

The research/teaching relation: A view from the ‘edge’

JANE ROBERTSON¹ & CAROL BOND²

¹*Educational Research and Advisory Unit, University of Canterbury, Christchurch, New Zealand (E-mail: jane.robertson@canterbury.ac.nz);* ²*Higher Education Development Centre, University of Otago, Dunedin, New Zealand (E-mail: carol.bond@stonebow.otago.ac.nz)*

Abstract. The relation between teaching and research is a defining feature of a modern university and of academic identity. Many universities claim a close relation between the two as well as a strong critical orientation. Yet the gap between claims and practice in higher education appears to be widening as government and institutional policies increasingly treat research and teaching as separate entities. Studies of the relation reflect these events. Such studies are not only contradictory but point to an increasing gap between research and teaching.

What is missing in this complex and contradictory literature surrounding the research/teaching relation is an understanding of the relation in its local and historical context – a conceptual archaeology. Using a case study, we trace the development of teaching and research at the University of Canterbury (Christchurch, New Zealand) *over time*. We explore founding discourses, colonial imperatives, Humboldt’s legacy, the influence of philosopher Karl Popper and more recent events such as national audit and a new tertiary education strategy. We also look briefly at ways in which, as part of the academic heartland, the relation can be strengthened within institutions.

Keywords: case study, community of inquiry, higher education, New Zealand, research/teaching relation, University of Canterbury

Introduction and rationale

A strong relation between research and teaching is generally understood to be a defining feature of a modern university and of academic identity (Clark 1997). In the late 1990s a brief review of Hattie and Marsh’s (1996) meta-analysis of studies focusing on the relationship between research and teaching was published in an internal newsletter at the University of Canterbury (in Christchurch, New Zealand). The review reported a zero relationship – teaching and research were found to be only ‘loosely coupled’. The response from academic staff within the University was immediate, emotional, and varied. Some staff referred to the research as “total twaddle” whilst others indicated that they had “advocated [that position] for years” (Robertson and Bond 2001, p. 8). The incident precipitated a programme of research

(Robertson 2003; Robertson and Bond 2001) including this case study. The purpose of the case study is to uncover the ways in which the relation between research and teaching has been understood at the University of Canterbury *over time*, to explore the contextual discourses that may have formed those understandings, and to look briefly at ways in which the relation might be strengthened within institutions.

The research/teaching 'nexus'

The contradictions in the academics' responses described above are reflected in the literature on the relation between research and teaching. There have been numerous quantitative attempts to account for the relation by correlating teaching effectiveness as measured by student evaluations of teaching and research productivity as measured by publication counts (see Feldman 1987; Hattie and Marsh 1996). These studies suggest little or no relationship. Others (e.g., Fox 1992) position research and teaching as competitors for time and resource rather than as complementary aspects of scholarly endeavour. In contrast, qualitative studies focusing on academics' perceptions and experiences have most often indicated a strong belief in the existence of, and need for, a symbiotic relationship in which involvement in research enhances teaching and, to a lesser extent, involvement in teaching stimulates research (e.g., Jensen 1988; Neumann 1992, 1993; Rowland 1996; Smeby 1998). Reflecting this complexity, our own research, which focuses on individual academics' experiences, shows considerable variation along a continuum from no relation to an integrated relation (Robertson 2003; Robertson and Bond 2001).

Research and teaching – competing ideologies?

This variation in academics' views of the research/teaching relation, in the research on the topic, and even in the methodologies underlying the research, is symptomatic of the current global influences that are fragmenting and re-shaping higher education. The reality is highlighted in comparative research in higher education (e.g., Altbach 1998; Clark 1995; Geiger 1993; Marginson and Considine 2000; Slaughter and Leslie 1997). Policy in higher education has increasingly become "a subset of economic policy" thus perpetuating an "academic capitalism" (Slaughter 1998, p. 1). The meanings of higher education, of academic work, and of the relation between universities' internal and external worlds have each been redefined. The liberal university is giving way to the 'enterprise' university (Marginson and Considine 2000; Peters and Roberts 1999). Ideologically, the traditional emphasis on the production and transmission of knowledge as a social good has been replaced by the produc-

tion and transmission of knowledge as a market good (Buchbinder 1993) where knowledge as product, performance and commodity is favoured over knowledge as insight, appreciation and understanding (Codd 1997). Basic research is unable to compete with applied research in attracting external funding. Research and teaching are not only increasingly subject to different and competing imperatives, they have become competing ideologies (Barnett 2003). Research is drifting from the teaching environ towards the marketplace and teaching is losing its link with research as a result of changing priorities and modes of work (Clark 1995; Slaughter and Leslie 1997).

A focus on inquiry

Research that argues for the university as a 'place' or 'community' of inquiry offers a different perspective (e.g., Brew 2003; Clark 1995; Robertson 2003; Rowland 1993, 2000). It reflects contemporary education theory and its emphasis on the social construction of knowledge through communities of practice (Lave and Wenger 1991). It adopts a particular interpretation of inquiry – that together, academics and students constitute a community of practice in which 'teaching' encourages learning *through* the practice of research (Bowden and Marton 1998; Brew 2001, 2003; Mourad 1997). This view is driven by the argument that the current 'products' of higher education are unprepared for an age of radical uncertainty and supercomplexity (Barnett 2000). Instead, there is a need for a higher education that allows the integration of research, teaching, scholarship and learning in a culture of inquiry (Brew 2003). Already there are reports of practical initiatives that are intended to encourage a visibly closer relation at all levels (e.g. Jenkins et al. 2003).

Rationale for the case

The research outlined above illustrates the complexity of the discourses concerned with the relation between research and teaching. Comparative research provides an extensive empirical basis at a macro level for understanding the causes of *separation*. Much of this research derives from the "institutional and intellectual center" (Altbach 1998, p. 20) of higher education – large research universities and institutes in the northern hemisphere, and in particular, the USA. It draws on macro-political economic and social theories (e.g., Marginson and Considine 2000; Slaughter and Leslie 1997), public policy and materials that exemplify significant historical change or important developments (e.g., Geiger 1993; Slaughter and Leslie 1997). Its strength lies in its use of broad ranging cross-national case studies and analyses (e.g., Clark 1995; Slaughter and Leslie 1997) and one of its main

contributions is the identification of *generic* processes and *common* trends. It tends to take less account of the *local* or the *marginal* (McCulloch and Lowe 2003). Yet such knowledge has the power to “structure the possible field of action of others” (Foucault 1982, p. 221).

Barnett (1990) argues that the ‘idea’ of higher education is largely buried in the past. Nevertheless, in positioning current practices, universities not only ignore but are also largely unaware of their own rich and complex heritage (Readings 1996). What is missing from the different areas of research outlined above are *in depth* studies that provide a greater understanding of the ways in which the meanings attributed to the relation between research and teaching are experienced and acted upon *within* individual institutions and *over time*. Using Barnett’s (1990) notion of a ‘conceptual archaeology’, we map and critique the development of research and teaching and their relation at the University of Canterbury, from its founding in 1873 until the present day.

The case study

The data for the case study are drawn from archives housed in the Macmillan Brown Library (University of Canterbury), un-catalogued documents stored by the University, and other acknowledged sources. Our analysis draws on Gadamer’s (1989) philosophical and Bakhtin’s critical hermeneutics (Gardiner 1992). We introduce the case with a brief orientation to the University of Canterbury and its founding discourses. Four distinct phases, defined by changes in institutional practices and activities with regard to research, teaching, and their inter-relation were evident in the data. Each phase is described and located more generally in its wider context. Of necessity, given our focus on depth rather than breadth, we emphasise the local and national over the global.

The University of Canterbury – an orientation

New Zealand is a small country consisting of two main islands with a population of four million people. It is located 1200 miles from Australia, its nearest neighbour, and 13,000 miles from the United Kingdom to which it continues to be affiliated as part of the British Commonwealth. It has eight universities ranging in size from Auckland University with approximately 23,000 students to Lincoln University with 4,500 students. The universities provide a range of undergraduate and graduate programmes including the research doctorate. In 2003 the University of Canterbury is home to approximately 12,000 students and 490 academic staff. It serves the city

of Christchurch (population 316,000) and the wider Canterbury province, though its Engineering schools attract students from across the country. Until recently its student population was largely mono-cultural but the University is now a recognised destination for international students.

Founding discourses

As with others established in British colonies worldwide, universities in New Zealand have emerged from and are participants in the long and complex tradition of Western higher education. They share, in various measures, the attitudes, values and practices of British, European and American universities (Marginson and Considine 2000). They owe much to the ideas of Cardinal Newman, and the legacy of Humboldt and the German research university.

The founding discourses of the University of Canterbury have their roots in England (Marginson and Considine 2000), and specifically in the formation of the Canterbury Association in 1848. The Association was founded to set up a Church of England settlement in Canterbury, to oversee the selection of colonists and the purchase of land. Led by Edward Gibbon Wakefield, it had strong links with the English 'establishment'. Of its 53 members, 30 were graduates of Oxford University and 17 of Cambridge University (Gardner et al. 1973). The city of Christchurch was named to commemorate the role of the Oxford men who had contributed to Wakefield's plan for the settlement. Wakefield's policies of "systematic colonisation" (Harrop 1939, p. 186) included the setting aside of considerable sums from the proceeds of land sales for church and educational endowment. The Oxford influence is particularly evident in the original collegiate structure of Christ's College which was part of the plan. It was to be a two tiered institution. The lower tier or secondary school was established. The upper tier or university was delayed due to the economic stresses and workloads in the new settlement (Harrop 1939).

Parallel events overseas should be noted. At the time that Canterbury College was being set up in the Oxford style, the Universities of Oxford and Cambridge were subject to reform (Clark 1995). The new civic 'redbrick' universities being established in England adopted the Scottish system of specialisation based on departments and the development of 'advanced thinkers'. Similarly, universities in the USA were making a revolutionary shift (Clark 1995) in allegiance from the English and Scottish systems to the Humboldtian 'ideal' as many of the leaders of American universities had previously visited and studied in Germany (Lucas 1994).

In New Zealand, the Scottish-settled province of Otago was first to establish a University in 1869 and to propose that it become the University of New Zealand. However the notion of a single, monopolising university did not fit

well with the then disjointed system of provincial government. Nor was it likely to meet the needs of a scattered, and geographically isolated society. By way of compromise, the University of New Zealand was established as a separate institution in 1870 in Wellington. The University was modelled on the University of London (Harrop 1939) with its affiliated colleges. As laid down in the New Zealand Education Act of 1874, it was to be strictly an examining body, and its funds were to be devoted to the appointment of examiners, the conduct of examinations, the establishment of scholarships, and the conferring of degrees.

In 1871, the newly constituted University of New Zealand invited institutions of higher education to apply for affiliation. The Canterbury Collegiate Union sought affiliation and, in 1873 was transformed into Canterbury College. Unlike the University of Otago, Canterbury College did not seek the title of ‘university’; this occurred only with the demise of the University of New Zealand in 1962. Subsequently university colleges were also established in Auckland (1883) and Wellington (1898).

The first phase (1870–1945) – a focus on teaching

A “liberal education” or a nineteenth century performative agenda?

The aim of the newly established Canterbury College was to provide “a liberal and regular course of Education” (Gardner et al. 1973, p. 40). Its main vehicle was the Bachelor of Arts degree – a general qualification emphasising breadth rather than depth (Parton 1979). Students were expected to study the arts and sciences by taking both Latin and mathematics. Given its antecedents, Canterbury College, of necessity, adopted Newman’s idea of the university. Educationally, research was not of interest. Teaching, with a concern for mastering a body of knowledge, was emphasised.

To illustrate the benefits of this liberal education with its emphasis on the unity of knowledge, Gardner et al. point to the breadth and humanity exhibited in the letters of Canterbury graduate and famous nuclear physicist, Earnest Rutherford:

In them, the ‘two cultures’ flourish happily together. It is not fanciful to suggest that his years at Canterbury College equipped him in non-scientific ways that helped to make him a better scientist (Gardner et al. 1973, p. 169).

John Macmillan Brown, first Professor of classics and English at Canterbury College, provides evidence of the pervasive discourse of the time:

The aim of the university lecturer . . . is to stir into active life the higher faculties, the imagination, the reasoning, the powers of comparison, and

most of all the power that grasps a subject in its entirety, systematises and transfers it into a living part of the mind (in Gardner et al. 1973, p. 103).

The introduction of Newman's idea of a university was tempered by the practical realities of the new settlement and several factors combined to make conditions less than ideal. The 1877 New Zealand Education Act provided for universal elementary education. Subsequently public high schools were established in many parts of the colony, and primary and secondary education flourished. The role of Canterbury College was performative. The Bachelor of Arts qualification was expected to respond to the increased demand for the education of primary and secondary teachers who could turn a hand to almost any subject. These early years of the College were marked by a strong sense of service to the economic and social priorities of the local community. The colony required well educated teachers and the College responded with a BA degree designed to meet the needs of local students. Many of these intending and practising teachers enrolled in the College's evening classes (Atkinson 1969; Gardner et al. 1973). John Macmillan Brown observed:

Nor must it be forgotten that at first all my students and, later, all but a few, chiefly junior scholars, were engaged in teaching or other work all day. My lectures had to be either early in the morning or after six or seven in the evening, or on Saturday (in Hight and Candy 1927, p. 35).

In the new settlement, "university education in the widest and best sense of the term was regarded as a luxury" (Harrop 1939, p. 193). This perception was reinforced by the composition of the governing body of New Zealand who were "to only a small extent men of university standing" and who "saw little reason why [other members of the community] should be given greater opportunity" (p. 193).

Governance and control

Despite recommendations of the Royal Commission of 1878, that each of the colleges should have ample independence including "the conduct of examinations by persons resident in the colony" (Harrop 1939, p. 192), the University of New Zealand continued to exert control. The College's liberal arts programme was circumscribed by the examination syllabus set down by the University so there was little freedom to develop curricula. Professors of the colleges had little or no share in their governance. Examinations were external to the constituent colleges and the country, in that, in all but a few cases, the examiners were scholars of repute in Great Britain (Beaglehole 1937). This question of external examinations was to be a contested area for

five decades. It was only in 1925 that the Senate of the University of New Zealand agreed that examinations at pass grade be conducted by professors who taught the subject. Nevertheless, advanced and honours degrees in some arts and sciences, engineering and Bachelor of Music continued to be subject to external examination in the UK until the second World War and beyond.

By the early 1900s, academic working conditions and adequate funding at the University of New Zealand became an issue nationally. The relationship between the University and its affiliated colleges was uneasy. In 1910, 13 members of the teaching staff at the Victoria College of Wellington (now Victoria, University of Wellington) presented a petition to Parliament requesting an inquiry into the condition of university administration and education in New Zealand. In 1911, the New Zealand University Reform Association published the petitioners' arguments in a pamphlet. Reflecting the belief in the centrality of the modern university to national culture and identity, the authors claimed:

Probably no single institution is capable of so far reaching effects on national life as a University. According to modern notions, the duty of a University is not merely to provide a culture which is a luxury for the few, but through the professions and the teachers to mark its impress on the whole mass of the community and to infuse into every department of national life an ever-increasing sense of the value of scientific ideals and scientific method and training, in their application to every form of human activity (New Zealand University Reform Association 1911, pp. 5–6).

The authors also argued that the existing degree system did not encourage original work. There were few scholarships available, the libraries were of poor quality and laboratory facilities were insufficient or non-existent. In all, the authors considered it “a university atmosphere quite unsympathetic to investigation” (New Zealand University Reform Association 1911, p. 107) and held up as a laudable alternative the research/teaching synthesis of Humboldt's University of Berlin.

In 1924 the Minister of Education announced the establishment of a second Royal Commission on University Education in New Zealand and the following year saw the publication of its Report (Reichel 1925). Included in the scope of the Commission was the requirement to inquire into and report on the provision that should be made in New Zealand for university teaching and research, the desirability of the system of affiliation to the University of New Zealand, and the issue of external examination.

The Commissioners recognised the significance of research in the function of the university. They considered that “teacher and student in a university

should be engaged jointly in a voyage of discovery in search of truth” and they observed that:

the conditions under which New Zealand was colonised and developed ensured the selection of a population animated by a love of adventure and of investigation . . . one would therefore expect that the spirit of inquiry and research would flourish in and would be encouraged among such a community (Reichel 1925, p. 76).

However their findings revealed a somewhat different state of affairs. Under the evening lecture system they claimed too many students were engaged in earning a livelihood and interested only in gaining the final examination. They described the system of external examination with its rigid, imposed syllabus as iniquitous and as militating against any research ethos. Teachers spent too much time consumed in lectures, examinations and the correction of essays. Working conditions were poor, the academic staff low paid and classes large, with the result that there were few opportunities to conduct research and publish. Amongst other recommendations the report stated that “the University should be reconstituted as a federal teaching university with constituent colleges enjoying a large measure of autonomy in regard to curriculum and examinations” and that candidates for professorships should be familiar with methods of research and be able to demonstrate evidence of research involvement (Reichel 1925, p. 88).

These recommendations were to be curtailed as the University became subject to further Government control through its finances. Colleges were required to submit annual financial statements to Government. Harrop (1939) reports that the University’s growing scholarship fund, built up from reserves in the past, was used as an argument to stem “the flow . . . of Government assistance” (p. 198). Thus monies that could have contributed to research were redirected elsewhere. Moreover, as a result of worldwide depression, Government grants and other sources of revenue diminished and the colleges including Canterbury were forced to reduce expenditure and cut salaries (Harrop 1939). Unlike the northern hemisphere, there was little or no private funding available for research and public funding of higher education was limited and intermittent.

The second phase (1945–1946) – conditions for a discourse of inquiry

It was not until 1945 that the concerns outlined above were taken up on a wider scale. Brief as it is, this second phase constitutes a watershed in the history of the development of research and teaching at Canterbury College. We draw on three particular sources of evidence. First, a group of

teachers in the University of New Zealand published a provocative statement titled *Research and the University* (Allan et al. 1945). At the same time, the Chancellor of the University of New Zealand issued a *Questionnaire on research practices* (University of Canterbury 1945) to the heads of departments of all the Colleges, inquiring about departmental and local community research in the period 1933–1945. Topics included: the availability of funding for research; the time available to undertake research activity; the quality of research facilities in comparison with overseas universities; other perceived barriers to engaging in research; and, ways in which research might be increased or improved in the department. Respondents at Canterbury College included heads of departments and other staff members in accountancy, biology, botany, chemistry, economics, education, English, geology, history and political science, mathematics, mechanical engineering, modern languages, philosophy and physics. Lastly, the Canterbury University College Students' Association (CUCSA) published a report entitled *University Reform* (Canterbury University College Students Association 1946). The data from these sources include repeated calls for a different mindset with regard to research, the establishment of a University Press to aid publication, scholarships to enable postgraduate research, a change to the examination system to allow greater control of the syllabus, additional staffing (academic, technical and clerical), improved accommodation, increased funding for equipment and travel, and contact with other researchers in New Zealand and overseas.

Karl Popper and a (missing) culture of inquiry

Research and the University (Allan et al. 1945) was essentially a manifesto setting out the requirements of the University if it were to become a research institution. Of its six authors, four were from Canterbury College, one from the University of Otago and one from Auckland University College. The initiative was driven by the Viennese philosopher Karl Popper who was a lecturer at Canterbury College for nine years. Coming from the European tradition of academic research Popper was dismayed at the absence of such a tradition in New Zealand. Indeed, after one year he told a friend that he would have to conceal his research activities because his colleague, Sutherland, frowned upon them (Hacohen 2000, p. 339). In modelling and promoting the research function of the University Popper created “an impact on the academic life of the College . . . greater than that of any other person before or since” (Gardner et al. 1973, p. 262).

Research and the University opened with a quotation from Flexner's (1931) *Universities American English German* in which the authors claimed that research and teaching should be “conceived as hovering on the borders of

the *unknown*, conducted, even in the realm of the already ascertained, in the *spirit of doubt and enquiry*" (from Flexner 1931, p. 242, italics our emphasis). Popper and his colleagues went on to assert: "we regard research and teaching not as separate functions of a University teacher but as complementary parts of a single entity" (Allan et al. 1945, p. 2). The commonly held view that the University is primarily a teaching institution should be abandoned. Rather the University should be looked upon as an institution in which "the spirit of free enquiry is preserved and cultivated" (p. 2).

In order to remedy the situation as it exists in New Zealand a complete change of attitude is required. It must be recognised that a specialist might achieve much greater educational result by teaching his speciality than by spreading his teaching over what is traditionally considered the balanced content of his subject. The view that it is the task of the University to hand to the students a definite body of examinable knowledge must be discarded (Allan et al. 1945, p. 3).

These academics advocated a new unity of research and teaching, following Humboldt. Likewise, the CUCSA report supported the essential complementarity of research and teaching, considered that far too little research was being done in the University and recommended the development of research schools attached to the University. Responses to the questionnaire also indicated the need for the fostering of a different mindset, research tradition or culture in New Zealand. There was a call for research to be "considered as an integral part of department work, enabling better teaching, stimulation of students, freshening of the mind, preservation of self-respect and contact with overseas workers" (Department of Biology).

Structural barriers to inquiry

Research and the University included a direct attack on the examination system as administered by the University of New Zealand. The examination system was also focus of criticism in the data from the questionnaire. Concern was expressed at:

the hampering effect of the unrealistic bounds of a set syllabus and a uniform national examination system. This is a prime barrier to the development of a research tradition, and indeed of real university education. It makes for an artificial division between teaching and research. It engenders cram school habits and attitudes instead of a living interest in problems, a training in tackling them and a sense of responsibility on making pronouncements about them (Department of Economics 1945).

In a similar vein, a senior lecturer in English complained that the current syllabus turns the university teacher into “a re-hasher, an animated text-book”, while an acting professor of physics asserted that “we are committed to a tradition of spoon feeding in this country and students expect to be coached for examinations”. The system, conducted by examiners in Britain, was perceived to stifle teaching freedom and encourage coaching and cramming at the expense of understanding and scholarship. The authors of *Research and the University* concluded that “the educational task of the University must be taken much more seriously than its role in grading students” (Allan et al. 1945, p. 4).

Another concern was the nature of academic workload. The head of the Department of Chemistry reported that practically no research work was carried out by academic staff in the period 1933–1945. This theme was repeated again and again throughout the responses to the questionnaire. Factors constraining research activity were remarkably similar across departments, the major barrier being static staffing levels at a time of rapidly increasing student numbers. For example, “Botany student numbers increased from 51 in 1939 to 156 in 1945. Accommodation, equipment and staff remained practically the same” (Department of Botany). Heavy teaching, examining and administration loads left little time for research. “There is little doubt that, as at present staffed, the Science Departments in the New Zealand University Colleges, have such a heavy burden of teaching, examining and general administration, that no excuse need be made if they did those duties alone” (Department of Physics). A professor of mechanical engineering reported that “my own teaching hours amount to 26 hours per week”. The Department of Economics perceived “a strong tendency in the past to regard the New Zealand Colleges as purely teaching institutions whose main function was to see students through their examinations”.

The absence of funding for research projects was another concern. “Funds have been unobtainable in the past for research projects in this Department within the College” (Department of History and Political Science). Library facilities at Canterbury College were described as “pathetically inadequate” (Department of Economics). These observations were supported by Popper, who commented that the Canterbury College library was about the size of his father’s! (Hacohen 2000). Complaints regarding lack of space were unsurprising. The entire university was still housed at its original (1873) central city site.

The present laboratories are overcrowded and there is no further space either for private rooms for additional staff, or for more than the pre-war number of research students. As soon as men return from the services, wishing to do M.Sc. work, the position will be desperately acute (Department of Chemistry).

Isolation both from colleagues in universities overseas and within New Zealand itself was another factor that affected research activity. A professor in the Department of Chemistry pointed out that “the stimulus of contact with other research workers in similar fields is most fruitful and often essential, but owing to our isolation is usually missing”. Travelling by sea from New Zealand was long and often uncomfortable at the best of times and opportunities would have been severely curtailed in wartime. Popper himself observed that “you have no idea how physical distance, something rather abstract, becomes profoundly and terribly concrete here in New Zealand. One lives a sort of pseudolife, outside the world” (Hacohen 2000, p. 342). Even within New Zealand it seems that inter-institutional contact was limited and that academics experienced a similar sense of isolation from ‘kiwi’ colleagues.

Redefining research

The flurry of activity at this time led to moves to redefine research, culminating with a recommendation in the Canterbury College Council Minutes that:

The University should affirm and pursue the principle . . . that for the developing of research, staffing must be sufficiently liberal, in all departments, to allow teachers the necessary freedom to engage in it. Research itself must be liberally defined, so that it can be seen as the instrument of all departments of knowledge and teaching (University of Canterbury, Council Minutes 1945–1949).

The nature of research had already been raised in the questionnaire data:

My first difficulty is in the definition of research. Some people regard it as exploration beyond the frontier of existing knowledge, others as the application of existing knowledge and methods to new fields or in new ways, still others as new approaches to or presentation of existing knowledge (Professor of Economics)

The call for a more liberal definition of research was supported by Professor I. A. Gordon. In his column in the *New Zealand Listener* (a weekly publication commenting on current events) he defined research as:

the application of critical intelligence and independent judgement to any problem that is capable of systematic study. . . . In the humanities, research often produces not so much new facts as a new synthesis, a new interpretation and an original point of view (Gordon 1946, p. 12).

Setting the scene for the third phase

The activities of this second phase bring into sharp relief the discourses of the past four decades and illustrate the interweaving of local and global influences. The flurry of activity at Canterbury in regard to research parallels that in universities in the northern hemisphere. It is easily explained from a macro-perspective. As a result of the second World War, and particularly in the USA, research became integral to national interests and funding sources shifted from the private to public sector particularly in defence, technology and medicine (Geiger 1993; Lucas 1994). Scientific research attracted substantial funding which in turn raised the existing profile of research as an academic enterprise. Research that had been driven primarily by academic interests became federally funded, contractual and programmatic. The privileging of research occurred particularly at the expense of undergraduate teaching (Geiger 1993). These shifts signal the beginnings of the discourse of research as 'product', and Clark's (1995) research 'drift' and teaching 'drift'.

Such compelling external forces certainly played a part in influencing events at Canterbury College. However, unlike universities in the northern hemisphere, Canterbury lacked an existing research base on which to develop the necessary infrastructure. As with other colleges in the University of New Zealand, it had little involvement in wartime research initiatives. Unlike North American universities, it was unable to take advantage of Geiger's (1993, p. 32) post-war "seller's market for research". The data suggest that the increased activity was more likely influenced by the decades of unrest, the inappropriate conditions under which teaching was expected to be conducted, the part played by Karl Popper and his colleagues, and an increase in funding. In the early part of the twentieth century the shift towards a German model of scientific inquiry was reinforced in the USA and elsewhere by refugees fleeing from Europe (Lucas 1994). Karl Popper's sojourn in Christchurch was part of this flow. In the event, despite the passionate plea for research and teaching to be regarded as a coherent entity, it was instead interpreted by the University as the *addition* of research to the academic agenda – research was to be encouraged but teaching and research were treated as separate functions.

The third phase (1946–1990) – a change of culture

The years 1946–1990 mark a change of culture. During this time Canterbury came of age. In 1962 the University of New Zealand was disbanded and Canterbury College became a University in its own right. Departmental Annual Reports from 1956 until their demise in the 1970s (they were re-instituted in 1998) provide a valuable source of data for this period. Departments were required to report on the disposition of work between members of staff in the department, any staff changes and their effects, scholarships

or other awards obtained by students, future plans for the department and general comments plus a summary of research and scholarship undertaken during the year. They were *not* required to report explicitly on the interrelation of research and teaching, something which is now required in faculty profiling and in applications for promotion. Although some of the concerns voiced in 1946 remained, especially in relation to lack of space, on the whole the tenor of the reports was positive and forward-looking.

Funding, space and the growth of research activity

In November 1946 the Research Committee of the University of New Zealand was established. Its role was to administer £10,000 of which Canterbury's share was just over a quarter (Gardner et al. 1973). At much the same time, the first discussions about the possibility of a new university site were taking place. If Canterbury was to become a 'research' university, as the lobbying of 1945/1946 proposed, then increased funding and improved and expanded accommodation needed to go hand in hand. In the event, the School of Engineering was the first to take up residence at the new, vastly more extensive site in Ilam (a suburb of Christchurch) in 1961, followed by the Faculty of Science in 1966 and the Arts Faculty in the early 1970s.

Research activity gained momentum. Departments commented on the growing number of research students. Laboratories were established, enabling staff and graduate students to work on joint projects. A field station, providing accommodation and laboratory space for 24, was built at Kaikoura (north of Christchurch). Research seminars for staff and students were promoted. In 1967 the Department of English, following a temporary pre-Ilam move, concluded that "the improvement in physical surroundings has had a marked effect on the life of the department . . . the immediate growth in research activity in 1967 was . . . one of the most heartening results of the move".

As well as these developments, the annual reports indicated a much increased incidence of 'refresher leave', often at institutions overseas, and a greatly expanded list of publications. In 1974 the Association of University Teachers called for increased research funding:

All universities in New Zealand operate under Acts which include reference to their duty to advance, maintain and disseminate knowledge through teaching and research. University teachers, through their research, are able to contribute to national development, to keep their teaching function fresh, and to extend the boundaries of human knowledge (University of Canterbury 1974, pp. 4–5).

Four years later the Chancellor of the University of Canterbury was appealing for continued investment in university research.

Why you may ask, why universities? Why not special research institutes, leaving the university to get on with teaching? But what sort of teaching would it be without the refreshment, excitement, stimulation and inspiration that come from working at the frontiers of knowledge and, from time to time, crossing them . . . without that study and research university teaching would become dull and sterile (University of Canterbury 1978, p. 3).

New staff appointments made it possible for lecturers to specialise to a greater extent than previously and thus to link their teaching more closely to their research. In 1956 the Head of the Department of Education reported: "As a long term policy I intend to increase the degree of specialisation in teaching . . . the literature of the subject is now so considerable that acceptance of increased specialisation is necessary in order to maintain and raise standards of teaching". Similarly in 1961, the Department of Classics reported that, with the addition of a new staff member, there would be "a more pronounced move towards specialisation in teaching".

Research growth 'in context'

By the 1950s research at Canterbury College was an accepted feature of academic practice. Taking a local perspective, Gardner et al. (1973, p. 398) attribute the "really explosive development of research activity" starting around 1965 to the changed size and atmosphere of the institution. The change of culture was accompanied by a realisation of the need for a focus on depth rather than breadth of knowledge and specialists rather than generalists, the establishment of supporting structures such as a research committee (and funding), adequate facilities for research, and discourses that focus on research at department level.

The growth in research activity at Canterbury in the 1960s resembles, on a smaller scale, the expansion of research in universities in the northern hemisphere that began two decades earlier. Yet, in the northern hemisphere post-war assumptions about research differed considerably from those in New Zealand. While the University of Canterbury, and its national counterparts, concentrated on the establishment of the infrastructure and physical resources required for *doing* research, research universities in the northern hemisphere were developing coalitions with industry and the military, and with industry and medicine, that were driven by government policies (e.g., Bowden 1996; Slaughter 1998). During the Cold War, such coalitions created the conditions

for the stabilisation of *basic* research, yet they were non-existent at the time in New Zealand.

Nevertheless, the 'idea' underpinning higher education at Canterbury shows evidence of a shift from Newman's teaching university with its focus on the liberal arts, towards a modern 'research' university. During this phase, the data indicate that the research/teaching relation assumed a unidirectional and hierarchical flow from research to teaching to learning – research was the preserve of the academic and teaching was informed by research. Structurally research and teaching are treated separately – the data suggest that whatever the relation, it is implicit and reflects 'no relation' or a 'weak' relation in terms of Robertson's (2003) continuum.

The fourth phase (post 1990) – a 'close' relation between research and teaching

By 1990 the research/teaching relation at Canterbury was inextricably embedded legally, economically, and politically in the national context of higher education. Claims of a 'close' and/or 'strong' relation are made repeatedly. For instance, with reference to the New Zealand Education Act (1989), the University's Charter (1991, p. 1) states that: "a well recognised characteristic of a university is that its research and teaching are closely inter-dependent, and most of its teaching is conducted by people who actively advance knowledge". In the same source, the University undertakes to "observe in recruiting academic staff the principle that teaching is inseparable from research". This commitment to a close relation between research and teaching is reaffirmed in the outgoing Vice Chancellor's Report (University of Canterbury 1997) and that of the incoming Vice-Chancellor (University of Canterbury 1998). The nature of the relation was reiterated in response to Audit requirements: "for Canterbury a strong relationship between teaching and research has *always* been a primary element of its culture" (University of Canterbury 2000, p. 1, italics our emphasis).

National and international influences

In the 1980s the global restructuring of higher education saw some of the greatest changes to the *nature* of academic work than at any time in the previous century (Marginson and Considine 2000; Slaughter and Leslie 1997). Such changes were slower to reach New Zealand. Until 1990, a university in New Zealand was considered the only institution in which research and teaching were related. It was also the only degree granting institution. However, the nineties marked a decade of radical economic restructuring. Higher education became an increasingly open market in which the polytechnics and colleges of education sought and achieved degree-granting status and

began to develop research agendas. Previously unfamiliar issues of quality and accountability took centre stage. The institutional discourses about the research/teaching relation are underpinned more explicitly by the University's response to legislation, and national and international agendas. The external environment drives the University's programme and unlike previous phases the context is now highly competitive.

In 1996 the first national academic audit of New Zealand universities was undertaken by the New Zealand Universities Academic Audit Unit (AAU). The AAU report on the University of Canterbury (1997) highlighted the market driven environment to which the university was struggling to adapt. On the relationship between research and teaching the AAU panel:

formed a very positive view of the way in which research informs teaching at Canterbury University. Examples include lecture content changing annually in terms of the lecturer's research; undergraduates reading review articles; and teaching in research areas quickly moving new ideas down through the undergraduate levels (New Zealand Universities Academic Audit Unit 1997, p. 25).

Despite receiving what was perceived to be such positive feedback on the research/teaching relationship, the University of Canterbury feared for the future of the research/teaching link. Concern was expressed that research monies coming into the university might be separated from teaching monies. If research were to become 'output tagged' it could seriously affect funding for humanities research. From the mid nineties onwards departments were increasingly exhorted to make more visible the links between research and teaching. From the Dean of Arts:

It is currently more important than it has ever been that university staff are seen to not only be involved in research but regularly to publish the results. Research underpins university teaching and governments must be persuaded of the essential nexus between the two (University of Canterbury 1998a, p. 15).

And, in the report of a review of the History Department:

The complex inter-relatedness of teaching and research in universities is obviously important in this debate – we must ensure that at every turn the research input to ALL teaching is highlighted and documented (University of Canterbury 1998b).

These warnings reflected national events. The publication of the Government's White Paper on Tertiary Education (New Zealand Ministry of Educa-

tion 1998) signalled the apparent beginning of a separating out of research and teaching funding with a proportion of research funding to be allocated through a contestable pool. The White Paper was followed in 1999 by a proposal from the Tertiary Education Minister that there should be just two or three well-funded research universities in New Zealand (instead of the then seven) which would focus primarily on research work leaving the others to focus on teaching. All the universities protested vociferously. Somewhat paradoxically, and despite scholarly disagreement about the nature or even the existence of such a link, one of the themes of the second national auditing cycle conducted by the AAU was the 'Teaching/Research Nexus'. The AAU rationalised its inclusion on the basis that its existence was enshrined in legislation and as such it required auditing. "Institutions must therefore specify the expected effect of the link between teaching and research and the AAU audits the institution's processes for achieving this link and the effectiveness of these processes" (New Zealand Universities Academic Audit Unit 1999, p. 14).

Such an explicit focus on the relationship between research and teaching provoked a flurry of activity in all the New Zealand universities. A joint working party was formed at Canterbury consisting of representatives from the University's Research Committee and the newly formed Teaching and Learning Committee. This group was charged with preparing a report on the nature of the research/teaching link at Canterbury and key findings were to be included in Canterbury's *Audit 2000 Portfolio*. The report (Spronken-Smith et al. 2000) outlined the university's obligations and commitments to the integration of research and teaching, discussed mechanisms for monitoring policy, considered current practice as well as factors constraining a close relationship and suggested ways in which the link might be strengthened.

The year 2000 saw another significant change in tertiary education in New Zealand. The new Labour government established the Tertiary Education Advisory Commission (TEAC) to devise a long-term strategic direction for the tertiary education system. Between 1980 and 1999, real funding for universities fell by 36%. There was also a substantial deterioration in the ratio of academic staff to students over the same two decades. "These trends raise serious questions about the capacity of New Zealand's tertiary system to protect the desired level of quality in relation to teaching and research" (TEAC 2001, p. 12).

In their submission to TEAC on issues set out in the Commission's terms of reference, the Association of University Staff (AUS) pointed out that "the interaction of scholarship, research and teaching form the 'signature' by which university-appropriate activities may be differentiated from other tertiary activities" (Association of University Staff 2000, p. 1). A key objective of TEAC's strategic direction was the enabling of life-long learning

for a knowledge society. Such a society emphasises the knowledge content of goods and services, the centrality of research and learning, the importance of critical reflection and debate about knowledge and its use, and recognition of the role of intellect and research as drivers of economic growth (TEAC 2000). The issue is highlighted in the following quotation in which the relationship between research and teaching and the provision of postgraduate education is directly addressed.

The provision of postgraduate education requires a significant level of research intensity and that most of those involved in teaching such programmes should be active researchers . . . the requirement for research (particularly the ‘scholarship of discovery’) and teaching to be linked at the undergraduate level is less compelling. While postgraduate study involves in-depth investigation and specialisation, undergraduate education is concerned primarily with transmitting the basic knowledge and general skills that form the foundation of a particular discipline . . . hence, the primary requirement of those responsible for teaching at this level is a comprehensive and current knowledge of the relevant discipline and the skills to communicate this knowledge in an effective manner (Tertiary Education Advisory Commission 2001a, p. 109).

The Commission recommended that the Education Act 1989 should be amended to require that undergraduate degrees be taught by people with a comprehensive and current knowledge of their discipline and the skills to communicate this knowledge. The Government rejected this recommendation. In the meantime, however, the introduction of Performance-Based Research Funding, which allocates resources according to the quality of the research produced in each institution rather than on the basis of student enrolments, looks set to aggravate rather than ameliorate the tension between research and teaching.

Reflecting on the past – looking to the future

As with every university, the case study provides a picture of an institution that has a unique identity embedded in its local geography, its history, and its people (Clark 1998; Lucas 1994). The hermeneutic task is to learn from the events but at the same time respect their historical autonomy. Our focus on the local illustrates the social construction of institutional knowledge and the process and power of institutional myth making. The case study has explanatory power in that it provides some understanding of the influences that framed research and teaching at Canterbury; that favoured certain construc-

tions and excluded others. Furthermore, despite the evidence of significant change it is also possible to identify recurring themes.

Barnett (2003) notes that the Oxbridge tradition was largely a teaching tradition. Unsurprisingly it was the conditions for teaching that were of greatest concern in the early years at the University of Canterbury. However the teaching ideal was constrained by multiple layers of governance, lack of finance, and the pressures inherent in needs of the local community. Academics were marginalised by the separation of key aspects of their work. They were also situated quite literally at the 'edge' in terms of distance from the academic 'heartland' in the northern hemisphere (see Altbach 1998). Evidence suggests that these conditions supported and reinforced a form of instruction that militated against the development of reason, the use of imagination, and inquiry. As conditions changed and research became established, research and teaching were acknowledged as co-dependent – teaching was informed by research – research as knowledge was transmitted. Access to the 'heartland' was made easier through the use of technology and accessible air travel. By the last phase, research at Canterbury had become – “the dominant project of university life” (Barnett 2003, p. 147). This morphing of research and teaching and their relation reflects international social, political, and economic changes in higher education (e.g., Geiger 1993; Lucas 1994). Yet, particularly in the early years, the local conditions controlled the temporal aspects of change. As Canterbury shifts metaphorically from the periphery towards the centre global ideologies become more evident.

The effect of the relation between governance and academic aspects of teaching and research is also of significance. The governance 'at a distance' in the early years constituted a form of academic imperialism that fragmented and disabled academic work. Although the mechanism differs, fragmentation between Government, university, and academics continues to be evident. Drawing on cases studies of Australian universities, Marginson and Considine (2000) observe that change strategies focus on organization and finance rather than teaching, learning and research. Management works around academic cultures rather than through them. They argue that despite an institution's success and the strength of its academic culture “the tension between academic and managerial perspectives is endemic”. Such tension “absorbs energy, reduces the scope for organisational coherence” (p. 238) and reduces the possibilities for change.

In separate studies, Clark (1998), and Marginson and Considine (2000), identify several 'elements' common to universities that have achieved significant change. One of the elements is a “stimulated academic heartland” (Marginson and Considine 2000, p. 239). At its core is a strengthened relation between research and teaching – an institutional focus on learning as inquiry.

In this climate, academic cultures are respected, their diversity is acknowledged (Barnett 2003; Marginson and Considine 2000) and change occurs by working with them rather than around them.

This notion of a university as an institution of *learning* (Bowden and Marton 1998; Brew 2001) is not new. Yet how might it be achieved in practice? We drew attention previously to the increasing separation of research and teaching and the ways in which these discourses comprise competing ideologies. Quoting the Pro Vice Chancellor at the University of Sydney, Jenkins et al. (2003) suggest that the 'nexus' must be re-engineered or purposefully constructed. They offer multiple, specific strategies for bringing research and teaching into closer alignment at the level of the curriculum, the department, the institution and with regard to the national and international administration of research and teaching. They point out that, in particular, policy making at institutional level has the power to 'shape' research/teaching relations.

Our case study illustrates the importance for Canterbury of academic autonomy. The idea of independence and autonomy can also be applied to departments and centres within universities. Increasingly, commentators are pointing to the importance of valuing and encouraging the diversity of academic cultures within institutions thus heralding a move from a focus on the universal to the specific (e.g., Barnett 2003; Marginson and Considine 2000). Taking this tack, the task for universities is not simply a strengthening the link between research and teaching but recognising the need for different strategies for different situations. The words independence, autonomy, diversity have a familiar ring. They have been part of the student learning literature for several decades.

Our research (Robertson and Bond 2001), which focuses on individual academics' experience at Canterbury, indicates three ways in which the relationship between research and teaching is currently enacted – through the transmission of research findings, through the modelling of a research approach to learning and by engaging students as active participants in the inquiry process. All three approaches are important and all are necessary. Presently, and particularly in the sciences, it would seem that undergraduate teaching relies heavily on transmission. Students are treated as peripheral participants (Lave and Wenger 1991) for much of their undergraduate experience. However modelling plays an important transitional role between 'telling about' and having students 'participate in'. It offers students a glimpse of the research culture of the community prior to their own engagement in disciplinary inquiry. In terms of legitimate peripheral participation, it provides students with an "observational lookout post" (Lave and Wenger 1991, p. 95).

These modelling processes need to be made more explicit for students within the curriculum, and for staff within the culture of the institution.

A growing body of literature indicates that students' understandings of research in particular and academic work in general, even at postgraduate level, may be poor (Jenkins et al. 1998; Willis and Harper 1999; Zamorski 2002). If the research/teaching relationship is to constitute one of the core values of higher education then we must all seek to understand and communicate its special nature. Students need to understand explicitly what it is to learn in a research environment. They need to be exposed early in their university careers to the 'other' (research) side of university activity so that it ceases to be other. For example, at University College, London, all year one students complete a first term assignment in which they interview a member of the academic staff about his/her research (Jenkins et al. 2003).

Mourad (1997) proposes post-disciplinary research programmes as places of instruction as well as research: programmes in which teaching at all levels occurs through and in the course of research where the distinction between the two is blurred; and curricula, that instead of being based on codified knowledge, are determined largely by the direction of the inquiry. In such programmes, research, teaching and learning form a dynamic, flexible and integrated whole. Similarly, Clark (1995, 1997) advocates an inquiry model of education in which the dichotomisation of research and teaching is rejected in favour of research-based teaching and learning. Given the reality of massification, Mourad (1997) and Clark's (1997) proposals could point to a greater separation of undergraduate and postgraduate teaching, along the lines of the North American model. However, Mourad explicitly includes undergraduate education as part of his proposal. Likewise the Boyer Commission (1999) calls for radical reconstruction (rather than cosmetic surgery) that includes turning the prevailing undergraduate culture of receivers into a culture of inquirers.

Ultimately, the scholarship and excitement of higher education can only be understood by active participation in the inquiry process. Students at all levels can and should be legitimate participants in inquiry. Specifically, they should be encouraged to become familiar and work with the disciplinary tools of knowledge creation; to adopt a critical stance apropos knowledge and to observe and participate in the processes of knowledge creation through discussion, problem-based learning approaches, laboratory work, field work and individual and group research projects.

These ideas are not new. They were advocated by Humbolt in the nineteenth century, and Popper and his colleagues in 1945. Yet our case suggests we cannot hope to advocate for inquiry in the absence of a supporting culture of inquiry and critical reflection. Even more fundamentally, if the process of

inquiry itself is narrowly or poorly understood then fostering inquiry becomes a dubious undertaking. For change to occur, universities urgently need to examine the way in which their discourses support the status quo – the ways in which their views of knowledge influence their practices. As academics we need to challenge these dominant discourses which, in their emphasis on accountability and performativity are further fragmenting research, teaching and learning. We need to engage as critical beings, embracing both critical reflection and action (Barnett 1997). As part of this process we must stop merely asserting a close relation between research and teaching and start exploring carefully the nature of the relation as it exists and as it might exist in universities of the future. Only in this way can the advantages of working and studying in an institution that celebrates “the spirit of doubt and enquiry” (Allan et al. 1945) be clearly demonstrated and defended.

Acknowledgements

The authors thank the two anonymous reviewers, and Professors Keith Ballard and Chris Heath for their extremely helpful insights and suggestions.

References

- Allan, R., Eccles, J., Forder, H., Packer, J., Parton, H. and Popper, K. (1945). *Research and the University*. Christchurch: University of Canterbury.
- Altbach, P. (1998). *Comparative Higher Education: Knowledge, the University, and Development*. London: Ablex Publishing Corporation.
- Association of University Staff (2000). ‘AUT staff choices’, *Education Review*, February 4, p. 1.
- Association of University Staff (2000). *Submission to the Tertiary Education Advisory Commission on Issues Set Out in the Commission’s Terms of Reference*. Wellington: AUS.
- Atkinson, T. (1969). *Professional Education at Canterbury University College 1883–1953*. Unpublished M.A. Thesis, University of Canterbury, Christchurch.
- Barnett, R. (1990). *The Idea of Higher Education*. Buckingham: Open University Press.
- Barnett, R. (1997). *Higher Education. A Critical Business*. Buckingham: Open University Press.
- Barnett, R. (2000). *Realising the University in an Age of Supercomplexity*. Buckingham: Open University Press.
- Barnett, R. (2003). *Beyond All Reason. Living with Ideology in the University*. Buckingham: Open University Press.
- Barnett, R. and Griffin, A. (eds.) (1997). *The End of Knowledge in Higher Education*. London: Cassell.
- Beaglehole, J.C. (1937). *The University of New Zealand: An Historical Study*. Wellington: New Zealand Council for Educational Research.
- Bond, C. (2000). *The Development of Students’ Experiences of Learning in Higher Education*. Unpublished Ph.D. Thesis, Griffith University, Queensland.

- Bowden, V. (1996). 'Too few academic eggs', in Shattock, M. (ed.), *The Creation of a University System*. Oxford: Blackwell, pp. 80–94.
- Bowden, J. and Marton, F. (1998). *The University of Learning: Beyond Quality and Competence in Higher Education*. London: Kogan Page.
- Boyer Commission (1999). *Reinventing Undergraduate Education: A Blueprint for America's Research Universities*. Stony Brook, New York: Carnegie Foundation for the Advancement of Teaching.
- Brew, A. (2001). *The Nature of Research: Inquiry in Academic Contexts*. London: Routledge/Falmer.
- Brew, A. (2003). 'Teaching and research: New relationships and their implications for inquiry-based teaching and learning in higher education', *Higher Education Research and Development* 22(1), 3–18.
- Buchbinder, H. (1993). 'The market oriented university and the changing role of knowledge', *Higher Education* 26, 331–347.
- Canterbury University College Students' Association (1946). *University Reform: A Report by a Committee of the Canterbury University College Students' Association*. Christchurch: CUCSA.
- Clark, B. (1995). *Places of Inquiry: Research and Advanced Education in Modern Universities*. Berkeley: University of California Press.
- Clark, B. (1997). 'The modern integration of research activities with teaching and learning', *Journal of Higher Education* 68(3), 241–255.
- Clark, B. (1998). *Creating Entrepreneurial Universities: Organizational Pathways of Transformation*. Oxford: Pergamon.
- Codd, J. (1997). 'Knowledge, qualifications and higher education: A critical view', in Olssen, M. and Matthews, K.M. (eds.), *Education Policy in New Zealand: The 1990s and Beyond*. Palmerston North: The Dunmore Press, pp. 130–144.
- Feldman, K. (1987). 'Research productivity and scholarly accomplishment of college teachers as related to their instructional effectiveness', *Research in Higher Education* 26(3), 227–291.
- Flexner, A. (1931). *Universities American English German*. Oxford: Oxford University Press.
- Foucault, M. (1982). 'The subject and power', in Dreyfus, H. and Rainbow, P. (eds.), *Michael Foucault: Beyond Structuralism and Hermeneutics*. Brighton: The Harvester Press, pp. 208–226.
- Fox, M. (1992). 'Research, teaching, and publication productivity: Mutuality versus competition in academia', *Sociology of Education* 65, 293–305.
- Gadamer, H.G. (1989). *Truth and Method* (2nd edn.) (J. Weinsheimer and D. Marshall, Trans.). New York: Continuum.
- Gardiner, M. (1992). *The Dialogics of Critique: M.M. Bakhtin and the Theory of Ideology*. London: Routledge.
- Gardner, W., Beardsley, E. and Carter, T. (1973). *A History of the University of Canterbury 1873–1973*. Christchurch: University of Canterbury.
- Geiger, R. (1993). *Research and Relevant Knowledge. American Research Universities Since World War II*. New York: Oxford University Press.
- Gordon, I.A. (1946, May). 'The University at the crossroads', *The New Zealand Listener* 14(359), 12–13.
- Hacohen, M. (2000). *Karl Popper – The Formative Years, 1902–1945*. Cambridge University Press.

- Harrop, A. (1939). 'The University in New Zealand', in Bradby, E. (ed.), *The University Outside Europe. Essays on the Development of University Institutions in Fourteen Countries*. London: Oxford University Press, pp. 185–206.
- Hattie, J. and Marsh, H. (1996). 'The relationship between research and teaching: A meta-analysis', *Review of Educational Research* 66(4), 507–542.
- Hight, J. and Candy, A. (1927). *A Short History of the Canterbury College (University of New Zealand) with a Register of Graduates and Associates of the College*. Christchurch: Whitcombe & Tombs.
- Jenkins, A., Blackman, T., Lindsay, R. and Paton-Saltzberg, R. (1998). 'Teaching and research: Student perspectives and policy implications', *Studies in Higher Education* 23(2), 127–141.
- Jenkins, A., Breen, R., Lindsay, R. with Brew, A. (2003). *Reshaping Teaching in Higher Education*. London: Kogan Page.
- Jensen, J. (1988). 'Research and teaching in the universities of Denmark: Does such an interplay really exist?' *Higher Education* 17, 1–26.
- Lave, J. and Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- Lucas, C. (1994). *American Higher Education. A History*. New York: St. Martin's Griffin.
- Marginson, S. and Considine, M. (2000). *The Enterprise University. Power, Governance and Reinvention in Australia*. Cambridge: Cambridge University Press.
- McCulloch, G. and Lowe, R. (2003). 'Introduction: centre and periphery – networks, space, and geography in the history of education', *History of Education* 32(5), 457–459.
- Mourad, R. (1997). *Postmodern Philosophical Critique and the Pursuit of Knowledge in Higher Education*. Westport, Connecticut: Bergin & Garvey.
- Neumann, R. (1992). 'Perceptions of the teaching-research nexus: a framework for analysis', *Higher Education* 23, 159–171.
- Newman, J. (1960). *The Idea of a University* (Rinehart Edition, 102). New York: Holt, Rinehart and Winston.
- New Zealand Government (1877). *Education Act*.
- New Zealand Government (1989). *Education Act*.
- New Zealand Government (1990). *Education Amendment Act*.
- New Zealand Ministry of Education (1998). *Tertiary Education in New Zealand: Policy Directions for the 21st Century: White Paper: Tertiary Education Review*. Wellington: Ministry of Education on behalf of the Government of New Zealand.
- New Zealand Universities Academic Audit Unit (1997). *Report on the University of Canterbury*. Wellington: New Zealand Vice-Chancellors' Committee.
- New Zealand Universities Academic Audit Unit (1999). *Audit Considerations for Some Academic Activities*. Wellington: AAU.
- New Zealand University Reform Association (1911). *University Reform in New Zealand*. Wellington: Whitcombe & Tombs.
- Parton, H. (1979). *The University of New Zealand*. Auckland University Press.
- Peters, M. and Roberts, P. (1999). *University Futures and the Politics of Reform in New Zealand*. Palmerston North: The Dunmore Press.
- Readings, B. (1996). *The University in Ruins*. Cambridge, Massachusetts: Harvard University Press.
- Reichel, H. (1925). *Report of Royal Commission on University Education in New Zealand*. Wellington: Government Printer.
- Robertson, J. (2001). *The Relation between Research and Teaching: Forging Partnerships in a Community of Inquiry*. Paper presented at the 24th HERDSA Conference, Newcastle.

- Robertson, J. (2003). *Research and Teaching in a Community of Inquiry*. Unpublished Ph.D. Thesis, University of Canterbury, Christchurch.
- Robertson, J. and Bond, C. (2001). 'Experiences of the relation between teaching and research: What do academics value?' *Higher Education Research and Development* 20(1), 5–19.
- Rowland, S. (1993). *The Enquiring Tutor*. Basingstoke: Falmer Press.
- Rowland, S. (1996). 'Relationships between teaching and research', *Teaching in Higher Education* 1(1), 7–20.
- Rowland, S. (2000). *The Enquiring University Teacher*. Buckingham: Open University Press.
- Slaughter, S. and Leslie, L. (1997). *Academic Capitalism. Politics, Policies, and the Entrepreneurial University*. Baltimore: The Johns Hopkins University Press.
- Slaughter, S. (1998). *Academic Capitalism: Moving toward Market in the Sciences, the Arts, and Professional Schools*. Presented at the Survive to Thrive conference, Temple University, <http://astro.temple.edu/~meziani/templetoday/Slaughter.html>.
- Smeby, J.C. (1998). 'Knowledge production and knowledge transmission. The interaction between research and teaching at universities', *Teaching in Higher Education* 3(1), 5–20.
- Spronken-Smith, R., Jennings, J., Robertson, J., Mein Smith, P., Vincent, G. and Wake, G. (2000). *The Research-teaching Link at Canterbury*. Christchurch: University of Canterbury.
- Tertiary Education Advisory Commission (2000). *Shaping a Shared Vision*. Wellington.
- Tertiary Education Advisory Commission (2001). *Shaping the System*. Wellington.
- Tertiary Education Advisory Commission (2001a). *Shaping the Funding Framework*. Wellington.
- The Carnegie Foundation for the Advancement of Teaching (2000). Category definitions. <http://www.carnegiefoundation.org/Classification/CIHE2000/defNotes/Definitions.htm>.
- University of Canterbury (1945). *Questionnaire on Research Practices*. Macmillan Brown Library 1121. Christchurch: UC.
- University of Canterbury (January 1945–December 1949). *Council Minutes, Book 12*. Christchurch: UC.
- University of Canterbury (1974, 5 July). 'AUT report shows NZ well behind Britain and Australia', *Chronicle* 9(4). Christchurch: UC.
- University of Canterbury (1978, 5 May). 'Chancellor appeals for continued investment', *Chronicle* 13(3). Christchurch: UC.
- University of Canterbury (1991). *The Charter of the University of Canterbury*. Christchurch: UC.
- University of Canterbury (1997). *Annual Report*. Christchurch: UC.
- University of Canterbury (1998). *Annual Report*. Christchurch: UC.
- University of Canterbury (1998a, August). *Review of the Department of History*. Christchurch: UC.
- University of Canterbury (1998b, July). *Arts Faculty Newsletter*. Christchurch: UC.
- University of Canterbury (2000). *Audit 2000 Portfolio*. Christchurch: UC.
- Willis, D. and Harper, J. (1999, July). *Putting the Worms Back in the Can: Encouraging Diversity in the Teaching Research Nexus*. Paper presented at the Higher Education Research and Development Society of Australasia Conference, Melbourne, Australia.
- Zamorski, B. (2002). 'Research-led teaching and learning in higher education: A case', *Teaching in Higher Education* 7(4), 411–427.