors Group		✓
Māori and Pacific Island Special Supplementary Grants Funding Advisory Committee		✓
Strategic Planning		
Risk Management Committee		✓
Student, Stakeholder and Market Focus		
Employer Relations Board		✓
Measurement, Analysis and Knowledge Management		
IT Policy Committee		✓
Corporate Systems Steering Group		✓
Academic and General Staff Focus		
Staffing Advisory Committee	✓	✓
Targeted Research Development Advisory Committee		✓
Health and Safety Committee		✓
Quality Process, Product and Service		
Quality Systems		
Quality Advancement Committee		✓
Teaching Learning and Assessment		
Committee for the Advancement of Learning and Teaching		✓
Internationalisation Committee		✓
Research and Postgraduate Study		
Research Committee	✓	✓
Ethics Committee	✓	✓
Community Service		
Summer School and Continuing Education Board		✓
Divisional Boards	✓	✓
Support Services		
Student Affairs Committee	✓	
Student Support Services Committee		✓

In 1994 the University of Otago operated with 16 policies and statutes mostly relating to traditional activities, including enrolment, setting of fees, setting of examinations, confirming degrees, use of the library, scholarships and academic dress. The lack of strategic direction was borne out by a survey of the members of the University's Vice-Chancellor's Advisory Committee in 1995, which revealed that there was:

- no evidence of the existence of plans or priorities for the strategic directions of the University;
- minimal consultation with stakeholders either in developing strategic directions or in seeking feedback on effectiveness of key outputs in teaching, research or service;
- no formal quality assurance systems in place and no application of performance indicators; and
- no formal human resources policies to guide such key processes as promotion.

By 1996, prompted by the need to prepare for an external quality audit, the University had at least drafted a range of corporate and strategic plans relating to its mission, strategic directions for the next five years, teaching and learning, research, internationalisation and services to students. By the middle of 2004, the University had developed nearly 190 policies, regulations and statutes dealing with issues as diverse as student grievance procedures, research ethics, intellectual property for research students, equal opportunities, recognition and promotion of academic and general staff, use of university resources and resource allocation (Table 5).

Table 5: Policy Development Supporting Academic Management and Quality Processes at the University of Otago

Education Criteria for Performance Excellence	Number of Policies (1994)	Number of Policies (2004)
Leadership	0	2
Strategic Planning	1	30
Student, Stakeholder and Market Focus	2	11
Measurement, Analysis and Knowledge Management	0	11
Academic and General Staff Focus:		
• Education, training and development	0	12
• Wellbeing and satisfaction	0	38
• Communication and consultation	0	14
Quality Process, Produce and Service:		
• Quality Systems	6	33
• Teaching, learning and assessment	2	19
• Research and postgraduate study	1	9
• Community Service	2	7
• Support Processes	2	3
Organisational Performance Results	0	0
Total	16	189

In the past ten years at the University of Otago the focus in policy development has been on strategic planning, staff related matters and quality processes. Strategic planning now occurs within each division and department, and has links with the University's Charter and Mission. The development of these policies can be linked to a change in university culture towards being more proactive and responsive.

The infrastructure supporting academic management and quality processes at the University of Otago is summarised in Table 6. The vast majority of processes described have been introduced since 1994. Emphasis has been placed on:
• support for leaders and leadership development;
• the development of plans;
• obtaining feedback from students, graduates and employers;
• departmental and programme reviews; and
• grants to improve teaching and learning.

Table 6: The Application of Infrastructure Supporting Academic Management and Quality Processes at the University of Otago

Infrastructure	Applied in 1994	Applied in 2004
Leadership:		
• Allocation of discretionary resources for HODs		✓
• Leadership Development Training Programme		✓
Strategic Planning:		
• University Charter	✓	✓
• University Profile		✓
Student, Stakeholder and Market Focus:		
• Student and Graduate Surveys		✓
• Employer Surveys		✓
Measurement, Analysis and Knowledge Management:		
• Data Warehouse		✓
Academic and General Staff Focus:		
• Education, training and development:		
• Academic Promotion Policy		✓
• Professorial Reviews		✓
• Wellbeing and satisfaction:		
• Employee Assistance Programme		✓
• Ethical Behaviour Policy		✓
• Communication and consultation:		
• Staff Survey		✓
Quality Process, Product and Service:		
• Quality Systems:		
• Quality Advancement Unit		✓
• Programme Reviews		✓
• Departmental Reviews	✓	✓
• Quality Improvement Initiatives Fund		✓
• Teaching, learning and assessment:		
• Teaching and Learning Plan		✓
• Student Assessment Policy		✓
• International Management Plan		✓
• Teaching Innovation Grants		✓
• Teaching Excellence Awards		✓
• Research and postgraduate study:		
• Research Management Plan		✓
• Research into University Teaching Grants		✓
• Support Processes:		
• Māori Centre	✓	✓
• Pacific Islands Centre		✓
Organisational Performance Results:		
• Annual Report	✓	✓

Feedback from stakeholders is used to inform staff on improvements needed but, more importantly, feedback provides up-to-date information for the use of departmental staff as they prepare for the self-review phase of their department review. The Deputy Vice-Chancellor (Academic) and the Quality Survey Coordinator together with the divisional Assistant Vice-Chancellor, visit each department to discuss the results of stakeholder surveys, highlighting areas of commendation and/or concern, undertaking further analyses as requested, and providing comparisons where this is possible with the CEQ results from Australian universities.

During the past ten years the University has increased its focus on staff development and welfare through the introduction of such policies as staff promotion, scholarship development and orientation of new staff. The level of maturity of the University of Otago's implementation of quality systems has improved markedly in the past decade. Staff now routinely respond to feedback from stakeholders to improve what they do. The report and recommendations resulting from department and programme reviews provide a powerful impetus for departments to improve their operation. The University has codified its policies and plans, and staff regularly refer to these documents in their day-to-day work. However it is not claimed that the University's units initiate their own systematic approach to quality. Rather, individual staff respond to University corporate-led initiatives.

An Evaluation of Performance of the University of Otago

There are methodological challenges associated with studying the effects of EQA initiatives in higher education (Stensaker, 2003:153). It is apparent that EQA is but one of a number of external influences. How can we determine whether internal improvement, for example, is a direct result of an external initiative? And how do we measure improvement? Research on the impact of external quality monitoring is difficult because it is impossible to control all relevant factors, which is a precondition for researchers to identify underlying relationships (Harvey and Newton, 2004:156). EQA is only one of the many external and internal processes and reform measures that universities continuously deal with and react to. Isolating the effects of a particular process is, therefore, difficult (Stensaker, 2003:153). In the absence of any clear evidence of the positive or negative impact of EQA on university performance, the authors consider that performance indicators could be utilised to test whether a university has improved its performance.

We are conscious that the use of performance indicators for this exercise is problematic. The fundamental issue with performance indicators is that performance is governed by so many different variables that performance indicators are only ever a partial proxy for actual performance (Elton, 2003). At best, their results provide a signalling effect, showing areas of strength and those which are in need of improvement, but these results cannot be used in isolation. Performance indicators need to be coupled with expert judgement to be properly interpreted. It is important that performance indicators are seen not as absolute fact, but are best viewed as suggestive. While we accept that both

qualitative and quantitative indicators individually have weaknesses, for the purposes of this paper the authors use both types of indicators.

Performance indicators can be defined as statistics that reveal something about the status, health, quality or performance of the education system, and describe its core features (Coutts, 2003). In the context of this paper, we are most concerned with indicators that measure outcomes:

- improved learning outcomes;
- improved teaching;
- improved quality of research outputs; and
- EQA evaluation outcomes (Figure 1).

As a precursor to attempting to identify specific evidence of the impact of EQA on university core outputs we investigate whether the University of Otago has improved its performance over the past ten years, and the role, if any, that EQA has played.

Improved Learning Outcomes and Improved Teaching Effectiveness

The difficulty of measuring improved learning outcomes and the need to use performance indicators as proxies has already been discussed. Student feedback on the effectiveness of their teachers is one such proxy. In this section we have combined consideration of improved learning outcomes and teaching effectiveness.

Student surveys are perhaps one of the most widely used methods of evaluating learning outcomes (Leckey and Neill, 2001:24) and teaching quality. Students may have certain bias which influences their responses; however the student perspective is advantageous for being much more immediate than analyses of, for example completion and retention rates. Further, the view presented in the survey is that of the learner, "the person participating in the learning process" (Harvey, 2001). Harvey also identifies the value in the richness of information that can be obtained through the use of student surveys (Harvey, 2001).

There are also a number of performance indicators which can be used to measure improvements in learning outcomes and teaching effectiveness. These include:

- completion rates;
- retention rates;
- employability of students; and
- learner satisfaction surveys.

1.   Completion and Retention Rates[10]

The following graph (Figure 2) illustrates how completion and retention rates at the University of Otago rank in relation to other universities within New Zealand with greater than 75000 course enrolments[11]. Using the most recent published data available, the University of Otago has the highest completion and retention rates in 2002 of the institutions shown. These performance indicators are now being developed and tested in New Zealand as part of the preliminary work leading up to the introduction of the PESC discussed previously.

Figure 2: Completion and Retention Rates as percentages of course enrolments in 2002 for New Zealand HEIs with over 75000 course enrolments

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10 Completion rate is defined as the number or percentage of enrolments in all courses that successfully pass a course; retention rate is defined as the number or percentage of enrolments which are active in learning at the end of the course (whether successful in passing or not).

11 For graphing purposes it was felt that institutions of a similar size to the University of Otago in the number of course enrolments should be selected.

2.   Student Feedback

The Course Experience Questionnaire (CEQ) was originally developed as a stimulus for course improvement (Ainley, 2000:28). It perhaps most closely fits the definition of a performance indicator as with careful interpretation, it is possible to use CEQ results to suggest areas which may need improvement (Ainley, 2000:32). The University of Otago commenced utilising the CEQ for graduates and students in 1995, so it now has 10 years of data that have been analysed to ascertain any trends. The CEQ measures the ratings by students of their experience on several scales including the common scales: good teaching, clear goals and standards, generic skills, and overall satisfaction. As the University surveys a quarter of its students every year it was decided to analyse the data utilising progressive batches of four years. The CEQ makes use of a five-point Likert scale with one being very satisfied/strongly agree and five being very dissatisfied/strongly disagree. The results are shown in Figures 3 and 4.

Figure 3: University of Otago CEQ Good Teaching Scale[12] 1995-2002

In relation to the Good Teaching Scale (Figure 3), all the trends have moved in a positive direction. For example, question C18 "Our lecturers were extremely good at explaining

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12 Questions from the CEQ are as follows – CC3 "The teaching staff on this course motivate students to do their best work"; CC7 "Staff here put a lot of time into commenting on students' work"; CC18 "Our lecturers were extremely good at explaining things". The results have been put in four year blocks as the programmes/departments are surveyed once every four years. Each block represents the entire University.

things" had a score of 2.76 in 1995/98, which reduced to 2.59 in 1999/2002, indicating an improvement in student satisfaction.
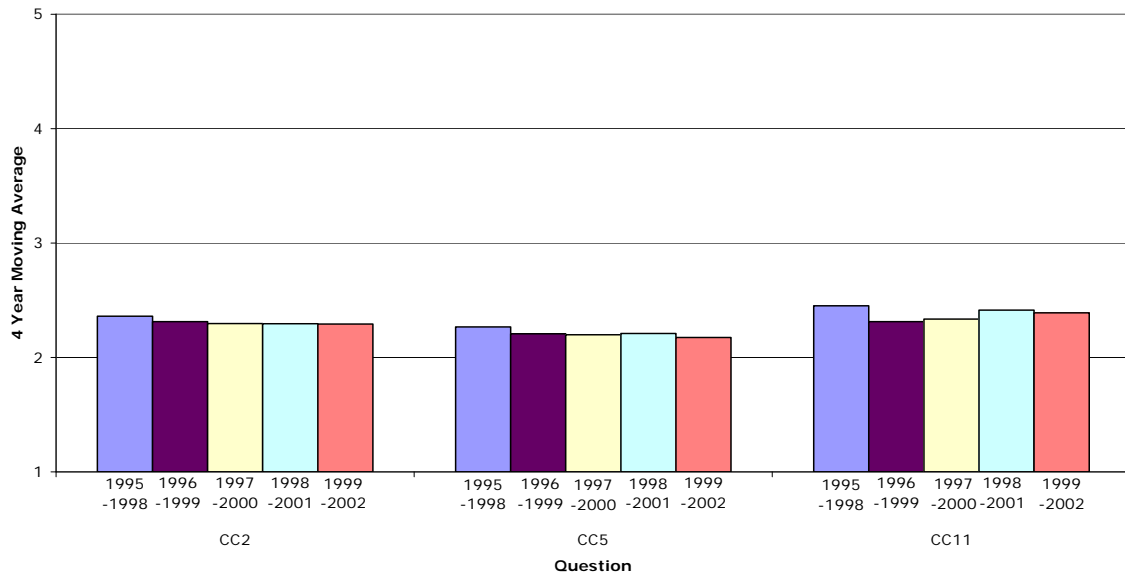

Figure 4: University of Otago CEQ Generic Competencies Scale[13] 1995-2002

In relation to the Generic Competencies Scale (Figure 4), the trends were also positive, but not to the same extent as the Good Teaching Scale. For example, question C2 "This course has helped me develop problem solving skills" achieved a result of 2.36 in 1995/98 which reduced to 2.29 in 1999/2002; and C11 "This course has improved my written communication skills" had a result of 2.45 in 1995/98 and 2.39 in 1999/2002.

A second strategy to ascertain the impact of quality assurance on teaching and learning involved a comparison between departments at the University of Otago with the national average CEQ results for Australia. The following diagram, Figure 5, portrays the comparisons with the Australian mean on the Overall Satisfaction question[14]. It can be seen that the majority of departments at the University exceeded the results for the national Australian mean. A difference greater than 15 is considered significant. For example, the University of Otago departments 1-10 showed significantly higher overall satisfaction than their Australian counterparts.

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13 Questions from the CEQ are as follows: - CC2 "This course has helped me to develop problem solving skills"; CC5 "This course has sharpened my analytical skills"; CC11 "This course has improved my written communication skills".

14 To reach a mean the scores from the Likert 1-5 scale are converted into a scale ranging from +100 to -100. On this scale, zero represents an overall neutral response, any negative number a generally negative response, and any positive number a generally positive response.
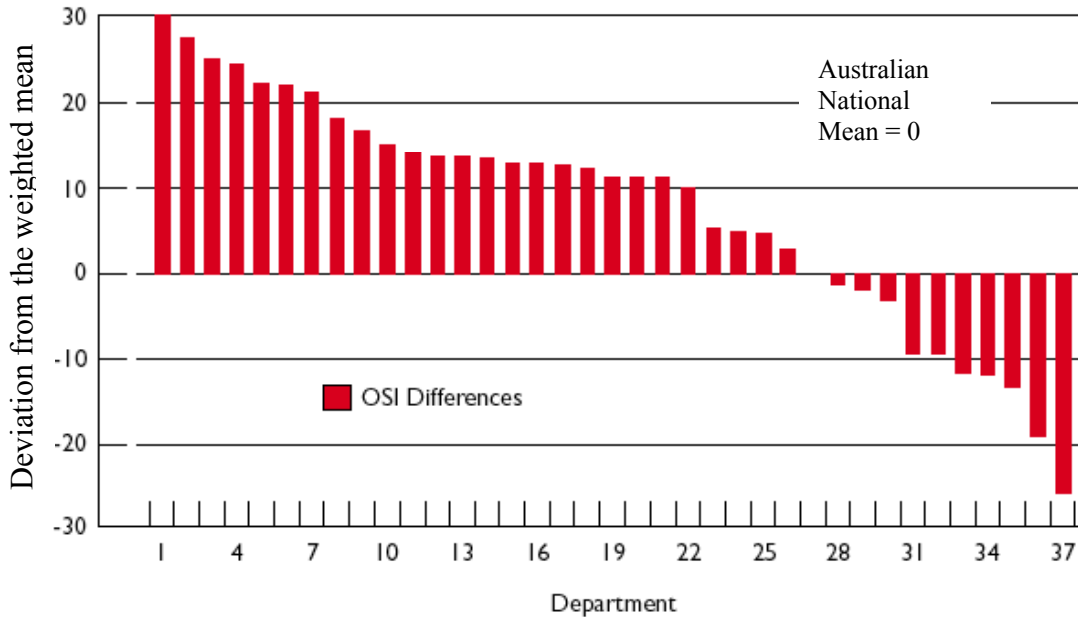
Figure 5: Comparison of the CEQ overall satisfaction question: Otago mean score and Australian national score

A third strategy to ascertain the standard of teaching at the University concerned an analysis of teaching performance data from the Higher Education Development Centre. This involved evaluations for 672 staff in 2002 on the question "Overall, how effective was Dr X in teaching this course?" If a teacher had more than one class evaluated the mean of the results was entered. The frequency distribution shown in Figure 6 reports the results of this analysis in terms of the percentage of scores of one and two. The mean result for all 672 staff was 80.7% and the median was 85.4%. It is noted that of the order of 40 staff achieved a 100% result. Overall the results indicate a very high degree of effectiveness for the University of Otago's teaching staff. It could be argued that scores less than 50% represent areas of concern and 5.5% of staff were in this category.
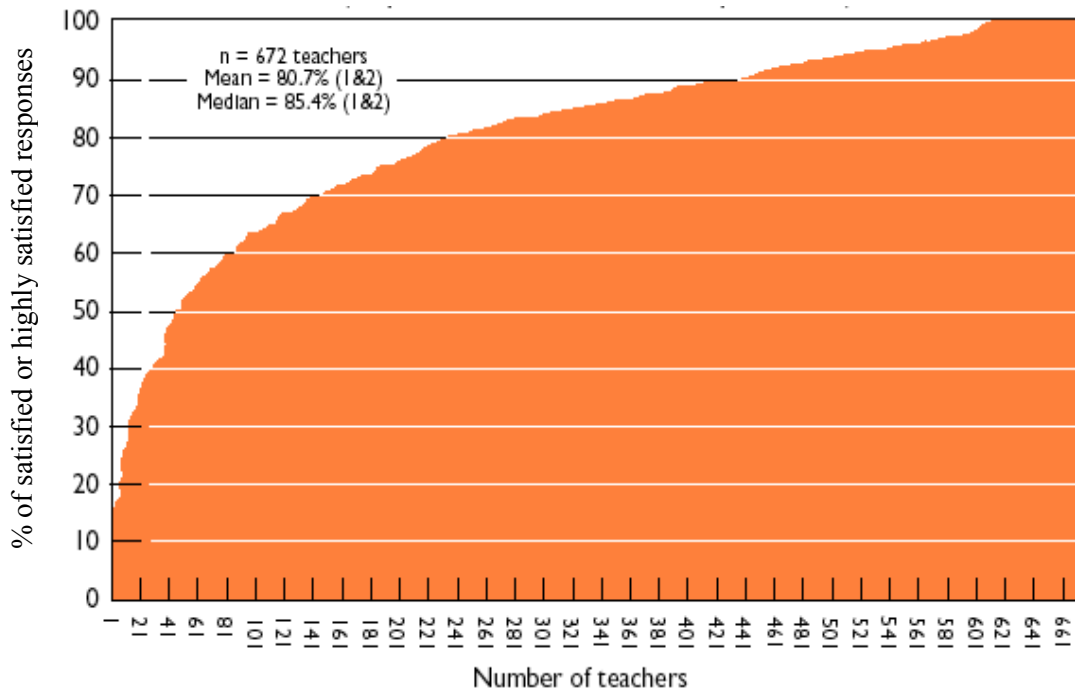
Figure 6: University of Otago teaching evaluations 2002: "How effective was Dr X in teaching this course?"

3   Teaching Excellence Awards

The importance of the quality of teaching in effectively improving learning outcomes has been recognised internationally through the development of Teaching Excellence Awards. The existence of these awards provides another performance indicator which can signal an area of improvement. In New Zealand, the recognition of teaching quality gained government endorsement in 2002, with the introduction of national Tertiary Teaching Excellence Awards. During the two years these have been in place, the University of Otago has nominated four of its staff. Three have won National Teaching Excellence Awards and one staff member was additionally given the Prime Minister's Award for best teacher. This recognition of teaching excellence is supported within universities. At the University of Otago, the University's Student Association (OUSA) also sponsors both annual OUSA teaching excellence awards as well as OUSA PhD supervising awards.

4   Teaching and Learning Grants

Another example of the University's ongoing commitment to quality improvement results from the Committee for the Advancement of Teaching and Learning (CALT) grants. Since its inception in 2001, 110 CALT grants have been awarded to academic staff within the University, to develop projects for innovation in teaching, internationalisation of the curriculum and Otago research into university teaching.

Improved Quality of Research Outputs

1   External Research Income

In 1995 the external research income of the University of Otago was $22.5M (University of Otago, 1996), compared with $48.2M in 2003 (University of Otago, 2003).   This represents a 114% increase (Figure 7). There was also a 37.1% increase in the number of research articles produced, from 1456 in 1994 to 2315 in 2003. During this period full-time equivalent Academic and Research staff increased from 1240 to 1520, an increase of 18.4%.
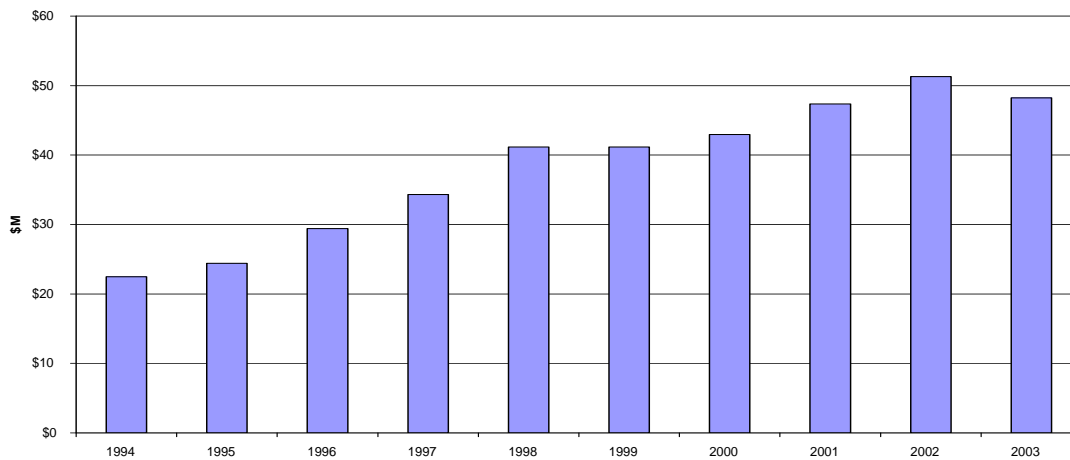

Figure 7: External research funding at the University of Otago 1994 – 2003

2   PhD Degree Completions

Figure 8 illustrates the general upward movement in the completion rates of PhDs over the past 10 years at the University of Otago. The dip in the chart for 1999 was due to a change in the way data was recorded[15].

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15 In 1999 a change in data collection methods meant that a graduate is now tagged to their final year of enrolment, as opposed to the year in which they actually graduate.
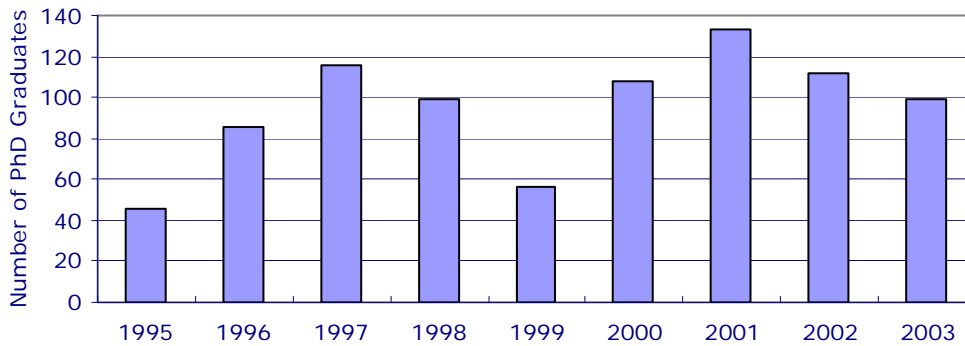
Figure 8: Number of PhD graduates at the University of Otago 1995 - 2003
Note – change in way data was recorded in 1999 results in an anomaly during that year

3   Performance Based Research Funding (PBRF)

As indicated previously the PBRF exercise takes into account the quality of researchers, research degree completions and external research income. The quality of researchers is judged by information supplied by staff at each institution. This information, called an evidence portfolio, is first internally then externally assessed by a panel at the TEC and awarded an appropriate grade. The Quality Evaluation results for the trial PBRF exercise undertaken by TEC are shown in Figure 9.
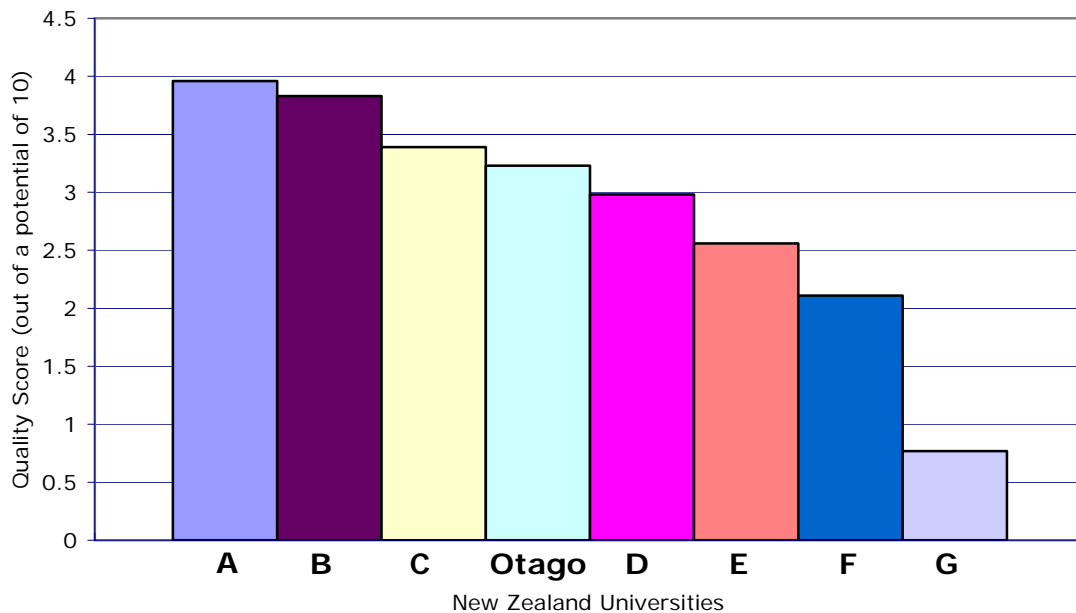

Figure 9: PBRF quality evaluation score for New Zealand universities 2003

In the Quality Evaluation component, the University of Otago ranked fourth with a quality score of 3.23 and against an average score across all participating New Zealand tertiary institutions of 2.59. The University of Otago scored well comparatively on the research degree component and the external research funding criteria, achieving the greatest net gain in research funding of any national university as a result of the 2003 PBRF exercise. It will receive increased funding of $1.8M. Auckland is next with $1.6M and Canterbury third at $381,000 (TEC, 2004:80). The PBRF evaluation exercise and the peer review of research can be viewed in a similar vein to EQA. Any unsatisfactory results inform the University on improvements needed and, where necessary, changes are made to internal University processes.

EQA Evaluation Outcomes

The recommendations and commendations of an EQA evaluation also impact internal university processes (see Figure 1 feedback loops). Where there are significant recommendations for improvement, the university's internal processes may change in an attempt to improve university performance. A positive audit report can be seen as a validation of what the university is doing. For example, the 1996 Audit report of the University of Otago (page 21) stated in relation to research:

> "Otago University's Research Management Plan to 2000 is in an embryonic form and there is still some way to go in constructing a research policy, clarifying the concept and implications of identifying areas of excellence, identifying them in a flexible and useful way, developing effective and meaningful PIs [performance indicators], etc".

In response to this the University initiated the completion of the Research Management Plan and its implementation, as reflected in the University of Otago's 2000 Audit Quality Portfolio (page 18) which stated:

> "The Research Management Plan sets out strategic goals, objectives and implementation tasks. A significant feature is the continuing emphasis on rewarding success and building on existing strengths by identifying some research areas as of sufficient importance to merit special attention. Ten major themes, nine emerging themes and over one hundred Areas of Research Excellence are identified".

As a result of this the University was commended in the 2000 Audit report of the University of Otago (page 1) which stated:

> "OU is commended on the strategic approach to research development and planning that led to the development of the major emerging themes".

Another example of the impact of EQA recommendations is the following which related to postgraduate students. In the 1996 Audit report of the University of Otago (page 22) the observation was made that:

"The experiences of postgraduate students are very mixed, and the panel heard of great variation in support, resources and reporting processes for students. … While it is often clear what to do if there is a major problem (such as irreconcilable disagreement with a supervisor), it is not so clear how to deal with 'first level' problems (such as a minor disagreement with a supervisor)".

In order to rectify this issue, the University created the role of Director, PhD Academic Liaison[16]. The University of Otago's 2000 Audit Quality Portfolio (page 17) stated:

"The Director, PhD Academic Liaison meets regularly with the PhD Student Liaison Committee, visits departments to discuss PhD issues at staff meetings and takes part in departmental, school or divisional postgraduate meetings. The Student Liaison Committee has provided valuable feedback on proposed procedures and reporting mechanisms".

The positive impact of this role was reflected in the 2000 Audit Report of the University of Otago (page 15) which stated:

" Postgraduate students have some reservations about the level of support offered to them, but nevertheless are positive about studying at Otago and what they term 'the Dunedin Experience'. …PhD students are overwhelmingly supportive of the positive impact being made by the Director, PhD Academic Liaison".

These examples illustrate that EQA recommendations contribute to, and have an impact on, university decision making.

The unknown quantity of the influence EQA would have on universities resulted in a catalytic impact both during and after the first round of audits in New Zealand. Among other things, it brought about an improved awareness of the benefits of planning, and of the value of introducing quality systems, acceptance in departments of the value and importance of seeking feedback on performance and a shift to implementing quality improvement initiatives in response to feedback from quality processes. The second round brought with it a wider awareness of the processes involved and the possible impact audit could have on universities and as a result, there was less scope for improvement. Therefore, EQA can be viewed as a stimulus for improvement in New Zealand universities. Currently, with the third cycle underway, there are many other external influences putting pressure on universities, and consequently the role of audit can be seen to be a validation of processes, in contrast to the catalytic effect of the initial round.

The authors have used an example of the University of Otago to apply our theoretical model in order to identify and describe the different variables at play. The model developed has enabled us to describe the key interacting variables and also to reflect on the significance of feedback to reinforce the change management that has been driving the University. Some variables were initiated in response to an impending audit, others as a result of internal university influences and university performance, and these variables

16 Later termed Director, Research, Higher Degrees and Scholarship (Table 3)

are impossible to disentangle from one another. We hope that our theoretical model (Figure 1) will be applicable to analyses of the influence of EQA on university performance in international settings. For a particular university the model will facilitate the mapping of external influences, internal university influences, and internal university processes as an aid to discussing the impact on university performance.

We show that the Vice Chancellor's vision for the University of Otago, coupled with an impending audit led to significant changes to the management structure, effectively supporting and implementing the Vice Chancellor's initiatives. We demonstrate that quality processes at the University of Otago have been extensively adopted and implemented over the past decade. We note that the University is still at the stage of imbedding the quality processes, but that most members of the University community would agree that there has been a change of culture towards the adoption of quality processes. This can be illustrated through the development and application of an infrastructure supporting quality processes (Tables 5 and 6). We have been able to demonstrate credible performance in teaching and learning, noting that there are areas of both strengths and weakness. We also observe that trends in the CEQ results over the past 10 years have moved in a positive direction. Satisfactory outcomes for the University in relation to course completions and retentions are also reported, and research income and research higher degree completions increased during the period. However we note that the PBRF performance of the University of Otago in terms of quality of research was indeed modest compared to other universities.

The University of Otago has made improvements in relation to core performance outputs over the period under discussion. Other indicators support this conclusion. Student demand continues to be higher than at the majority of other New Zealand universities. Have these improvements been the result of EQA and the spectre of PBRF and PESC which have only recently been introduced? Or alternatively the product of a new Vice-Chancellor determined to increase the international standing of the University, and committed to competing with other New Zealand institutions? We pondered whether the Vice-Chancellor was the main driver of change, or whether it was EQA, or the Minister of Education? Certainly the impending audit enabled the Vice-Chancellor to implement his changes with relative ease.

Discussion

This paper raises a number of issues of interest to members of EQAs. The importance of positive relationships and effective communication between an EQA and university undergoing audit has been thoroughly documented (Meade, 2003). However, we contend that an EQA needs to identify the multiple external influences in addition to the EQA experience which impact on a particular university. These influences are likely to interact with that of EQA with the result that EQA needs to be flexible and adaptable. They may reinforce EQA recommendations or on the other hand could provoke

countervailing forces. The Bologna Process[17], the Nelson reforms[18] and the Rae Review[19] are all international examples of the impact that governments, at various levels as external influences, can have on the way that universities operate and perform. Discussions between EQAs and universities to explore the terrain of multiple interacting external influences impinging on a university's own agenda could prove beneficial.

The scope of influence of EQAs is mainly focused on the internal processes of a university, including the leadership, strategic planning and quality systems. Both the self- review in preparation for audit and EQA processes encourage the development and codification of policy and the introduction of improvements in response to recommendations flowing from EQA reports respectively. The AAU is considered credible by New Zealand universities and its recommendations taken seriously. We note that AAU does not have a direct influence on funding, unlike CUAP, but it may well have an indirect influence on informing prospective students about the quality of the university and thereby affect student demand for places. The Minister of Education's initiatives using the funding model are, on the face of it, compliance focused, in spite of claims to the contrary, with PBRF rewarding good research performance while PESC will penalise poor performance. The authors contend that these new initiatives are likely to have a more profound impact than EQA.

Summary

During the course of this research, numerous challenges were encountered by the authors, including the realisation that there is an array of influences for change within higher education in addition to those generated by EQA. The influences promoting change in universities interact and overlap, and even work against each other to such an extent that it was impossible to isolate independent effects. The authors conclude it would only be practicable to examine the combined impact of all the influences, and possibly examine how a number of them relate and interact with one another. We are not proposing an explanation in which the effects of the separate influences can simply be added together: on the contrary, the array of effects can duplicate and interact, resulting in an impact of both positive and negative drivers for the advancement of University performance

It is not feasible to untangle the influence of EQA compared to other external initiatives, but additionally we note that each university itself is very involved in making internal changes to their operations. Some of these internal influences are in response to external influences including EQA, others are prompted by a university's senior leadership team attempt to achieve a distinctive market advantage in a highly competitive teaching and

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17 Within the European Union - An important goal of the Process is thus to move higher education in Europe towards a more transparent and mutually recognized system which would place the diversified national systems into a common frame based on three outcome levels – Bachelor, Master and Doctoral - and recognized different paths according to which they were achieved (http://www.coe.int/T/E/Cultural_Co-operation/education/Higher_education/Activities/Bologna_Process/default.asp#TopOfPage)

18 In Australia - http://www.backingaustraliasfuture.gov.au/

19 In Ontario, Canada - http://www.raereview.on.ca/en/default.asp?loc1=home

research environment. The collection of influences are summarised in Figure 1. Furthermore, university performance has a reciprocal influence on internal university processes, internal university influences and external influences. This appears to be occurring worldwide. We encourage researchers to apply in international contexts, the evaluation methodology developed in this paper with the objective of advancing understanding of the influence of EQA.

Is it possible to investigate the influence of EQA on university performance? While it is possible to examine the combination of EQA together with other influences, the authors acknowledge that it is exceedingly difficult to quantify the independent influence of EQA. However, we are persuaded that EQA does have a powerful initial role as a catalyst, as well as a validation role for university-led reform. These roles both support and legitimate Vice Chancellors' decisions, as they seek to make their universities more responsive to stakeholders, and more effective in placing emphasis on improving core university activities of teaching, research and community service.

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